

THE RELATION BETWEEN EXTRACURRICULAR ACTIVITIES WITH
ACADEMIC AND SOCIAL COMPETENCIES IN SCHOOL AGE CHILDREN: A
META-ANALYSIS

A Dissertation

by

CHARLA PATRICE LEWIS

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

August 2004

Major Subject: School Psychology

THE RELATION BETWEEN EXTRACURRICULAR ACTIVITIES WITH
ACADEMIC AND SOCIAL COMPETENCIES IN SCHOOL AGE CHILDREN: A
META-ANALYSIS

A Dissertation

by

CHARLA PATRICE LEWIS

Submitted to Texas A&M University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Approved as to style and content by:

Michael J. Ash
(Chair of Committee)

Cynthia A. Riccio
(Member)

Christine Stanley
(Member)

Karla Anhalt
(Member)

Victor Willson
(Head of Department)

August 2004

Major Subject: School Psychology

ABSTRACT

The Relation Between Extracurricular Activities with Academic and Social Competencies in School Age Children: A Meta-Analysis. (August 2004)

Charla Patrice Lewis, B.A., The University of Texas at Austin

Chair of Advisory Committee: Dr. Michael J. Ash

There has been a growing discussion in the fields of education and psychology about the relationship between social skill proficiency and academic excellence. However, the presence of extracurricular involvement as promoting both academic and social development has not been thoroughly explored. The most recent literature syntheses and meta-analyses on extracurricular activity participation were conducted in the 1980's. An updated review and quantitative look at the participation literature is due. The purpose of this study is to integrate participation studies from the 1990s and give summative information as to the impact of extracurricular activity participation on various educational and psycho-social characteristics. Of the 164 identified studies, 41 were included in these meta-analyses. The current analyses produced 6 different activity categories: general extracurricular activity, sports, work and vocational activities, performing arts, pro-social activities, and community-based activities. The current meta-analyses suggest student outcomes were significantly related to general extracurricular activity and pro-social activity participation. General activities and pro-social activities had the most impact on academic achievement, while performing arts and pro-social activities' participants reported the largest effect on identity and self esteem related outcomes. Sports and related activities (i.e. Cheerleading) were not as strongly linked to

academic achievement indicators as anticipated and student workers had more negative outcomes than any other activity participants. In conclusion, the best outcomes for children and adolescents are brought about through well-built, developmentally appropriate structured activities. Moreover, the academic and social profits of extracurricular activities that have been examined in this study can be used to inform program planning and implementation.

DEDICATION

To my grandfather Lloyd Lewis Sr., who planted my seeds of excellence and perseverance with his words, “You could be the family’s first doctor.”

ACKNOWLEDGEMENTS

First and foremost, I give the utmost honor and thanksgiving to God, Sun/Moon/Earth, and my ancient predecessors from whom I inherited grace, strength, and prosperity in the face of adversity. From start to finish, this research document is a manifestation of my arduous lifelong aspiration to become a doctor and grow into myself. I am ever grateful for the process.

To my mother, Marcia A. Lewis Edgley, and my father, Charles A. Lewis: I have an overwhelming and indescribable appreciation for all the love, encouragement, and motivation you two have given me. I have become what you have worked and prayed so diligently for-- a wonderful, healthy, self-sufficient, and spiritual person. Hallelujah! The best is yet to come!

To my second mother, Bertha M. Potier Lewis, my grandparents, godparents, siblings, and extended members of the Lewis, Malbroue, and Potier families: I stand on your shoulders, your vision, and your prayers. I could not have accomplished this without the love and support of all of you.

To all the bosom buddies and lifelong friends I've acquired along my educational and personal journeys: thank you for helping me define who I am and loving me in spite of my shortcomings. To the fantastic staff at the University of Maryland School Mental Health Program, Center for School Mental Health Assistance, and the FUTURES Retention Program: thank you so very much for all your understanding, flexibility, and encouragement during these last two years. To my earth angels Dr. Michael J. Ash, Dr. Brigitte N. Frederick, Dr. Alfred A. Amado, Ry A. Rose, N. Yvonne Odimgbe, Tanya M. Potier-Kirkland, Dr. Typhannie N. Walker, Keisha M. Beasley, Bryan G. Langs, Carrinda

L. Myers-Roberts, Yolanda N. Simpson (also soon-to-be Dr.!), Valerie Sinady, and Michael R. Green: I am eternally indebted to each of you; you are the wind beneath my wings.

To my professors, especially those who took a genuine and engendering interest in my growth as a scholar and person, Drs. Manuel Ramirez, Melvin Sykes, Michael Lauderdale, Michael J. Ash, Tim Cavell, Jan Hughes, Jerome Kapes, Cyndi A. Riccio, and Kathy Webb: a million thank yous for your patient and reassuring faith in me!

And thank you to all the countless other people that I've encountered along this path who have impacted my life in innumerable ways. If not for your faith in me or fear of me, I would not be the person I am today. There is a lesson in every experience and I deeply cherish the unexpected gifts you all gave to me.

Up, Up and Away!!! Amen.

TABLE OF CONTENTS

	Page
ABSTRACT.....	iii
DEDICATION.....	v
ACKNOWLEDGEMENTS.....	vi
TABLE OF CONTENTS.....	viii
CHAPTER	
I INTRODUCTION	1
Purpose of the Study	3
Significance of the Problem	3
Research Questions.....	5
Definitions of Terms	6
Importance of the Study.....	7
II REVIEW OF PARTICIPATION LITERATURE.....	9
General Introduction to Literature Review	9
Historical Perspective of Extracurricular Involvement.....	11
Theoretical Approach to Extracurricular Activity Participation.....	12
Resilience Theory	13
Extracurricular Participation as an Agent of Resilience	16
Importance of Timing and Degree of Extracurricular Involvement	21
Level of Activity Engagement.....	21
Simultaneous Participation in Multiple Extracurricular Activities.....	24
Activity Participation in Middle School.....	25
Review of Specific Extracurricular Activities.....	27
Sports and Athletics-Related Activities	27
Student Employment and Vocational Education Activities.....	31
Performing Arts Activities	34
“Other” School Activities and General Extracurricular Participation.....	36

CHAPTER	Page
	Pro-Social Activities 37
	School-Affiliated vs. Community-Based Extracurricular Involvement 40
	Statement of the Problem 41
	Purpose of the Present Study 42
	Researcher Expectations 43
III	METHODOLOGY 44
	Introduction to Meta-Analysis 44
	Location and Selection of Studies for Analysis 46
	Procedures 47
	Analyses 48
	Research Questions 49
	Description of Meta-Analytic Process 50
	Calculation of Effect Sizes 52
	Effect Sizes from Experimental Studies 53
	Effect Sizes from Correlational Studies 55
	Effect Sizes from Multiple Regression Studies 56
	Statistical Checks and Corrections 58
IV	RESULTS 63
	Preface to Analyses 63
	Data Analyses 64
	Restatement of Research Questions 65
	Research Question #1 65
	Research Question #2 65
	Research Question #3 68
	Research Question #4 69
	Research Question #5 71
V	SUMMARY AND DISCUSSION 73
	Summary Statement 73
	General Extracurricular Activity Participation 73
	Sports and Athletics-Related Activities 74
	Student Employment and Vocational Education Activities 75
	Performing Arts Activities 76
	Pro-Social/Community Activities 77
	Longitudinal Extracurricular Participation 78
	Exposition of Researcher Expectations 79
	Concluding Statement 80
	Research Limitations 81

	Page
Outlying Study Effect Values.....	81
Inter-rater Reliability.....	82
No Pass, No Play Policy.....	84
Self Selection Bias	85
Conceptual Flaws from Primary Studies.....	86
Experimental Design Flaws.....	87
Future Implications for Research and Practice.....	89
REFERENCES.....	95
APPENDIX A.....	107
APPENDIX B.....	109
APPENDIX C.....	110
VITA.....	112

CHAPTER I

INTRODUCTION

American public schools face an awesome responsibility. With new educational legislation, such as No Child Left Behind and the pending re-authorization of IDEA 1997, increasing measures of accountability and student achievement are strongly emphasized. A diverse population of children has to be educated and socialized in the face of dwindling resources and overburdened support systems. On a deeper level, students have more immediate challenges that compound difficulties caused by financial and administrative hindrances. Due to personal and environmental factors, children can become “at-risk” for adjustment and developmental problems. The most pronounced risk factors for students are low academic achievement and low socialization compared to age-appropriate expectations. Mahoney and Cairns (1997) noted that there is higher risk for students who are older than their classmates (primarily due to grade retention), those who have aggressive tendencies, those who exhibit below average academic performance, those who hold low peer status, and those who have a low socio-economic status (SES) level. A number of additional characteristics distinguish children who are at risk for school and social difficulties from more successful students; these students were more concerned with peer pressure and conformity, held an external locus of control, exerted less effort in school, had lower self esteem and peer status, and were more likely to report boredom and negative attitudes about achievement (Ford, 1995; McMillan & Reed, 1993).

This dissertation follows the style of the *Journal of Youth and Adolescence*.

For these and other reasons, researchers and educators have designed school experiences to aid both academic and non-academic successes in school age children. The academic curricula are meant to provide children with the experience and knowledge necessary to be prepared primarily for the world of work. However, academic and social factors are necessary to a child's development (Armentrout, 1979; Belle, 1999; Franklin, 1992; Wentzel, 1991). Reading, writing, and other indispensable academic skills are intertwined with learning about self, communicating and working well with others, and gaining broader understanding of cultural influences. Furthermore, social competence in childhood often is cited as a predictor of academic achievement (Marsh, 1992; Taylor, 1991; Vaughn & Haager, 1994; Wentzel, 1991). Conversely, socially rejected or aggressive children appear to be at-risk for academic failure (Brown, 2000; Scott, 2001).

Children who are considered successful in schools and have mastered integration of academic and social skills sets often list involvement in extracurricular activities as an important part of their school lives. Children who do not see themselves as competent in academic, social, or other activities (such as athletics, music, drama, or scouting) during their elementary years sometimes report depression and social isolation more often than their peers, as well as higher levels of anger and aggression (Eccles, 1999). Students' level of competence serves as a feedback influence on school success and achievement self-perceptions (Eccles & Midgley, 1990; Wigfield, Eccles, MacIver, Reuman, & Midgley, 1991). While there are numerous interventions for academic and social skill difficulties, the present study asserts that participation in extracurricular activities is a useful and acutely appropriate vehicle for children to gain valuable academic and social experiences, as well as related strategies for overall healthy psycho-social development.

Purpose of the Study

Inspired by the work of Holland and Andre (1987), this study seeks to refresh their digest of participation studies with more recent research findings, shifts in theory, and practical, real world emphases. This meta-analysis will focus on determining the extent to which activity participation influences academic achievement and social competencies. Furthermore, the current study serves as a research synthesis of extracurricular activity studies using research information from the last decade (1990 to 2001).

A number of studies that compare activity types have been done, but the results have not been synthesized into one collection of results. The present study combines summary information for a number of activity areas in addition to the usually explored areas of sports and work literature. Besides the literature review, valid studies will be selected for statistical analysis in order to produce a comprehensive quantitative summary to accompany literature trends. Any empirical evidence of participation's impact on academic and social outcomes for African American students in the sample population also will be presented. The study will conclude with implications for the field and suggestions for future investigation of participation effects.

Significance of the Problem

For those children and adolescents unsuccessful in the school setting, the availability of other avenues for skill and value building are very important (Garibaldi, 1992; Kunjufu, 1982). Extracurricular programs offer alternative environments in which “children can learn about themselves and their worlds, and can discover opportunities for carving their own versions of success” (Eccles, 1999, p. 31). These programs allow

children to safely explore independence, peer relationships, new skills, leadership, and non-parental adult influence. Moreover, the extra-curriculum has the goal of providing another set of experiences that may engender positive growth.

Much of what has been done in participation research is qualitative, centered on description, narration, and case studies of children and adolescents (Belle, 1999; Ford, 1995; McMillan & Reed, 1993; Reis, Hebert, Diaz, Maxfield, & Ratley, 1995). Few controlled, empirical studies have been conducted on the influence of extracurricular involvement on academic and social outcomes. Furthermore, the majority of these studies still focus on sports; yet, extracurricular participation research is broadening to include other activities.

The participation research literature grows with every new study; however, large literature syntheses are rare. Holland and Andre (1987) completed the last major literature review of extracurricular participation literature. Since 1987, there have been more participation studies that have included brief reviews of the literature. However, they typically focus on one kind of extracurricular involvement (Holland & Andre, 1994; Silliker & Quirk, 1997). Athletic involvement and student employment are the two most commonly studied activity types. An updated summary of the participation literature that encompasses a greater variety of activity outcomes is needed. In addition, there are very few quantitative, meta-analytic summaries about activity participation in general. A study that provides statistical analysis for more than one extracurricular activity area has not been completed to date.

Extracurricular activities' relationship to academic and educational ideals is often researched; however, theory is beginning to tie some social/personality traits to academic

achievement as well. Participants are experiencing impacts in more psychosocially oriented aspects of development. Examples of non-academic gains (i.e. peer acceptance, self esteem, conflict resolution skills) of participation are beginning to appear more within the literature. However, these effects have not been assembled for comparative study.

Research Questions

Studies have found that children who participate in sports have higher grade point averages, better academic and social self concepts, higher graduation rates, and better peer relations than children who do not participate in extracurricular activities at all (Eccles & Barber, 1999; Gerber, 1996; Griffin, Chassin, & Young, 1981; Mahoney & Cairns, 1997; McNeal, 1995). However, there is little discussion of applications of this knowledge. The degrees of participation benefit and distinguishing traits of participation that are particularly salient to students' academic and social resiliency have not yet been explored broadly.

The following questions will be asked:

1. Do effect sizes differ based on activity type?
2. What social variables are significantly related to engagement in extracurricular activity?
3. What is the relationship between academic achievement and extracurricular activity across studies?
4. What is the relationship between academic achievement, social competence, and extracurricular activity over time in students' lives?
5. Do activity participation effect sizes differ at all for non-majority culture

males, particularly African American boys, in the literature? If so, what are some of the characteristics of the differences?

Definition of Terms

Extracurricular Activity	Any activity that is additional to core academic content of the schools, usually taking place during non-school hours. Activities can be housed in school or in the community; this includes sports, choir/drama, student government, and Future Farmers of America. For the purposes of this study, extracurricular activities directly related to school curricula (i.e. Spanish club, tutoring, honor societies) were excluded.
Academic Achievement	The completion of an educational goal or academic requirement. Academic achievement is measured by earned grades, achievement tests, high school graduation rates and post graduation outcomes.
Educational Aspirations	A student's plans to enroll in college preparation courses and student intentions to attend college. These hopes, in addition to academic self concept scores, were tied to the amount of effort and faith the student had in their academic ability and school environment.
Engagement	The opposite of alienation to school; feeling a sense of connectedness and interest in the school environment. Engagement or participatory behaviors include school attendance rates, educational aspirations, and academic

	effort and preparedness.
Risk Behaviors	Substance abuse, sexual activity, social isolation, and aggressive behaviors are risk behaviors that jeopardize healthy psycho-social development. Educational risk factors include grade retention, dropout rates, low academic achievement, and low peer status.
Identity Formation	Social and intra-psychic development factors which include reported measures of self esteem, self efficacy, general self concept, social self concept, peer status and/or popularity, and locus of control. This cluster notes the confluence of student identity, associated peer group, and status among peers as it relates to participation in different activities and organizations.

Importance of the Study

Educational systems under stress often include extracurricular programming on the list of disposable services and cut funding allotted for such activities. The present study offers a comprehensive review of the meaningful impact of student extracurricular activities and the farther-reaching life benefits students gain from said participation. The body of research literature advocates for the continuation of the extra-curriculum in the promotion of positive school attitudes and academic productiveness. Administrators and other financial decision makers may be less likely to completely remove non-academic activities when armed with empirical cost/benefit information.

Comparative information about the relative effectiveness of each activity type on

student outcomes also will be presented. Beginning exploration of activity characteristics and distinguishing study effects presented here also may direct further scientific inquiry into analyses of unique moderator variables. Said moderators would assist those who want to build effective extracurricular programs in the schools.

CHAPTER II

REVIEW OF PARTICIPATION LITERATURE

This chapter will review the literature base on general participation trends and implications for further study. Expectations of study outcomes and a restatement of the significance and purpose of the present study close the chapter.

General Introduction to Literature Review

In a number of studies, researchers have shown an association between extracurricular activity participation and reduced juvenile delinquency, substance use, teenage pregnancy, violent crime victimization, and changes of dropping out of school (Mahoney & Cairns, 1997; Marsh, 1992; Maxwell & Liu, 1998; Scott, 2001). Much of what has been done in participation research is qualitative, descriptive narration and case studies of children and adolescents (Belle, 1999; Ford, 1995; Reis et al., 1995). Few controlled empirical studies have been conducted on the influence of extracurricular involvement on academic and social outcomes.

Holland and Andre (1987) asserted that most often within the empirical literature, relationships between athletic participation and academic achievement have been investigated. Studies conducted within the last decade looked at possible effects of sports participation on academic and social development (Braddock, Royster, Winfield, & Hawkins, 1991; Silliker & Quirk, 1992). These and other studies have found that children who participate in sports have higher grade point averages, better academic self concepts, higher standardized test scores, stronger commitment to educational accomplishments, higher graduation rates, better social self concept, and better peer relations than children who do not participate in extracurricular activities at all (Eccles & Barber, 1999; Gerber,

1996; Mahoney & Cairns, 1997; McNeal, 1995).

In addition to sports coverage in the early participation studies, work-related activity studies also have a strong presence in the literature base. More recent studies of participation explored other kinds of extracurricular activities (e.g. performing and visual arts, community service, vocational clubs), more diverse student populations (low SES, minority, female vs. white, high SES males), and mechanisms by which participation translate into academic and social competencies (Holland & Andre, 1994; McNeal, 1999).

Studies based on longitudinal research of children, which attempt to use methodologically sound correlational data, showed that extracurricular activity participation was positively related to GPA, educational aspirations, educational /occupational attainment, and standardized achievement test scores (Hanks & Eckland, 1976; Holland & Andre, 1987; Marsh, 1992; Olson, 1990; Young, Helton, & Whitley, 1997). Positive effects of participation can be particularly important for students who belong to ethnic minorities, students with disabilities, and students at risk of dropping out of school (Braddock et al., 1991; Clark, 1991; Gordon, 1995; Marsh, 1992; McNeal, 1998; Rodney, Rodney, & Mupier, 1999).

The premise of the present study is that extracurricular activity serves as a valid promoter of resilience in children. Below is an investigative glance into how resilience is engendered by extracurricular activity participation. After resilience theory is explored, general trends in participation outcomes, as well as the review of specific kinds of extracurricular activities and their impact on student development, will be presented. Finally, there is a brief discussion of important moderating factors and proposed

processes of resilience associated with extracurricular activities participation.

Historical Perspective of Extracurricular Involvement

Generally, the attitude about extracurricular activity involvement is that it is a positive, enhancing factor in the academic and social development of children (Gordon, 1996; Holland & Andre, 1987; Reis et al., 1995; Reynolds & Karr-Kidwell, 1996; Silliker & Quirk, 1997; Werner & Smith, 1982; Young et al., 1997). However, there was not always as much theoretical and empirical support of this assertion. Based on the idea that school is a place for academic pursuits only, studies of extracurricular activity involvement from the 1950's and 1960's questioned the appropriateness or need for non-scholarly subjects in the school curricula (Gholson, 1985).

Academic clubs and honor societies were seen as “extras” to the traditional school curriculum, but their utility was justified as they were directly linked to academic achievement (Mahoney & Cairns, 1997; Marsh, 1992). It was disputed whether athletics and other student activities detracted time and effort from academics and negatively impacted achievement and investment in school (Camp, 1990; Marsh, 1992; McNeal, 1998). Research from 1960's and 1970's argued that once enrolled in activity, adolescent culture placed more value on social factors than academics (Otto, 1976; Spady, 1970). Therefore, students with higher social status, like athletes, “popular” students, and leaders in extracurricular activities are role models, not students who have high academic achievement (Gerber, 1996). If students are conforming to this value system, then more emphasis may be placed on extracurriculars and gaining social status rather than academic-oriented activities.

Marsh (1991) called this perspective the zero sum model; activities are in direct

competition with academic pursuits and students suffer academically because of time spent on non-academic activities. This thought provided an historical base and theoretical rationale for "No pass, no play" policies (Gerber, 1996; NASBE, 1999). Using nationwide longitudinal data sets (i.e. High School and Beyond, NELS: 88), research from the 80's and 90's produced empirical and qualitative evidence contrary to the zero sum assertion. A number of more recent studies found that the strongest relations and positive outcomes from participation were social in nature (self-esteem, peer status, locus of control) (Fejgin, 1994; Gordon, 1995; Holland & Andre, 1987; Marsh, 1991; Snyder & Spreitzer, 1992; Spady, 1970). The newer school of thought on extracurricular participation affirmed that social factors are benefits of participation that indirectly impact scholastic achievement (Finn & Rock, 1997; Gerber, 1996; Haensly, Lupkowski, & Edlind, 1986); the argument was built on an earlier supposition that social and academic factors were both necessary components of educational attainment and achievement (Armentrout, 1979; Gholson, 1985). This developmental model is consistent with Marsh's (1992) commitment to school hypothesis, which suggests that the social and academic aspects of the school life are linked. Participation in extracurricular activities increases academic self concept and other life skills, which in turn, affects academic performance and ascription to school's cultural values (Ford, 1995; O'Donnell, 1992).

Theoretical Approach to Extracurricular Activity Participation

Resilience is one's ability to respond positively to stress, adversity, and obstacles (Braddock et al., 1991; Murphy & Moriarity, 1976; Rutter, 1987). It is viewed conceptually as the opposite of risk. For example, low self esteem and low academic achievement are risk factors while high self esteem and academic achievement are

protective factors. In constructing resilience theory, Rutter (1998) distinguished four types of protective mechanisms that help individuals to mediate adverse circumstances or demonstrate resilience behaviors. Included are mechanisms that reduce the impact of risk, reduce the likelihood of negative chain reactions associated with adversity, establish and maintain self esteem and self efficacy, and create new opportunities for success.

Resilience Theory

Reduction of risk impact is primarily a process of preparation for dealing with untoward life events. This process involves tempering the negative effects of life events and pre existing risks so that the child emerges from them with fewer harms inflicted. Reduction of risk can occur through two different paths: through altering the meaning or danger a risk variable holds for a child or altering the child's exposure to risky situations (Mahoney & Cairns, 1997; Rutter, 1987). One such example of risk reduction is stress inoculation training (Meichenbaum & Deffenbacher, 1988). A child may be exposed to a major stressor, such as death of a loved one, divorce, or moving to a new city. Reducing the risk may involve planning, role playing, processing experiences from real life scenarios, or encouraging various coping strategies before the child is exposed to harmful or traumatic situations. When confronted with an obstacle, the student is somewhat "inoculated" from the full impact due to coping tools that are already in place and primed for effective coping. Reduction of impact is a first line defense effort that is proactive in buffering students from distress and maladjustment.

Reduction of negative chain reactions is somewhat similar to the previous process; however, this mechanism may be better understood as a reactive rather than proactive approach to risk management. Here, the concern is with diminishing future risk

and interacting with situations that perpetuate “at-risk” status (Rutter, 1987). For example, because of a number of traits, a child may be considered “at-risk” for socio-economic, educational, and individual problems. Further, the at-risk student may already be on a negative developmental pathway: the individual predisposition for risk is exacerbated by negative environmental influences (antisocial peers, early onset of sexual activity, few social supports). The risk impact can be reduced by secondary prevention, or follow-up intervention, of the problem. So instead of prevention of risk, negative impact can be reduced using secondary or tertiary prevention efforts, such as special education programming, counseling services, and placement in programs for children in "identified" populations. Reduction of negative chain reactions, as a resiliency process, relies on the interaction of protective and vulnerability factors and works toward positive adaptations when risk thwarts healthy developmental trajectories (Clark, 1991; Rutter, 1987).

The establishment and enhancement of self-esteem and self-efficacy is the third resilience process, as well as an indispensable part of building resilience. The child’s opinions of herself and her capabilities have direct impact on successful coping. Feelings of control over environment, competence in a variety of situations, and other cognitive and affective components play important roles in a child’s ability to withstand stress (Gordon, 1996; Rutter, 1987; Werner & Smith, 1982). Two of the most influential ways to establish and maintain self esteem and efficacy is through secure, caring relationships and successful accomplishment of tasks that are valuable to the individual (Eccles & Barber, 1999; Harter, 2003; Rutter, 1987; Tashman, Weist, Nabors, & Shafer, 1998). The incentives that come with well established self concept are not just outcome indicators of

resilience, but are part of an ongoing, dynamic construction of resiliency experiences.

The fourth and final resilience mechanism is related to opening up new opportunities for success. A new opportunity can come in the form of new settings, a new group of peers with which to interact, or chances to work on issues of vulnerability. Trying new things, meeting new people, and going new places allow students to find other talents, interests, and abilities that help them remain afloat in stressful situations (Rogus & Wildenhaus, 1991). New opportunities also can be conceptualized as turning points in a child's life, where novel circumstances allow a child to see a broader list of options for life goals and to have positive personality growth (Clark, 1991; McMillan & Reed, 1993). Nettles (1991) offered that these critical developmental points expose students to powerful messages and influential people who may help a child forego self destructive activities. These experiences facilitate resilience capabilities that are generalizable to less successful arenas and build confidence in tackling and overcoming challenges in future situations (Coleman, 1988; Meichenbaum & Deffenbacher, 1988).

All of the aforementioned mechanisms are related to and work in concert with each other. Contact with constructive, encouraging people can build self esteem, offer successful experiences in a new context, reduce current risk, and guard a child from having future negative outcomes that are related to chronic risk exposure. Many children are in need of having these protective mechanisms applied in their lives to help with learning coping strategies and engendering successful development.

Resilient children are adaptable and better able to negotiate academic and social domains with than counterparts (Reynolds and Karr-Kidwell, 1996; Scott, 2001). Participation in activities can introduce a long lasting experience of resilience for a child.

School extracurricular activity involvement exposes students to the positive existence of supportive social networks, interaction with non-parent adults, and promotion of self-efficacies and identity (Gilman, Meyers, & Perez, 2004). Couched within the context of Rutter's (1988) protective mechanisms, the present study proposes that children's participation in extracurricular activities builds resilience factors in much the same ways as proposed in resilience theory. Each of these four mechanisms is a function of the other.

Extracurricular Participation as an Agent of Resilience

Children's successful school careers depend, at least in part, on their access to a range of resources. If they do not have access to resources through their parents, they must receive them in some other way or their school success will be jeopardized (Falbo & Lein, 1999). Extracurricular activities offer alternative environments in which children can learn about themselves and their worlds and can discover opportunities for carving their individual versions of success (Eccles, 1999; Gholson, 1985).

Rutter (1986) said that self-esteem and self-efficacy are, in large measure, based on successful accomplishment of activities that are important to the individual. Involvement in those important activities builds senses of investment, commitment, and individual choice (Nettles, 1991; Rutter, 1987; Tashman et al., 1998). Sport and other activities create opportunities for students to achieve and have meaningful roles in their school community. Within the participation study literature, there are differential student outcomes based on the kind of extracurricular activity involvement a student has (McNeal, 1998). The most frequently studied participation studies look at academic achievement in relation to sports and athletic activities. Additionally, the majority of participation studies focus on outcomes for high school students. Little consideration of

primary and middle school participation in relation to future extracurricular involvement is evident in the literature base.

Cooper, Valentine, Nye, and Lindsay (1999) determined that extracurricular participation explained 7% of the variance in standardized achievement scores, 11% of grades, and 5% of grades beyond that explained by pre-existing student variables. Marsh (1991) asserted that though not much variance was captured by study variables, beta weights from multiple regression analysis highlighted positive and negative directions of outcome trends. Although some studies noted small or indirect relationships between extracurricular activities and achievement, they are consistently positive (Brown & Steinberg, 1991; Cooper et al., 1999; Gerber, 1996; Tashman et al., 1998). Furthermore, Camp (1990) reported that the indirect impact of extracurricular participation was more than twice as effective as more traditional, direct academic interventions (e.g. academic skills training) at improving academic performance.

Longitudinal evaluation of adolescent leisure activity involvement and adjustment provides the most compelling evidence for an associated reduction in negative student outcomes (Holland & Andre, 1999; Mahoney & Cairns, 1997). Mahoney and Cairns (1997) showed that boys and girls with multiple adjustment problems who became involved in school extracurricular activities evidenced significantly lower incidences of dropout and antisocial behaviors. In a study of participation's impact on sexual behavior (Miller, Sabo, Farrell, Barnes, & Melnick, 1998), female students who reported membership in performing arts related extracurricular activity were less sexually active and had a lower risk for pregnancy than non-participants. Based on results, athletic participation had an even stronger inhibitory effect on pregnancy rates than that of

performing arts related to females who did not participate in any activity.

Students who participated in extracurricular activities reported lower levels of drug use and delinquent acts, and were more likely to be invested in school and engaged in safe, healthy behaviors than students who did not participate (Belle, 1999; Gerber, 1996; Maxwell & Liu, 1998; Nettles, 1991; Reynolds & Karr-Kidwell, 1996). In a comparison of numerous extracurricular activities, only school, family, and church activities were negatively correlated with drug use prevalence; these participants reported the lowest levels of drug use (Buckhalt, Halpin, Noel, & Meadows, 1992).

Across studies, activity participation was associated with lower delinquent and risky behavior for girls (Bingham & Crockett, 1996; Chewning & Van Koningsveld, 1998, 1996; Maxwell & Liu, 1998; Ramirez-Valles, Zimmerman, & Newcomb, 1998). Boys, however, presented more of a mixed picture. Miller et al. (1998) explored the differing impacts of extracurricular activity categories on adolescent sexual practice. Athletic participation was associated with higher rates (medium level correlation) of sexual activity for boys than those in other activities.

Robinson (1999) found differences in reported levels of aggression based on activity type. In comparison, student athletes had higher overall aggression scores than student workers. Pointed analysis revealed that sports participants are more aggressive during the playing season than out of season and workers exhibited more aggressive behaviors when they were no longer employed. In either case, it seems that engagement in activity provides an outlet for students. For athletes, it provides a safe arena to express and creatively channel aggression. Working students may experience a dampening of aggression that is not available when and if the job ends. Consequently, student

employees may have greater distress when not engaged in constructive activity if aggressive behaviors go unchecked.

Some have asserted that positive self-esteem is a deterrent to antisocial behavior and encourages healthy adult adjustment (Brown, 2000; O'Donnell, 1992; Reynolds & Karr-Kidwell, 1996; Sandstrom & Coie, 1999; Vaughn & Haager, 1994). Participation in school activities is linked to higher self-esteem and enhanced peer status (Gerber, 1996; Griffin et al., 1981; Helm, 1991; Taylor, 1991). Research asserts that adolescents who are involved in structured, extracurricular activities reported having significantly fewer deviant peers (Eccles, 1999; Mahoney & Stattin, 2000). Exposure to positive peer pressure is associated with greater peer approval, higher self esteem, and better outcomes for at risk students (Holland & Andre, 1987; O'Donnell, 1992). Participation also allows children to safely explore opportunities for personal growth, to choose leadership roles, and to avail themselves of pro-social, non-parental adult influences.

In a longitudinal study of resiliency factors, Werner and Smith (1982) concluded that resilient males and females scored significantly higher than those with serious coping problems on a number of dimensions from the California Psychological Inventory (CPI). Successful students had a higher degree of social maturity, emotional responsiveness, and motivational personality factors associated with academic achievement than less resilient students. Resilient students also placed more emphasis on extracurricular activities than their non-resilient counterparts (Gordon, 1995; Werner & Smith, 1982). They had strong motivation characterized by their beliefs about their ability, environmental support, control, and emphasis. These children felt supported by others, in control of their behavior and future, capable to face challenges, and work hard on what's important to

them (Gordon, 1996; McMillan & Reed, 1993). Werner and Smith (1982) found that resilience boys, in particular, had participated more extensively in extracurricular school activities than the girls and boys in their comparison groups.

As mentioned above, participation in extracurricular activities, even those that are more socially rather than academically oriented, showed an apparent increase in academic achievement. Holland and Andre (1987) suggested that although extracurricular activities were not directly academic in nature, they facilitated total development of students. Ford (1995) found that self concept, self-esteem, perfectionism, procrastination, poor peer relations, and high insensitivity are considered important barriers to academic achievement among students. In removing or reducing the barriers, students gain more opportunities to meet and/or exceed academic expectations set by supportive agents.

The process of attachment to the school setting grounds the student in the expectations of the school culture. Being better acquainted with rules and expectations, exposed students are more likely to succeed. The protective nature of extracurricular activity is a resilience process that contributes to innumerable outcomes. The relationships student participants build are also of tremendous importance to being connected and feeling a sense of belonging (Brown & Steinberg, 1991; Gholson, 1985).

Commitment to school theory (Marsh, 1992) posits that academic self-concept, interpersonal connections with significant others, and acculturation to the school environment all contribute to academic achievement of students (Bronfenbrenner, 1976; Clark, 1991; Scott, 2001). In turn, activity participation has an indirect impact on academic efforts and outcomes. Social rewards of participation may motivate students to come to school and to work toward academic goals (Braddock et al., 1991; Brown, 1999;

Spady, 1970). Positive effects of activity participation can be particularly important for students who belong to ethnic minorities, students with disabilities, and students at risk of dropping out of school (Aziz, 1999; Gordon, 1995; Kellermann, 1998; McNeal, 1995).

School extracurricular activities provide an instructional loop of interactions and feedback between the self and other persons and situations; the feedback fuels re-investment of efforts and future interactions that strengthen the student's bond to school. The cyclical and interrelatedness of building social connections is described in ecological systems theory (Bronfenbrenner, 1976). This developmental perspective and risk analysis sets that backdrop for the following discussion of youth needs, motives, and intervention.

Importance of Timing and Degree of Extracurricular Involvement

Level of Activity Engagement

Few studies stated that varied involvement or in-depth (leadership) involvement in activities boosts increases in positive student outcomes (Helm, 1991; Holland & Andre, 1987; Maxwell & Liu, 1998; McNeal, 1995; Reynolds & Karr-Kidwell, 1996). Level of activity involvement was frequently cited as a mediating factor for participation effects (McNeal, 1995; Newton, 1992). However, there was more than one definition of the term in the literature. The more typical operationalizations of activity engagement were either the number of hours spent or the total number of activity involvements (Brown, 2001; Finn & Rock, 1997; Holland & Andre, 1994; McNeal, 1995; Newton, 1992; Steitz & Owen, 1992). Although multiple involvements and well-roundedness is usually encouraged, Holland and Andre (1987) warned that too many activities can be a detriment to child development.

Newton (1992) discovered that the level of activity involvement (amount of hours

spent) had significant relational impact on behavior for students; outcome data was best for moderately involved students (6 to 12 hours a week) as compared to both high and low level participants (Newton, 1992). The amount of time invested in activities was found to be more edifying for participants; activity type did not have as great an impression on student outcomes. Intensity of participation is an overriding element over singular impacts related to activity participation (Adler & Adler, 1994; Holland & Andre, 1999; Newton, 1992).

Tashman et al. (1998) found that males at high levels of participation (i.e. more acts, more time) exhibited fewer delinquent behaviors than males with low participation. Male participation in extracurricular activities had positive relationships with educational attainment, even independently of obvious moderator variables such as SES and academic ability. Interestingly, the relationship between participation and desirable outcomes seems to be stronger for male adolescents from lower SES families and of lower academic ability (Holland & Andre, 1987).

Some researchers believe that the student's level of entrenchment or personal investment in chosen activities was more important than just the amount of time spent or number of activity commitments. Classifications of non-member, member, and leadership roles also described the level of activity involvement (Adler & Adler, 1994; McNeal, 1995, Steitz & Owen, 1992). While it would seem that students holding offices or elite level status (i.e. president, varsity/junior varsity team member) spend more time engaged in their activity, the two ideas are not linked together. None of the studies produced significant correlations of time commitment and leadership status.

Level of involvement was operationalized slightly differently by Adler and Adler

(1994). Instead of non-participant, participant, and leader, they defined participation as being recreational, competitive, or elite. A didactic hierarchy of activities varying in adult influence, level of competitiveness, and depth of participant involvement was given. Littell (1992) offered still more types of activity engagement. Beyond the long term outcomes given for activity participants and the control group, there were also outcomes reported for students who dropped out between 10th and 12th grades and 12th grade activity "joiners" (senior students with no history of participation before senior year).

Theoretically, leaders and elite members received enhanced gains from participation due to the greater time investment and attitudes toward involvement. Students who devote considerable time and effort to participation achieve a more penetrating experience: they make sacrifices, sharpen their abilities, set and meet personal performance goals, and become invested in a deeper and more meaningful way (Adler & Adler, 1994). In addition, Holland and Andre (1999) stated that extracurricular activity student leaders tended to have high self esteem, more traditional gender role identity, and higher levels of participation in social activities than average non participants.

Hanks and Eckland (1987) posit that participation serves two important functions: to reinforce educational goals by exposing students to achievement oriented peers and a network of social relations; and to acquire adequate general knowledge, interpersonal skills, self confidence, and other attitudes that not only engender personal effectiveness. School, as a socializing agent, provides opportunities that directly influence students' ability to be integrated into the school culture and larger society. School activity participation may increase a student's investment in pro-academic attitudes and

behaviors, sense of belonging in the school environment, and valuable connections to peers and adults (Gordon, 1995; Greenberger & Steinberg, 1981; Jenkins, 1996; Marsh, 1992; Shann, 2001).

Simultaneous Participation in Multiple Extracurricular Activities

Multiple activity participation has been noted as antithetical to the benefits of extracurricular involvement. Students participating in three activity categories experienced a negative relationship with self-esteem and grades (Brown, 2001; Steitz & Owen, 1992). In situations where students are involved in many activities, positive impacts decrease and deleterious effects surface. At the highest levels of participation, student achievement scores dropped dramatically (McNeal, 1995; Newton, 1992). Researchers observed that participation in multiple acts provided minimum reduction in drug experimentation and use. In many instances, these students were experimenting and using at or above the rate of their peers in other acts (Cooley et al., 1995). Extracurricular participation may become detrimental if a) the identity with the activity becomes so strong it displaces the broader school identity or b) time investment is so great it leaves little time for academic work and other out of school involvement (Cooley et al., 1995; Cooper et al., 1999). Resources of time, effort, and skill use are stretched over many areas and students frequently become overwhelmed, lose academic ground, and cope with stress in unhealthy ways.

Some studies reported conflicting evidence for students in many extracurricular activities. McNeal (1995) reported that increased levels of participation did not explain a large portion of the performance outcome variance. Wu (1992) found completely opposite results for multi-activity participants; multi-activity students and those with in-

depth participation had higher GPAs and more ambitious educational expectations for themselves as compared to non-participating peers. There is also empirical evidence asserting that students who participated in multiple activities, especially those with concurrent sports involvement, had the highest rates of desirable behaviors and the lowest rates of undesirable ones (i.e. alcohol/drug use, sexual intercourse debut) when compared to sports only participation, activities only participation, and non-participating teens (Harrison & Narayan, 2003; Hayes & Swisher, 1991).

Activity Participation in Middle School

Very little research has been done on the effects of sport participation in early adolescence. Most studies in this area have focused on high school settings and have not looked at middle schools where extracurricular activities are often first introduced. A number of researchers endorse early participation's influence on later extracurricular involvement (Eder & Kinney, 1995; Fejgin, 1994; Gordon, 1995; Mahoney & Cairns, 1997). The attribute that had the greatest effect on the likelihood of high school participation was exposure to that activity in middle school (Cooley, Henriksen, Van Nelson, & Thompson, 1995; Hawkins, Royster, & Braddock, 1992).

Students who participated in athletics and performing arts in middle school had an estimated probability that was 0.3 times higher than that for non-participants. Probability of cheerleading involvement was also significantly higher for students exposed to it in middle school (McNeal, 1998). Unfortunately, activity areas may be somewhat closed structures for students choosing an activity for the first time in high school (McNeal, 1998). So, it may be best for students to expose themselves to a variety of interests early in their school careers in order to gain a sense of which extracurricular activity to choose.

Middle school athletes, cheerleaders, and friends of those groups had high visibility and activity participation that continued with them to high school. These students maintained popularity through involvement in multiple activities in high school as compared to participation in one activity in middle school (Braddock et al., 1991; Eder & Kinney, 1995; Kinney, 1993). Students entering high school as “popular” may easily develop friendships with upper class students due to contact and commonalities, boosting their popularity in a new setting.

For the larger group of students who did not have school wide visibility, many gained a sense of peer acceptance and recognition through specialized activities (e.g. swimming, journalism, performing arts) that may not have been offered at the middle school level (Holloway, 1999; Newton, 1992). Among non-participants, many chose to gain recognition through their appearance and behavior as part of more negatively viewed subcultures in the school (Eder & Kinney, 1995). Diversity of activity choices and less constrained social structure of high school affords some students chances to change their peer status and identity group through participation in certain activities (Kinney, 1993; Mahoney & Cairns, 1997).

Wigfield et al. (1991) noted that boys’ social ability perceptions were more affected by the transition to junior high school than were those of girls. In the literature, social participation was positively correlated with the educational achievement of males after high school, even when IQ and parental SES were controlled (Holland & Andre, 1987; Marsh, 1992). Social support derived from extracurricular activity can provide a point of consistency that undergirds the student's initial adjustment and eventual assimilation into a new school setting. Transitional support, in the form of continued

activity participation, may be that much more important for male students in periods of change and recovery than female students.

Review of Specific Extracurricular Activity Categories

Generally in American high schools, there is a clear hierarchy of activity importance. Exact rankings are school-dependent, yet the pattern is sports at front, followed by performing arts, academic clubs, and vocational clubs, in that order (Mahoney & Cairns, 1997; McNeal, 1995). Engagement in higher status acts exhibited effects of greater magnitude than low status (directly and as a mediator). The rating of activity importance is linearly related to the peer status of that activity's participants. Athletics (cheerleading included) is a high status activity; participation in music and church/youth groups is moderate, and debate and hobby clubs are low status activities; participants' peer status is commensurate with the social status assigned to the activity (Barber et al., 2001).

Sports and Athletics-Related Activities

As an extracurricular activity, sports participation demonstrates a variety of meaningful impacts on student success and connection with academic environs. Braddock et al. (1991) found that athletes are more likely to have higher education aspirations and hold higher social standing among their peers than non-athletes are. According to a study by McNeal (1995), students who participated in athletics were estimated to be 1.7 times less likely to drop out of school than non-participants. Fejgin (1994) concluded that direct interventions through academic-related activities showed as effective as the indirect emphasis exerted by athletic participation on academic achievement. Regardless, athletic participation had a deleterious impact on misbehavior

and discipline problems while enhancing peer status and popularity ratings (Eder & Kinney, 1995; Fejgin, 1994; Hawkins et al., 1992; Spady, 1970).

Contrary to overwhelming number of studies that praise sports' impact on student outcomes, some researchers have found little to no statistically significant relationship between higher academic achievement and sports involvement (Brown, 2001; Hanks & Eckland, 1976; Lisella & Serwatka, 1996; Snyder & Spreitzer, 1992; Wu, 1992). Higher academic aspirations and senses of personal power are frequently reported as benefits of playing sports, yet athletics participation has little relative bearing on actual attainment of educational goals. Hanks and Eckland (1978) interpreted this as sports participation has neither a positive nor negative impact of academic performance. However, non-athletic or 'social' activity participation showed stronger and more direct relationships to academic performance and achievement in both high school and college. Even with the primarily social assets gained by sports engagement, some researchers still noted some negative effect trends for self esteem and locus of control (Hunt, 1996; Shaw, Kleiber, & Caldwell, 1995).

Within the varied kinds of sports involvement, nuances of participation can sway outcome differences. Interscholastic (i.e. school based, competitive) sports participation has the most profound impact on self-concept, locus of control, grades, educational aspirations, and college attendance rates (Braddock et al., 1991; Fejgin, 1994; Hawkins et al., 1992; Snyder & Spreitzer, 1992). Furthermore, Steitz and Owen (1992) found that only varsity and junior varsity athletics had a positive correlation with high self esteem. Students involved in non-competitive school sport or other intramural activities experienced gains in student outcomes, but to a lesser degree than interscholastic

participants (Fejgin, 1994; Steitz & Owen, 1992). Silliker and Quirk (1997) found that interscholastic athletes had significantly higher GPAs in season than out of season. More efficient use of time and motivation to maintain playing eligibility may account for the increase in academic output. Attachment to pro-academic behaviors, such as effort toward class work, preparedness for instruction, and interest in courses, promotes the academic resilience of student athletes (Braddock et al., 1991; Hawkins et al., 1992).

In addition to competitiveness in sport, student outcomes are affected by the particular sport undertaken. Eder and Kinney (1995) used observational data from sports, cheerleading and choir, band, and drama participants to determine varying effects of participation on social status. The type of sport (e.g. football, basketball, wrestling, track), along with school size, variably affected students' ratings of popularity and peer status. In a large school, basketball and wrestling had positive effects on both popularity and peer status. Football enhanced peer status but had no visible effect on popularity; in small schools, basketball involvement affected popularity but not peer status. Peer status refers to subculture identity and visibility within the school culture while popularity is related to likeability and quality of peer interaction (Barber, Eccles, & Stone, 2001; Eder & Kinney, 1995).

In Holland and Andre (1987), different sports and combinations of sports involvement with other activities produced different student outcomes. Males who participated in both athletic and service activities had significantly higher Scholastic Aptitude Test (S.A.T.) scores than the national average of males who participated only in athletics. In contrast, males who participated in athletic activities only had higher education aspirations, but showed lower levels of educational goal fulfillment than

counterparts. Boys from lower SES families who participated in athletics also tended to have higher educational aspirations than non-participating peers from other SES levels (Holland & Andre, 1987; McNeal, 1995).

Despite the positive trend of outcomes for student athletes, a number of less than favorable effects of sports participation are embedded within the literature. Barber et al. (2001) studied the relationship of the student activity and identity choice with developmental outcomes. Involvement in sports/ school spirit activities and high peer status groups (i.e. popular cliques) was associated with positive academic outcomes and having academically oriented peer support. On the other hand, these social activity groups also reported high levels of alcohol use (Hayes & Swisher, 1991), which was an unexpected characteristic of these peer groups.

Sports participants and those in sport-related activities (i.e. drill team, dance team, and cheerleading/pep squad) reported similar levels of tobacco and alcohol use as those who reported low levels of activity participation (Buckhalt et al., 1992; Cooley et al., 1995; Eccles & Barber, 1999; Maxwell & Liu, 1998; McNeal, 1999). On the other hand, engagement in gateway and hard drugs is negatively related to sports participation and considerably less than students in non-sport activities and non-participants (Maxwell & Liu, 1998). Athletic participation was also associated with higher rates of sexual activity for boys and higher levels of aggressive behavior than other types of activity participation (Miller et al., 1998; Robinson, 1999).

Eder and Parker (1987) suggested that the emphasis placed on school sports is often congruent to the amount of character development athletic participation engenders. Due to lower visibility of female athletic events, female athletes do not have the same

school cultural significance or reinforcement of achievement as male athletes.

Subsequently, they reap smaller peer status effects for participating. Pep and spirit group participants enjoyed higher ratings of peer status than females engaging directly in sports activities; this was attributed primarily to their role and level of exposure in the school culture (Eder & Parker, 1987).

Cheerleaders, who are considered female athletic participants, focus on values of neatness, appearance, and portrayal of pleasant personality traits (Eder & Parker, 1987). These "true" female athletes were less concerned with these issues; they reported that appearance concerns interfere with event participation and they were critical of girls who did not modify their appearance to appropriately fit the situation. The proposed mismatch of feminine values with athletic involvement differentiated female sports participants' reported attitudes and priorities. In addition to socialization issues, female students engaged in athletics and sport-related activities had similar levels of tobacco and alcohol use as students who reported no participation in extracurricular activities (Barber et al., 2001; Eccles & Barber, 1999). Despite these negative associations, female sports' participants reported benefits of higher self esteem, reduced pregnancy risk, and lower levels of delinquent behaviors than non-participating females (Miller et al., 1998).

Student Employment and Vocational Education Activities

Next to athletes, student workers are the second most frequently studied activity participants. Research indicates that students who work do not have as many positive results as students in other extracurricular activities. Across studies, employment had negative effects on academic performance and increased tendency to drop out, especially when students worked more than 15 hours (Brown, 2001; Cooper et al., 1999;

Greenberger & Steinberg, 1981; McNeal, 1995). Beyond the 15-hour threshold, the negative relationship to achievement is a predominantly linear function of the number of hours worked (Marsh, 1991). However, working less than 10-15 hours per week was positively related to school performance (McNeal, 1995; Warren, 2002).

Students who participated in vocational education organizations and work-study activities were more likely to use substances than non-participants and students in other activity groups (Buckhalt et al., 1992; Jenkins, 1996; Maxwell & Liu, 1998; Mihalic & Elliott, 1997). Extra income to purchase alcohol, marijuana, and tobacco, along with increased influence by and access to older work colleagues who can facilitate access, led to increases in what is called “money-related deviance” (Greenberger & Steinberg, 1981). Working also was related to some forms of school deviance, such as unexcused absences, tardiness, and incomplete assignments (Brown & Steinberg, 1991; Greenberger & Steinberg, 1981). Singh (1998) found a moderate negative effect of previous achievement on working; students with high achievement in earlier grades are less likely to work longer hours in high school.

Although research suggests that student workers may commit to work at the expense of school (Maxwell & Liu, 1998; Mihalic & Elliott, 1997), the activities' role in the participant's life is an important mediator in distinguishing outcomes. Warren (2002) found that a student's social/psychological orientations toward work and school, more than allocations of time and energy, have more to do with employment's generally negative impact on school achievement. Work oriented adolescents do not do as well in school. For them, the priority of academic goals is lower than for their counterparts. Because work-oriented students are less invested in educational pursuits, they are more

likely to work than school oriented peers. Evidence showed that they spend fewer hours on homework and are more likely to have attendance problems.

Marsh (1991), with a small sample of students, reported that they liked work more than school and/or that work was more important to them than school. Students who worked to buy things, maintain a car, help support their families, and held work-oriented attitudes, experienced statistically significant negative impact on student outcomes. Working was negatively associated with 17 of 22 student outcomes studied, such as attendance, educational aspirations, academic self concept, and pro-social behaviors (Marsh, 1991). More studies illustrate the same detrimental influence on academic achievement, engagement in the school culture, and pro-social behaviors (Greenberger & Steinberg, 1981; Mihalic & Elliott, 1997). Conversely, students who worked to build a good work ethic, to pay for high school activity costs, and to save for college showed substantially positive effects in the same 22 outcome areas (Marsh, 1991).

Kablaoui and Pautler (1991) also found that employment had a negative effect on grades, homework, extracurricular activities, behavior, and academic relationships. At the same time, positive effects of employment have been found with respect to increased personal responsibility and earning power and the development of social skills (Kablaoui & Pautler, 1991; Miller, 1991). Moreover, vocational activity participants and working students reported higher social self concepts than non-workers (Marsh, 1991; Miller, 1991).

The most important benefit of participation in work-related activities that is stressed in the literature is post- high school employability. Long term advantages of student employment and vocational training were lower rates of unemployment, better

jobs after graduation, and more reported satisfaction and advancement within their occupation than non-working students and non-participants (Marsh, 1991; McNeal, 1995). Summer work contributed significantly to social self-concept and being employed during the first two years after high school graduation. In contrast to working during the school year, summer jobs have benefits and no apparent costs to outcome variables (Marsh, 1991).

Miller (1991) found that involvement in vocational education enhanced peer networks, leadership skills, and pro-social behaviors. Furthermore, vocational activity participants and students with jobs reported higher social self concepts than non-workers.

Performing Arts Activities

Performing arts participation plays an important role in the extracurricular activities realm, but it does not get much attention or investigation in the research base. The more widely employed approaches for looking at performing arts participation use the non-specific amalgam of fine art activities (i.e. choir, drama) or a singular activity that is subsumed within the “general” extracurricular activity research (Holland & Andre, 1994; McNeal, 1995; Royse, 1998). Whether art or music are examined individually or in tandem with others, performing arts involvement generates positive academic and social outcomes for student participants (Brown, 1999; Eccles, 1999; Hunt, 1996; Littell, 1992; McNeal, 1995).

More specifically, Fejgin (1994) discovered music/drama participation effects were similar to those of sports participation for discipline problems and grades. Arts involvement was also positively linked to measures of academic performance, such as standardized tests and teacher reports (McEwen, 1995) and self concept (Fejgin, 1994).

Students in performing arts activities are 1.2 times less likely to dropout of school early than students with a low level of activity engagement or no participation at all (McNeal, 1995; McNeal, 1998). Nonetheless, in comparison to other extracurricular activity types, performing arts participation had no impact on early dropout rates (Mahoney & Cairns, 1997).

Participation effects for choir, band, drama, and dance were investigated to show direct, individual effects of particular performing arts opportunities (Barber et al., 2001; Fejgin, 1994; Hunt, 1996; Mahoney & Cairns, 1997). Drug and alcohol use in students participating in Band, Choir, Speech, and Drama manifested notable differences from those of athletes. Performing arts students were less likely to use alcohol than activity counterparts, yet marijuana use was more prevalent among performing arts participants, particularly those in Drama (Cooley et al., 1995; Maxwell & Liu, 1998). Drama/Speech participants, as compared to non-participants, also exhibited the second highest rates for tobacco, marijuana, and illicit drug use. Nevertheless, Maxwell and Liu (1998) suggest that the usual high academic resilience of performing arts participants balances out possible harmful sequelae that result from risk behaviors. Less resilient students in these activities may be more at risk for undesirable outcomes.

Performing arts activity participation was associated with lower levels of sexual activity for males, with an even stronger inhibitory effect than for female performing arts participants. Miller et al. (1998) stated that traditional masculine expectations (i.e. sexual prowess, competitiveness) may be an ill fit for more socially oriented, cooperative activities such as performing arts. The dissonance of these expectations with an atypical setting may characteristically affect behaviors and choices of male activity participants.

Incidentally, academic activity participation left little inhibitory impact on sexual activity of students.

“Other” School Activities and General Extracurricular Participation

Other activities studied within the participation literature include newspaper/yearbook, photography/journalism, academic clubs, student government, and foreign language (Holland & Andre, 1987; Mahoney & Cairns, 1997; Maxwell & Liu, 1998). Some studies did not explore individual activities when searching for outcome relationships; researchers simply measured “extracurricular or total extracurricular activity involvement” (Camp, 1990; Finn & Rock, 1997; Gaspard & Burnett, 1996; Jenkins, 1996). In addition to a general activity heading, other researchers include comparisons with other specific activities for a multi-faceted look at participation effects (Holland & Andre, 1994).

Although there is not much coverage or statistical analysis of specific impacts of these activities, all of them reported positive correlations with academic achievement. Participants perform better on cognitive and verbal tests, have higher self-esteem, and have a stronger commitment to school than children who do not take part in these activities (Helm, 1991; Wu, 1992). Drug use is negatively linked to activity group members in the aforementioned areas. However, students who participated in school government were more likely to use alcohol than students participating in performing arts, multiple activity participants, and non-participants (Cooley et al., 1995).

Hobby clubs, as a general participation area, were also highlighted in some studies. Frequently, hobbies were referred to as alternate pastimes, not extracurricular activity options (Belle, 1999; Shann, 2001). Still, there was nominal representation of

hobby, publications, and “special interest” club participation in the literature (Gerber, 1996; Hunt, 1996; Littell, 1992; Miller, 1991).

Pro-Social Activities

Pro-social activities refer to involvement in acts that provide youth with opportunities to develop social and practical skills, a sense of competence, of worth, and of environmental mastery (Holland & Andre, 1987; Miller, 1991; Ramirez-Valles et al., 1998). For this study, involvement includes community oriented, volunteer, youth group, and church activities. Boy and Girl Scouting, Big Brothers/Big Sisters, and Urban League affiliations also are cited as pro-social in the literature (Hostetler & Fisher, 1997; Ramirez-Valles et al., 1998; Royse, 1998). Student involvement in church, such as choir, youth group, and attending services, is the most frequently referenced as pro-social activity participation (Barber, Eccles, & Stone, 2001; Buckhalt et al., 1992; Hunt, 1996; Littell, 1992; Ramirez-Valles et al., 1998).

Hodgkinson and Weitzman (1990) conducted a study on the volunteering trends of teenagers, ages 14 to 17. Teen volunteers reported that most of them learned about their volunteer activities through participation in an organization, most frequently religion-affiliated organizations. Typical volunteer efforts that students listed were helping the elderly, baby-sitting, community clean-ups, and working with service organizations (Shann, 2001). In addition, the majority of students gave five or more hours a week to community initiatives. Ten percent of respondents stated that their schools had community service requirements for graduation; this prompted the start of volunteering, but intrinsic rewards fueled continued involvement (Hodgkinson & Weitzman, 1990). Of note, volunteering behavior had a higher prevalence with white, female, employed, and

higher SES students.

Participating in youth focused activities was positively correlated with self-concept, educational aspirations, and parental involvement (Eccles & Barber, 1999; Eccles & Midgley, 1990; Marsh, 1992; Miller, 1991; Royse, 1998). Studies also have found that youth involvement in pro-social acts is negatively correlated with substance use, sexual activity, and other risk behaviors (Allen, Philliber, Herrling, & Kuperminc, 1997; Chewing & Van Koningsveld, 1998; Marsh, 1992; Ramirez-Valles et al., 1998). Students who participated in pro-social activities are least likely to use illicit drugs as compared to students who are in other activities (Maxwell & Liu, 1998; Young et al., 1997). In Barber et al. (2001) and Eccles and Barber (1999), students' participation in pro-social activities not only had the lowest levels of drug use, but they also had higher school attendance and academic achievement than peers in other activities. Bingham and Crockett (1996) and Chewing and Van Koningsveld (1998) found that early debut of sexual activity (age of initiation below average peer age) lead to poorer psychosocial development up to four years after initial assessment. Protective behaviors, such as contraceptive use or abstinence, were reported as more prevalent in the late sexual onset group (above average peer age of initiation and/or self report of no sexual activity by Grade 12). Students who attended church frequently reported an older mean age at first sexual encounter than students who did not regularly attend church.

For students involved in community-oriented activities, participation seemed to be more importantly linked to academic achievement than school involvement (Young et al., 1997). Miller (1991) reported that 4-H and other youth club participation was positively related to development of academic skills and educational and/or work related

aspirations. Involvement with these student groups prepared participants to be functional and successful in both academic and vocational settings. Students involved in community service activities make better grades, show leadership abilities, have stronger motivation to succeed, have higher self esteem, and have higher levels of educational attainment (Belle, 1999; Buckhalt et al., 1992; Duncan, 2000; Eccles & Midgley, 1990; Holland & Andre, 1987).

Doing good things with one's time takes time away from opportunities to get involved in risk situations and allow for establishment of positive support networks and constructive endeavors. Additional effects could be attributed to adult supervision and positive values and norms provided by school, church, and community organizations (Buckhalt et al., 1992). Unfortunately, volunteering interests drop off significantly as students advance to higher grade levels when benefits would be most needed (Hodgkinson & Weitzman, 1990; Shann, 2001).

In addition to more tangible gains of participation like better grades, pro-social activity participants gain unique character development opportunities that seem to be unparalleled. Community involvement and volunteering helped students to be more sensitive to social concerns (Hodgkinson & Weitzman, 1990; Marsh, 1992). While gaining opportunities for responsibility, helpfulness, and leadership, students are empowered to build self-esteem, character and resilience (Eccles, 1999; Miller, 1991). Characteristics of nontraditional educational programs such as Scouting, 4-H, and others include examples of helping less able others, cooperative problem solving, small group instruction, positive reinforcement, and value acquisition (Kellermann, 1998).

Kellermann (1998) stated that forty percent of the individuals who participated in

Scouting programs for at least five years went on to become college grads as compared to 16% of non-Scouts. Testing the resiliency potential of Scouting participation, his study monitored academic performance for Scouts with learning disabilities (LD) as compared to other students with LD as well as regular education students who did not participate. Results showed that Scouts with LD exceeded performance level of students with LD who were not involved in any nontraditional educational program or extracurricular activity (Kellermann, 1998).

School-Affiliated vs. Community-Based Extracurricular Involvement

Researchers have observed outcome differences for students who participate in school sponsored extracurricular activities as compared to non-school, community-based activities. In his review of research on after-school programs, Holloway (1999) found that community-based programs do not have the same effect as school based activities. Young et al. (1997) concurred that participation in school related activities was more strongly associated with achievement than non-school affiliated and community participation. Lisella and Serwatka (1996) studied minority and low SES participation rates in both in school and out of school extracurricular activities. For community based activities, Boy and Girl Scouts, Boys & Girls' Clubs, YMCA, and community sponsored sports had the highest participation rates. They also found that there was no relationship between school sport participation and higher academic achievement (Lisella & Serwatka, 1996).

Hanks and Eckland (1978) offered a premier insight into the power differential of school extracurricular activities and out of school activities. School participation facilitates social relations with school personnel and school-oriented peers. This process may take place in the community activities arena; however, school activity involvement

makes direct inroads to engagement in the school culture. The shift in setting greatly diminishes community activity impact (Brown, 2001; Holland & Andre, 1994). More recent research underlines the immediate benefits of getting involved in activities that are offered in school (Gerber, 1996; Helm, 1991; Newton, 1992).

Newton (1992) noted qualitative differences in community participants. Students who were not in the upper percentage of athletic and academic talent ratings had to go outside of school to become involved. Minority students and males reported more participation in both school and community activities. Some students, regardless of ability, find school related acts less attractive than out of school activities (Fejgin, 1994; Gerber, 1996). However, Shann (2001) and other researchers argued that peer recognition and self-esteem boosts can be gained in out-of-school activities (Lisella & Serwatka, 1996; Nettles, 1991; Youniss, McLellan, & Mazer, 2001). Furthermore, Nettles (1991) argued that self-esteem brought to school factors is the same and the student's social supports are considerably broadened by community activity participation. The amount of evidence that is contrary to this finding suggests that the setting shift from community to school may diminish impacts of participation.

Statement of the Problem

Holland and Andre (1987) conducted the last major literature review of extracurricular participation literature. Newer studies have included a brief review of the relevant literature, but only as it relates to the topic under study (Holland & Andre, 1994; Silliker & Quirk, 1997). For the past 15 or more years, many studies focus on one activity area; sports and employment are the two most prevalent activity types. An updated summary of the participation literature that encompasses more than one activity type's

outcomes is needed. Furthermore, there is no quantitative, meta-analytic summary of various participation study outcomes to date.

Extracurricular activities' relationship to academic and educational ideals is often researched; however, theory is beginning to tie some social/personality traits to academic achievement. Participants are experiencing impacts in more psychosocially oriented aspects of development. Examples of non-academic gains (i.e. peer acceptance, self esteem, conflict resolution skills) of participation are beginning to appear more within the literature. However, these effects have not been assembled for comparative study.

Purpose of the Present Study

Inspired by the work by Holland and Andre (1987), this study seeks to refresh their digest with more recent research findings and shifts in theory and practical, real world emphases. After compiling as much of the literature that could be retrieved, this writer prepared a literature review that summarized findings for several activity types; studies and report findings from 1990-2001 were read, annotated, and coded for data collection. A comprehensive literature review that crosses activity types was conducted. In addition to the literature review, valid studies will be selected for statistical analysis in order to produce a comprehensive quantitative summary to accompany literature trends.

A number of studies that compare activity types have been done, but the results have not been synthesized in one collection of results. The present study combines summary information for a number of activity areas in addition to the sports and work literature. This present study conducts a set of meta-analyses that give summary effects for 5-6 identified extracurricular activity groups. An extensive literature review, which also generated the sample of studies eligible for statistical analysis, presents theoretical

and historical premises that guided the current inquiry.

Researcher Expectations

I expect that sports activity participants will have the largest effect sizes across all outcome variable categories. The heavy emphasis on sports in the schools and American culture fuels the status and rewards of participation. Athletes', cheerleaders', and other sports related participants' academic achievement will be higher than those of other student activities, yet may be one of the smaller effects as compared to other sports' outcome areas.

Students who work and participate in vocational activities/organizations will have the smallest impact on positive outcome clusters (academics, engagement, and identify factors). I presume that working students will have the highest risk behavior engagement and the lowest academic achievement benefit than any other activity categories.

I expect community based activity participation will have the same impact on student outcomes as school based activity participation. I propose that any kind of participation is helpful, regardless of setting. There are few studies that address pro-social or community-based activity participation. As a result, research was more focused on exploratory inquiry rather than experimental investigation. Little statistical data were available to contribute to interpretation of results and overall activity effect sizes. The current study offers one of the first collections and analyses of pro-social organization and out of school extracurricular activity participation information.

CHAPTER III

METHODOLOGY

This chapter includes an overview of the methods used in this study. First the population used in this study is described. Next, the information sources and instruments used in this study are discussed. The methods by which the data were collected will then be described. Finally, the data analysis is discussed.

Introduction to Meta-Analysis

One approach to organizing and interpreting the participation research literature is the method of meta-analysis. Meta analysis is a technique that allows for the statistical integration of empirical research reports concerning a particular phenomenon (Glass, 1977). Meta-analysis is the most widely used method for synthesizing statistical results for a group of studies on the same research problem (Borg, Borg, & Gall, 1996). It produces summary information that tells how effective a treatment may be or how strongly one variable correlates to another across a number of studies. Effect sizes, the primary outcome of a meta-analysis, illuminate trends in the literature, determine salient features that affect the studies' results, and advise relevant research and program initiatives (Glass, 1977; McNamara, 1997; McNamara, Morales, Kim, & McNamara, 1998). Typically, meta-analyses include both quantitative and qualitative information about a research topic. Integrated summaries of outcomes based on a collective body of research rather than singular studies information are better suited for making judgments of treatment impact and inferring meaning (McNamara, 1997; Yu, 2000).

While the literature review is a qualitative product of meta-analysis, effect sizes are the quantitative products of a research synthesis. Borg, Borg, et al. (1996) defined

effect size as the statistic that tells about the average performance of one group relative to another, after introducing an intervention. There are a number of effect size statistics that can be used to express treatment effectiveness; prominent examples are Pearson's r , Glass' delta, Hedges' g , and Cohen's d (Cohen, Cohen, West, & Aiken, 2003; Rosenthal, 1994). For example, the estimate used for the present study is Cohen's d , which is a standardized effect size estimate. Cohen's d compares differences in the treatment group means without the influence of sample size. It is a version of the t statistic that is independent of sample size and is also a deviation score, like z (Hinkle et al., 1998). Sample size distorts the t statistic's ability to gauge magnitude of treatment effect (Hunter & Schmidt, 1990; Snyder & Lawson, 1993).

With a standardized estimate, effects from each study are translated into a common metric. Standardized effect sizes have the same meaning across studies, even though primary studies use different outcome measures and different score distributions (Borg et al., 1996). Then, study outcomes can be compared across different studies appropriately and accurately (Hunter & Schmidt, 1990; McNamara, 1997).

Cohen et al. (2003) gives a common frame of reference in the interpretation of the magnitude of d : 0.2 denotes a small effect, 0.5 denotes a medium effect, 0.8 denotes a large effect. Again, the magnitude of the effect and the implications made are dependent upon the kind of phenomenon under study.

Another informative part of a comprehensive meta-analysis is the moderator variable analysis; an inquiry into variables that systematically, instead of randomly, influence effect size (McNamara et al., 1998). Although a true, comprehensive meta-analysis contains a moderator variable analysis, it is not a necessary feature of meta-

analytic reporting (Hedges & Olkin, 1985; Hunter & Schmidt, 1990; McNamara et al., 1998).

Location and Selection of Studies for Analysis

Analyzed studies were initially gathered primarily from electronic databases for educational, psychological, and social science research articles. The electronic search was used to maximize the possible number of studies for inclusion. The pool of usable articles was comprised of information on activities that have long term or long term, recurring involvement at school or in the community. Cross sectional or short term intervention studies were immediately eliminated.

Keywords used in identifying articles were extracurricular activities, resilience, extracurricular programs, academic achievement, school club membership, athletic participation, and African American students. A number of combinations of the keywords aided the search for primary sources within ERIC, PsycINFO, and Social Services Abstracts databases. In addition, results from other databases such as Sociological Abstracts and WorldCat were included.

Both titles and abstracts were reviewed before a study was manually or electronically obtained. References from the aforementioned primary sources also were reviewed; relevant studies were then obtained and integrated for a more dynamic literature review and statistical data set (Borg et al., 1996). All reports of research from 1990 to 2001 were eligible for inclusion. All search procedures for this investigation were conducted at the Sterling C. Evans Library at Texas A&M University, the Perry-Castaneda Library at University of Texas at Austin, and other libraries through interlibrary loan services. Various books, journal articles, conference papers, and federal

research reports were obtained and used for the literature review.

Procedures

Obtainable copies of each document included in the original search group were acquired and read entirely. The following criteria were used to narrow the pool of utilizable studies:

- a) Studies selected for final inclusion were limited to school-age children (elementary through high school).
- b) Studies had to offer quantitative data about participation and student outcomes in order to be used as units of meta-analysis. All those with correlation values or enough statistical information to calculate them were included for final analysis.
- c) Literature that focuses on finite-time programs such as tutoring/study skills, mentoring, and various prevention programs (drug education, teenage pregnancy, etc.) were excluded.
- d) Activities that had a purely academic focus, (i.e. technical writing, Spanish Club) were not included in the author's definition of extracurricular activity and therefore not eligible for analysis.
- e) All selected studies were written in English.

Of the 164 studies identified, 43 met the above criteria and were obtained for analysis. Two of the studies did not contain sufficient data for computation of effect sizes. Even after contacting the authors of the articles, no new information was obtained. Of the remaining 41 studies collected, individual effect sizes of each experiment's interventions were calculated. In meta-analysis, the dependent variables are constructions

of the author of the synthesis. Different measures and definitions of study variables were meshed together into summary headings.

Activity types and dependent variables were reviewed twice by the author and resorted according to more appropriate classifications. For example, the original classification of extracurricular activities yielded twelve categories; at second perusal, the categories were condensed into six related-activity groupings. School involvement activities and pro-social behavior outcomes were two original synthesis categories that were distilled into more encompassing category types. School involvement was placed in the pro-social activities and/or other activities, depending on the primary studies' designation. Pro-social behaviors (i.e. leadership, school connection) were subsumed by the Engagement Behavior outcome cluster.

One important outcome indicator, educational or academic aspirations, was distinguished during the iterative process of defining data elements more accurately. When composing the academic achievement cluster, educational aspirations was considered an intuitive factor to include. However, upon closer review of how aspirations were defined in the literature, educational aspirations appeared to be more affiliated with attitudes toward school, social ties to the school environment, and academic motivation. Hence, academic-oriented aspirations were reclassified as more of an engagement behavior than an academic achievement indicator.

Analyses

For each analysis, the dependent variables was the academic achievement and non-academic (social, self-concept) trait measures that were possibly influenced by extracurricular participation. The concept of academic achievement is an amalgam of

academically related topics within the body of literature. Examples of individual academic outcomes from the literature are:

- 1) grade point average (GPA)
- 2) educational goal attainment
- 3) standardized test scores and
- 4) student dropout rates
- 5) engagement behaviors (i.e. attendance, time spent in activities).

Non-academic outcomes, that may be social or internal in nature, are highlighted in the sample studies as follows:

- 1) different kinds of self-concept (academic, social)
- 2) locus of control
- 3) risk behaviors (drug use, sexual activity)
- 4) peer group characteristics and peer status.

Research Questions

Research Question #1: Do effect sizes differ based on activity type?

Research Question #2: What social variables are significantly related to participation in extracurricular activities?

Research Question #3: What is the relationship between academic achievement and extracurricular activity across studies?

Research Question #4: What is the relationship between academic achievement, social competence, and extracurricular activity over time in students' lives?

Research Question #5: Do activity participation effect sizes differ at all for non-majority culture males, particularly African American boys, in the literature? If so, what are some of the characteristics of the differences?

Description of Meta-Analytic Process

Many meta-analyses also include a comprehensive literature review that is compiled through many steps and different approaches. Bangert-Drowns and Rudner (1991) outlined basics to the process. Usually, the first step is comprised of clarifying the research question, listing independent and dependent variables, and choosing which studies will be included. Next, data are collected from studies in two ways. Study features are coded according to the objectives of the review as well as validity checks that encourage more appropriate generalizations of population traits. Then, each study is coded for effect comparison and compiled into summary effect size estimates. The last step of analysis is ascertaining homogeneity of effect size. This acts as a null hypothesis statistical significance test for meta-analysis (Bangert-Drown & Rudner, 1991; Rosenthal, 1994).

According to Glass (1976), well-designed meta-analyses look at both statistically significant and non-significant findings. Non-statistically significant and methodologically flawed studies may have practically meaningful outcomes are justified in their inclusion in meta-analyses. Therefore, dissertations, conference presentation papers, and experiments with numerous threats to internal and external validity are appropriate and included in the current study.

The aim of Glassian meta-analysis is to give a general picture of the literature (Hunter & Schmidt, 1990). Therefore, non-significant findings and methodologically or otherwise flawed studies are included in the sample to get a broad picture of literature trends. Due to possible result contamination and bias concerns inherent in doing a “classic” Glassian analysis, newer forms of meta-analyses improve upon the different

flaws from the original process (Hunter & Schmidt 1990). The present study will be a modified Glassian meta-analysis; its structure is a combination of Classic Glassian method and Study Effects meta-analysis. Specific traits of Study Effects meta-analysis were employed as a validity check for estimates. Broad inclusion of studies and more stringent use of study information are meant to conserve inflation of error in the present study's condensed effect estimates.

The purpose of the Study Effects method is to look at specific treatment /outcome relationships (Hunter & Schmidt, 1990). In Study Effects meta-analysis, each study contributes one effect size to the analysis. An effect size is computed for each variable comparison in every study, just like with the original Glassian approach. However, those variables are condensed to form one averaged cluster effect for that study. This preserves the integrity of analysis and gives equal weight to all included studies (Bangert-Drowns & Rudner, 1991; Hunter & Schmidt, 1990; Rosenthal, 1994).

One of the last steps of meta-analysis is to test the homogeneity of effect sizes from the overall sample. After obtaining the critical value for F from ANOVA of comparison group means, the next step ascertains whether compared means are from different because they are derived from different hypothetical populations. This is accomplished in homogeneity testing and solving for a Q statistic value. The Q sample distribution is analogous to a t distribution and is used to determine homogeneity. Hinkle, Wiersa, and Jurs (1998) outlined the purpose of: -“ Q statistic distributions were developed to determine the *minimum difference* between the largest and smallest means in a set of K sample means that is necessary to reject the hypothesis that the corresponding population means are equal” (p. 389).

When a standardized effect estimator is used (Cohen's d), the contaminating variability from primary studies' samples is accounted for. Removing the impact of variance and sample size with Cohen's d checks the statistical errors inherent in doing multiple comparisons of meta-analysis. Nonetheless, in order to monitor shortcomings of the homogeneity assumption, Type I error corrections are employed to save the integrity of the research findings (Shadish & Haddock, 1994). Because of unequal sample sizes from comparison studies, a post hoc correction called the Tukey/Kramer (TK) method (Hinkle et al., 1998) is typically implemented. However, for the purposes of the current study, a much simpler determination of sampling error and comparison error were conducted and are presented later in this chapter.

In the present study, variables from all studies were clustered into data elements (Friedrich, 1997) (i.e. Engagement cluster- attendance, educational aspirations outcome variables). Each study contributes one effect to each outcome cluster. From the small pool of participation studies identified (41), several activity groups of participants' outcome data were formed. Essentially, 6 extracurricular activity meta-analyses are presented in this study. Analysis of articles with all collected outcome variables provided a summary, overall effect size for each variable comparison. There are 4 clusters of dependent variables and 6 levels (subsets) of the independent variable, activity choice. Computed effect sizes (usually Cohen's d or Pearson's r) were corrected for sampling error also.

Calculation of Effect Sizes

Hunter and Schmidt (1990) discussed six different categories of study designs that can be used in a meta-analytic synthesis of literature. The present study encompasses

three: (quasi-) experimental, correlational, and multiple regression analyses.

Consequently, there were three sets of calculations and theory rationales used to compute effect sizes. Additionally, the necessary formulae for calculating summary effect statistics and homogeneity analyses will follow.

Effect Sizes from Experimental Studies

Most often in experimental studies, groups are compared through analysis of variance (ANOVA) (McNamara, 1997; McNamara et al., 1997). Every treatment effect in a study's ANOVA is derived from the comparison of intervention group and control group means; the mean difference is then divided by the within group standard deviation, thereby producing an effect size. Instead of using the within group variance, the pooled group standard deviation is used for calculating effect sizes. Pooled variance has less sampling error than the control group standard deviation (Hunter & Schmidt, 1990; Zakzanis, 2001). Because Cohen's d is calibrated in pooled standard deviation (SD) units, the assumption that the sample has 'homogeneity of variance' is unnecessary and redundant. The scatter in effect values is subsumed by taking all standard deviations of comparison groups into account (Zakzanis, 2001). The formula for Cohen's d for experimental studies is as follows (Glass, 1977):

$$d = \text{Mean}_E - \text{Mean}_C / \text{SD}_{\text{pooled}} \quad (1)$$

For example:

$$\text{Mean}_E = 4.2; \text{Mean}_C = 4.0; \text{SD}_{\text{pooled}} = 0.9$$

$$d = (4.2 - 4.0) / 0.9$$

$$d = (0.2) / 0.9$$

$$d = .222 = .22$$

For comparisons of unequal sample sizes, like in the present study, one can obtain the pooled standard deviation (SD_{pooled}) with which to calculate d values. The following equation is shown in Zakzanis (2001):

$$(SD)_{\text{pooled}} = \frac{[(N_1 - 1)SD_1^2 + (N_i - 1)SD_i^2 + (N_k - 1)SD_k^2]}{N_1 + N_i + N_k - (\text{\#of pooled studies})}; \quad (2)$$

where k = total number of studies in the sample; N_1 is the sample size of the first contributing study; N_i represents all other study samples between the first and last primary studies; N_k is the sample size for the last study in the set.

Some experimental studies gave t test and F_{crit} values that were extrapolated into Cohen's d before calculating the effect size. Rosenthal (1994) and Wolf (1986) stated that when sample sizes are equal, effect size can be computed like this:

$$t \rightarrow d = 2t / (n-1)^{1/2} \quad (3)$$

$$\begin{aligned} t = -4.502, n = 87 & \quad d = 2t / (n-1)^{1/2} \\ & = 2(-4.502) / (87-1)^{1/2} \\ & = -9.004 / (86)^{1/2} \\ & = -9.004 / 9.274 \\ & d = -0.971 = -0.97 \text{ (rounded to two decimal places).} \end{aligned}$$

Wolf (1986) and Zakzanis (2001) offered this formula for transfiguring F values to Cohen's d :

$$F \rightarrow t = (F)^{1/2} \quad (4)$$

For example: $F = 6.03$, $n = 241$

$$\begin{aligned} t & = (6.03)^{1/2} = 2.456, \\ \text{then } d & = t[(1/n)]^{1/2} \end{aligned} \quad (5)$$

$$d = 2.456 \times [(1/241)]^{1/2}$$

$$d = 2.456 \times [(.004)]^{1/2}$$

$$d = 2.456 \times [.064]$$

$$d = .158 = .16$$

Effect Sizes from Correlational Studies

There are a number of methods to get effect size, in this case Cohen's d , depending on design characteristics of the study (Borg et al., 1996; Glass, 1977; McNamara, 1997). Pearson's correlation coefficient, r , is frequently used as an effect estimate in correlational studies. In order to change the correlation coefficient into Cohen's d , Glass (1977) offered the following formula for equal comparison groups:

$$d = [(N-2)/N]^{1/2} \times 2r/(1-r^2)^{1/2} \quad (6)$$

For instance:

$$\begin{aligned} r = .319, n = 101 \quad d &= [(101-2)/101]^{1/2} \times 2(.319)/(1 - (.319)^2)^{1/2} \\ &= [(99)/101]^{1/2} \times 2(.319)/(1 - (.102))^{1/2} \\ &= [(99)/101]^{1/2} \times 2(.319)/(.898)^{1/2} \\ &= [(99)/101]^{1/2} \times 2(.319)/.948 \\ &= [.980]^{1/2} \times 2(.319)/.948 \\ &= .990 \times 2(.319)/.948 \\ &= .990 \times (.638)/.948 \\ &= .990 \times .673 \\ d &= .666 = .66 \text{ (rounded to two decimal places).} \end{aligned}$$

For studies with small samples ($n < 10$), d may be positively biased as a result of within-study sample size differences. Hedges and Olkin (1985) suggests a correction of d

called d' :

$$d' = \{1 - [3/(4N-9)]\} d; \quad (7)$$

where N is total number of subjects for the study.

For example:

$$\begin{aligned} N=9; d= .87 \quad d' &= \{1 - [3/(4(9)-9)]\} d \\ d' &= \{1 - [3/(36-9)]\} d \\ d' &= \{1 - [3/(25)]\} d \\ d' &= \{1 - [.12]\} d \\ d' &= \{.88\} d \\ d' &= \{.88\} \times .87 \\ d' &= .766 = .76. \end{aligned}$$

The corrected d , d' , was 14% smaller than the originally calculated effect and a more accurate estimate of the effect considering the small number of primary studies analyzed. In the present study, this majority of the summary effect size estimates required this correction. Some of the meta-analytic samples had more than 10 primary studies for analysis and did not require an adjustment of the effect size.

Effect Sizes from Multiple Regression Studies

In addition to a correlation coefficient, possibly Pearson's r , a beta weight of the correlation is also reported in regression studies. Beta weights note the direction and relative magnitude of a variable's impact in concert with influences from other predictors. Regression analyses may report r^2 (also reported as multiple R^2) values called multiple regression coefficients. An r^2 value subsumes the first order correlation coefficient and the beta weight as the statistic to use in calculating effect size.

Calculations of effect size for regression studies involve slightly more complex formulae and interpretations of results. In most cases, there are 2 models being compared (i.e. activity participant outcomes vs. non-participant outcomes):

$$d = \{[(N-2) \times r^2] / (1-r^2)\}^{1/2} \times \{2 \times [1 / (N/2)]\}^{1/2} \quad (8)$$

where r^2 is the multi-regression coefficient (Glass, 1977).

For example: $n=14,249$, $r^2 = .508$

$$\begin{aligned} d &= \{[(14,249-2) \times r^2] / (1-r^2)\}^{1/2} \times \{2 \times [1 / (14,249/2)]\}^{1/2} \\ &= \{[(14,427) \times r^2] / (1-r^2)\}^{1/2} \times \{2 \times [1 / (7134.5)]\}^{1/2} \\ &= \{[(14,427) \times r^2] / (1-r^2)\}^{1/2} \times \{2 \times [1 / (7134.5)]\}^{1/2} \\ &= \{[(14,427) \times (-.508)] / (1 - (-.508))\}^{1/2} \times \{2 \times [1 / (7134.5)]\}^{1/2} \\ &= \{[(14,427) \times (-.508)] / (1.508)\}^{1/2} \times \{2 \times [1.402 \times 10^{-4}]\}^{1/2} \\ &= \{-7328.916\} / (1.508)^{1/2} \times \{2.803 \times 10^{-4}\}^{1/2} \\ &= \{-4860.024\}^{1/2} \times \{2.803 \times 10^{-4}\}^{1/2} \\ &= -69.714 \times .017 \\ d &= -1.185 = -1.19. \end{aligned}$$

The negative beta weight (-.508) suggests that the variable has a negative impact on the variable at hand. According to the calculations above, the treatment effect with the R^2 value of -.508 reduces the effect by 1.19 standard deviation units.

Sometimes, both a Pearson's r correlation coefficient, which in this case is the first order correlation, and a beta weight, which gives the relative impact of the variable being studied, are needed to get R^2 . Effect size is calculated in this way:

First order correlation (Pearson's r) = .369; beta weight (b) = .103;

$$\text{Multiple } R^2 = r \times b = .038. \quad (9)$$

This figure can then be plugged into the original multiple regression effect size formula (Equation #8).

For studies that compared more than two models of treatment (i.e. Sport, Work, No Participation groups) concurrently, as in hierarchical multi-regression models, effect size is calculated in the following manner:

$$d = [(N - [\text{\#of models}] \times r^2 / 1 - r^2)]^{1/2} \times [(1 / (N / \text{\#of models}) \times (\text{\#of models}))^{1/2}] \quad (10)$$

For instance:

$$N=4000; 3 \text{ models, } r^2 = .085$$

$$d = \{[(4000 - 3) \times .085] / (1 - (.085))\}^{1/2} \times \{[(1 / (4000 / 3)) \times (3)]\}^{1/2}$$

$$d = \{[(3997) \times .085] / .915\}^{1/2} \times \{[(1 / (1333.333)) \times (3)]\}^{1/2}$$

$$d = \{[339.745] / .915\}^{1/2} \times \{[7.5 \times 10^4 \times (3)]\}^{1/2}$$

$$d = \{371.306\}^{1/2} \times \{2.25 \times 10^3\}^{1/2}$$

$$d = 19.269 \times .047$$

$$d = .906 = .91$$

Statistical Checks and Corrections

Each activity category had a basic test of homogeneity to check if that activity effects estimate was possible considering the population of studies from the specified activity. However, homogeneity testing for the current study was less formal due to the small number of studies (37). Friedrich (1997) endorsed confidence intervals as a general test of significance for small meta-analytic studies. In the present discussion, 95% confidence intervals helped with determinations of homogeneity of effect size. With a confidence interval, one can say there is a 95% probability that the effect size in question

falls within the range of ± 2 standard deviations of effect estimate. Therefore, if a Cohen's d value for a study falls within the expected range of effect sizes, its sample estimate is more than likely part of the defined population of effect size estimate (Hinkle et al., 1998; Hunter & Schmidt, 1990). Before confidence intervals can be computed, the standard error of the mean has to be found.

The standard error of the mean is a measure in standard deviation terms of how close the sample mean is likely to be to the population mean. The standard deviation of sample means comes from the estimated variance of possible means in the population. This variance is known as sampling error.

Usually, the larger a sample gets, the sampling error decreases, as the sample becomes more like the population. There is less variability of possible values and greater likelihood of the variance approximating the real error value for the population. Regarding the present study, sub-grouping of feeder studies made producing the total N of studies highly unlikely to be large enough to eliminate the effect of sampling error (Hunter & Schmidt, 1990; Snyder & Lawson, 1993). So, it is already assumed that there is a large impact of sampling error for the current study. Based on that, the "bare bones" meta-analysis makes extrapolation of effects much simpler and more apropos for the present discussion. In "bare bones" meta-analysis, only one artifact is controlled for, sampling error.

After obtaining a mean effect size score for a sample, finding standardized mean differences to estimate effect size variance is the next step. To compute an unweighted sample estimate of effect size variance, the following formula from Shadish and Haddock (1994) can be used:

For instance:

$$s^2(D) = \{[\text{Sum}(d_i - D)^2] / df_i\}; \quad (11)$$

where D is the mean effect estimate and d is Cohen's d from a contributing study.

First, compute the sum of squared deviation scores:

$$\text{Sum} = (.0036) + (.0025) + (.0289) + (.0036) + (.0484) + (.0081) + (.3844) + (.04)$$

$$\text{Sum} = .5195.$$

Then, divide by the degrees of freedom. Hypothetically, if there were eight studies in the sample:

$$df = n - 1 = 8 - 1 = 7.$$

Now, back to the original $s^2(D) = \{[\text{Sum}(d_i - D)^2] / df_i\};$

$$s^2(D) = \{[.5195] / 7\}$$

$$s^2(D) = .0742 = .07.$$

This is the estimate of the observed effect size variance for this sample of studies.

The sampling error variance, is used to get the standard deviation of effect sizes for that group of studies. The square root of the variance is the standard deviation of the sampling distribution, also known as the standard error of the mean estimate. So then, if the square root of the variance gives the standard deviation of distribution proposed by the sample, that figure can be used to compute confidence intervals. Continuing with the above example:

$$s^2(D) = .0742; s = (.0742)^{1/2} = .2724 = .27$$

Now, the standard deviation can be used to compute upper and lower limits of the expected values of sample scores:

Confidence interval for overall estimates:

$$95\% \text{ Confidence Interval (CI)} = D(k) \pm 1.96s(\text{std err}) \quad (12)$$

For example: $D(k) = .3388$; $s = .2724$

$$\begin{aligned} 95\% \text{ CI} &= .3388 \pm (1.96)(.2724) \\ &= .3388 \pm (1.96)(.2724) \\ &= .3388 + .5339 \text{ and } = .3388 - .5339 \\ &= .8727 \text{ and } = -.1951, \end{aligned}$$

Therefore, the 95% CI for this sample = $-.1951 \leq D \leq .8727$; the effect size is rounded to two decimal places.

Statistical significance of the effect size is ascertained by applying the 95% confidence interval limits to the effect size in question. Mean values that fall within the interval range have a 95% percent chance of being within the normal distribution of possible effect mean estimates. As the preceding example suggests, any mean effect value lower than $-.20$ or higher than $.87$ would be considered heterogeneous to the other studies' in the sample. These studies' effect sizes lie outside of the range from which one would say find the majority of summary outcome estimates. The "outlying" value asserts that it is an estimate outside what could be expected with 95% probability.

Homogeneity of effect size determinations in meta-analysis, with the use of the Q statistic, is analogous to ANOVA for comparing treatment groups. The purpose of the current study was exploratory; there were no directional hypotheses to confirm or reject; homogeneity estimates were not requisite. However, if variation in effect estimates was large, especially relative to the mean cluster value, it was dropped from the analysis and analyzed qualitatively. Essentially, the process is the same for obtaining Q statistics and

moderator analysis, only on a more rudimentary level. Correction of sampling error completes this "bare bones" meta-analytic approach (Hunter & Schmidt, 1990).

Based on the random effects model, the variance of the mean effect estimate (d) is equal to the sum of the observed effect estimate [$\text{Var}(\bar{\omega})$] and sampling error variances [$\text{Var}(e)$] (Hunter & Schmidt, 1990; Raudenbush, 1994). The sampling error variance can be computed in the following way (Hunter & Schmidt, 1990):

$$\text{Var}(e) = [(N-1)/(N-3)] [4/N] [1 + D/8]; \quad (13)$$

where N is the total sample size and D is the mean effect estimate.

In the current study, studies with differing perspectives and experimental designs were included to give a more accurate depiction of themes in the literature and more credence to population assumptions. Explanation of predictor/outcome relationships is the main focus of reported results; however, possible moderators are highlighted within the discussion chapter.

CHAPTER IV

RESULTS

Preface to Analyses

In order to make conscientious interpretations of the data, there are additional theoretical points that validate the utility of meta-analysis, despite its flaws. As explained in Chapter III, the meta-analytic study samples contained different targeted variables, outcome measurements, and definitions of activity involvement that had to be organized clearly to facilitate synthesis, analysis, and interpretation of contributing studies. Each study's variable outcomes were sorted into four clusters based on academic and social factors. The researcher's general concern about mixing incongruous studies to make summary statements is satisfied when applying a "random effect" philosophy.

The principal asset of the random effects model is the assumption that studies with different dependent variables and study characteristics can be used to make inferences about other population studies that are not identical to synthesis studies (Hedges, 1994; Raudenbush, 1994). The studies in a meta-analytic synthesis may differ from those in the study population as a consequence of the students sampled within each study, methodological variations, or true effect size parameter differences (Hedges, 1994; Shadish & Haddock, 1994).

The random effects model presumes that the sample of analyzed studies is from a hypothetically possible "population" of studies. The universe to which generalizations are made consists of a population of studies from which the meta-analysis' studies are drawn (Hedges, 1994; Hedges & Olkin, 1985). Raudenbush (1994) asserts that this artifact makes the random effects model more generalizable and better suited to meta-analysis than a fixed effects synopsis. This model also helps take heterogeneity into account when

estimating the average effect size and confidence interval (Hedges, 1994; Shadish & Haddock, 1994).

Data in the present study were examined to determine the practical impact that extracurricular involvement has on specific academic and psycho-social factors. Individual meta-analyses were conducted on six different activity types. Tables with summary effect sizes and descriptive statistics serve as references for reported findings. Each of the research questions are addressed and preliminary analysis of the data are discussed. Any statements that may imply causality of student outcomes were unintended and should be interpreted as correlational, non-causal relationships with activity involvement.

Data Analyses

Effect size charts in Appendix A give comparative reports of pooled effect sizes for each kind of extracurricular involvement. Tables A1 and A2 contain the mean effect estimates and standard deviations of all collected studies distributed in the 6 activity types. The table in Appendix B gives corrected effect sizes for activity study samples which contained extreme effect values; the re-calculated estimates after removing outlying effects were presented.

Identified outlying effect estimates were outside the confidence interval of possible scores for the sample (population estimate) in question. For example, if the 95% confidence interval for a sample of studies is $-.35 \leq d \leq .60$, a study with an effect size of 0.7 would be an outlying study. Hence, the study would be removed from the pool of primary studies' effects used to calculate the mean effect size for each cluster. General Activities and Sports were the only two activity categories that had outlying effect values.

The two tables in Appendix C show the longitudinal effect sizes for each of the 6

activity categories. Cohen et al. (2003) offered an informal gauge of effect magnitude or size of impact: d : 0.2 denotes a small effect, 0.5 denotes a medium effect, and 0.8 denotes a large effect. This scale is used for interpreting practical significance of outcome effects and will be applied when interpreted study findings (Cohen, 1994; Love-Clark, 1984).

Restatement of Research Questions

Research Question #1: Do effect sizes differ based on activity type?

Yes, different activity types yield different effect sizes. General extracurricular participation had the most consistent magnitude of effect across variable clusters. Additionally, the results from the general activities' meta-analysis are most robust statistically across activity categories because of the large ($n=12$) number of contributing studies. Tables A1 and A2 (in Appendix A) show the variety of effect sizes for each activity category.

Research Question #2: What social variables are significantly related to participation in extracurricular activities?

General activities and risk behaviors had an effect size of $[-].36$; the negative direction of the effect denotes participation's inhibitory effect on risk behaviors. Other cluster estimates were all between the small and medium effect size range. Corrected effect sizes for the Risk Behaviors ($d= [-].29$) and Identity Formation ($d= .23$) clusters showed little shrinkage of effect and showed a decrease in the variability of mean effects, according to change in standard deviation value.

In total, cluster estimates evinced that sports participation has a small amount of impact on all four outcome variables. Students taking part in sports activities experienced a small negative effect of participation on risk-taking behaviors ($d= [-].21$). Corrected

effect size values for Risk Behaviors ($d = [-].16$), which dropped in effect magnitude from second to third most effective, showed some inflation by inclusion of outlier studies.

The greatest effect of athletic participation was in identity formation ($d = .28$, $SD = .47$, $df = 7$). Identity Formation cluster summary effect was decreased by half its original magnitude ($d = .15$) with after the outlying study had been excised. The standard deviation value was also notably lowered suggesting a more homogeneous sample of contributing studies after corrections were made. Athletic participation's impact on Engagement behaviors has a small effect before and after statistical corrections ($d = .22$; corrected value $d = .14$).

Working was associated with nominal effects on engagement ($d = .07$) to activities and school settings. Identity Formation factors' effect size estimates fell in between small and moderate effect range ($d = .35$, $SD = .7$, $df = 3$). This effect required no statistical adjustment and was consistent across analyses. Participation in vocational activities and employment also exacted a small effect increase in risk-taking behaviors ($d = .29$, $SD = .35$, $df = 3$). Students involved with the “world of work” were the only activity participants who experienced an increase in risky and delinquent behaviors.

Students in Performing Arts and Pro-Social Activities had the largest summary effects for engagement behaviors. Of the studied categories, students in the aforementioned activities were most likely to have good attendance, have educational aspirations, and have other pro-academic behaviors (i.e. interest in classes, effort expended in courses). Overall, Performing Arts participation had a small effect on all cluster variables. The effect with the largest magnitude was engagement behaviors ($d = .36$) which falls in the middle of small and medium participation effect level. In addition, involvement in Performing Arts had a negligible effect on Identity Formation outcome

variables; however, the effect trend was in a negative direction. Performing Arts was the only activity category in which there was a negative influence of participation on intrapsychic and interpersonal factors; the Identity Formation cluster estimate was $d = [-].04$. Reduction of risk behavior effects was also consistent with Performing Arts and Pro-Social Activity involvement.

Engagement to school, activities, and positive attitudes and behaviors are minimally to moderately affected by affiliation with pro-social organizations ($d = .26$, $SD = .30$, $df = 4$). Along with students in band, drama, and choir, participants in pro-social activities also had the next highest active effect size on curtailing risk factors when compared to other activity categories. Risk Behaviors and Identity Formation data elements show small effect sizes $d = [-].19$ ($SD = .17$, $df = 7$) and $d = .23$ ($SD = .20$, $df = 5$), respectively.

Participation in community-based, out-of-school activities had the largest within-group impact on Engagement behaviors and the second largest effect magnitude among activity groups ($d = .32$, $SD = .54$, $df = 2$). The Engagement estimate falls between the small and medium effect range. Other cluster effect sizes were small, particularly in Identity Formation outcomes ($d = .01$). Community activities also exerted the smallest effect magnitude on inhibition of risk behaviors ($d = [-].10$). Effects of community activity involvement may have been underestimated as only two to three studies contributed to the majority of cluster averages.

Research Question #3: What is the relationship between academic achievement and extracurricular activity across studies?

Academic achievement summary effect estimates ranged from very low to moderate effect sizes among activity categories. General extracurricular activity

involvement had the largest pooled effect size of .47 ($SD = .23$); this means that on academic performance indicators, the average group of students participating in any or all kinds of extracurricular activities had scores that were about one half standard deviation above the average group of non-participants. By Cohen's standard, this is a medium level effect estimate. Pro-social activities had the next largest effect size of .34 ($SD = .27$) noting a small to moderate influence on academic achievement. After removing an outlying score, the corrected effect size was $d = .25$ and still the second most influential activity on academic achievement.

Sports and Student Employment / Vocational Activity participation had the smallest effect sizes in relation to academic achievement indicators, $d = .10$ and $d = .01$, respectively. Athletic participation contributed the next to the smallest effect on academic performance. Although analyses showed that the overall impact of student employment and vocational activities was negligible ($d = .01$), the association between work-related activities and academic achievement measured a negative effect trend.

Despite the minimal effect magnitude, the valence of the effect gives interpretive information about the summarized outcomes and practical impact. The negative effect direction highlights the hindrance of student academic performance by engaging in vocational activities and extracurricular employment. Performing Arts and Community Activities' cluster effect estimates reported small effect impacts for academic outcomes ($d = .20$ and $d = .14$, respectively). Pro-social activities supplied the second largest encouraging influence on academic outcomes, even after estimate correction.

Research Question #4: What is the relationship between academic achievement, social competence, and extracurricular activity over time in students' lives?

All longitudinal studies had an n of at least 3000 students and compared data from

two to four temporal data points. Tables 4 and 5 organize the data which address this research question. Most studies examined sophomore, senior, and post graduate effects, while others looked at multi- year middle school information or changes in outcomes from 8th grade to high school. Cluster effects based on four studies or more are presented below; four studies formed a rudimentary conceptualization based on at least 25% of the longitudinal data study pool. Average estimates with 3 studies or less were considered less representative of the sample of 18 studies. All reported summaries had small level effects. Although all these estimates are based on longitudinal data and inherently more applicable to the population, interpretations should still be made with caution due to the small number of contributing primary studies.

Outcome trends from longitudinal studies closely mirrored those of the wider sample. General activity involvement yielded the largest effect size for each variable cluster as compared with specific activity groups. The effect size means were also very similar to the primary study means. However, there was less variability and some shrinkage of effect magnitude of data elements across activities from the longitudinal sample. Academic achievement outcomes were impacted the same amount across all three data sets; this observation signifies consistency of effect within the target population.

Across a series of assessment time points, general activity and sports participation had smaller impacts on problem behaviors and identity factors. Engagement and Risk Behavior data elements' effect were very similar in magnitude to corrected values from the larger sample. Though there was a 50% decrease in Identity Formation outcome effect for general activity participants, this may be an artifact of the small number of

studies on which the estimate is based. Longitudinal effects of sports participation show increases in influence for all data elements. Academic achievement, engagement, and identity formation outcomes from the original and corrected data sets were mostly based on longitudinal data. Therefore, reported effect summaries for sports participation are statistically robust and comparable to the effectiveness from that in the overall sample.

This is also true for Performing Arts participation; however, effects were less altered by and more likely to show no change by including non-longitudinal study outcomes. Academic Achievement and Risk Behaviors clusters experienced small effect increases. Pro-social activities evinced the second largest impact on academic performance, engagement behaviors, and reducing risk behaviors of all activity categories. Effect sizes were very similar to those of the corrected general study sample. Long-term self esteem and peer effects are near or at zero for Performing arts, Work/Vocational, and Community activities.

Longitudinal effects of pro-social and performing arts activity participation were the most similar to those in the overall sample. Both categories noted a smaller magnitude of impact in the longitudinal studies, yet pro-social activities and performing arts participation had similar effect profiles. Student employment and vocational organization involvement had the least amount of bearing associated with minimal effects on academic achievement across categories ($d = .03$). Work-related activities showed continued engagement of risky behavior ($d = .13$) instead of reducing negative outcomes and negative impact on school and activity engagement.

Community activity effect sizes were based on only 1-2 studies. While all cluster estimates were either small or near zero impression, Risk Behaviors had the largest effect

estimate ($d = [-].21$). Interpretation information on effect is inappropriate but the direction of effect is meaningful. Any further interpretation of effect is not recommended.

Research Question #5: Do activity participation effect sizes differ at all for non-majority culture males, particularly African American boys, in the literature? If so, what are some of the characteristics of the differences?

Four studies in the sample pool specifically reported outcome information for African American students. Gerber (1996) found that African American students participating in general school-based extracurricular activities has a small effect size ($d = .23$) for academic achievement. This outcome was larger than the effect of community activity participation ($d = .16$). Community-based activities were only half as effective in boosting academic achievement outcomes for African American students as participation was for white students. Perkins (1996) looked at general activity involvement's relationship to risk behaviors, specifically sexual activity, substance use, and disciplinary problems. The overall effect size estimate for participation effect on risk behaviors for African American students is $d = [-].25$; participation statistics were also investigated for Hispanic, Asian, American Indian, and Caucasian students. Effect sizes that contributed to the primary study average estimate are as follows: sexual activity ($d = [-].16$), substance use ($d = [-].23$), and misbehavior/discipline ($d = [-].36$).

Both Melnick, Sabo, and Vanfossen (1992) and Braddock et al. (1991) explored differential effects of sport participation on student outcomes. Melnick et al., (1992) reported statistical information from a collective, multi-ethnic sample which included African American children. Athletic participation had a large, profound effect on academic achievement measures ($d = .89$) and identity factors ($d = 1.07$). Despite the vast influence athletics has on academic performance, sports participation was associated with

a negative effect size estimate for earned classroom grades or GPA ($d = [-] 1.01$). The large magnitude of other academic outcome indicators neutralized the majority of negative impact noted for GPA. Engagement and Risk Behaviors had small effects of comparable size, $d = .11$ and $d = [-].12$ respectively. The negative value for Risk Behaviors effect denotes sports participation's reduction of negative behavior consequences. Athletic involvement's effect on participation in other extracurricular activities was very small ($d = .04$) and of minimal practical importance.

Braddock, Royster, et al. (1991) investigated participation effects oriented only to African American student outcomes. Braddock et al. reported statistics that resulted in small effect sizes for Engagement ($d = .15$), Risk Behaviors ($d = [-].18$), and Identity Formation ($d = .25$) data elements. Identity Formation data element was the largest within the study, yet the overall effect size was small. Like in Melnick et al. (1992), the Engagement and Risk Behavior clusters had a similar small summary estimate magnitude, yet Risk Behaviors decreased as a result of the negative effect direction.

CHAPTER V

SUMMARY AND DISCUSSION

The purpose of this study was to understand of the relationship between the effects of extracurricular activity participation on students' academic and psycho-social factors. Below is a summary of the findings within each grouping of studies as well as some comments on limitations of the study and future need for research.

Summary Statement

The results of the analysis of activity differences among student outcomes indicate that, overall, students who participate performed better academically, achieved more academic goals, had higher self esteem, had higher peer status, and engaged in fewer risk behaviors than students who have little to no involvement with extracurricular opportunities. Particular characteristic outcomes within specific activities (i.e. athletics, employment) are highlighted below.

General Extracurricular Activity Participation

General extracurricular activity involvement had the largest pooled effect size of .47 ($SD = .23$). After removing outliers, the corrected value for the Academic Achievement cluster was $d = .45$. This was the largest magnitude effect of any under investigation and shows a medium level of practical significance. Students involved in general activities also gained the biggest benefit of reduction in risk taking behaviors. General activity participants are less likely to engage in substance use, sexual activity, and antisocial behaviors than non-participants or students with low level or inconsistent involvement (Buckhalt et al., 1992; Chewing & Van Koningsveld, 1998).

The negative direction of the effect denotes participation's inhibitory or perhaps

preventive effect on risk behaviors. General activity participation was also responsible for the next to the largest summary effect for Identity Formation outcome variables ($d = .23$). The average level of existing risk behaviors and self esteem reported by non-participating students are lower (about $\frac{1}{4}$ standard deviation) than the average general activity participant.

Sports and Athletics-Related Activities

Though athletic participation is sometimes touted as “the best” and most widely studied extracurricular involvement, empirical evidence shows that student athletes reap much smaller benefits than students in other activities. Of the six activity categories, sports participation ranked fifth in academic achievement indicators ($d = .10$), fifth in engagement behaviors ($d = .14$), fourth in risk behavior reduction ($d = -.16$), and fourth in identity formation outcomes ($d = .15$). All of the effect sizes had small practical significance and nearly the same magnitude.

The greatest uncorrected effect of athletic participation was found in Identity Formation ($d = .28$, $SD = .47$, $df = 7$). After the outlying study of Brown (2001) was removed, the corrected Identity Formation cluster summary effect was decreased by half its original magnitude ($d = .15$). Subsequently, the summary effect dropped from third to fourth most effective across activities. The standard deviation value was also notably lowered suggesting a more homogeneous sample of contributing studies after corrections were made.

Within the Identity Formation data element, popularity and peer status for athletes contributed 80% of the effect summary score; peer factors' mean effect was $d = .36$ as compared to $d = .01$ for self esteem/efficacy and $d = .08$ for locus of control. It seems that

athletic impact may not be because of skill acquisition and relationships, but more because of relative popularity of the activity within the peer culture. Overall, psychosocial outcome (risk reduction and identity factors) effects for sports participants were larger than those for academic and engagement connections. This finding is consistent with the literature's assertion of sports participation having more profound effect on social factors than academic ones. Despite intuitive assumptions about sports participation, the empirical evidence shows meager outcomes.

Student Employment and Vocational Education Activities

Work/Vocational participation had the smallest reported effect magnitude for academic achievement, reflecting the trend described in the literature. Despite the minimal effect size ($d = [-].01$), the valence of the effect gives interpretive information about the summarized outcomes and practical impacts. The negative effect direction corroborates the literature assertion of poorer grades and lower levels of formal educational accomplishment by students engaging in vocational activities and extracurricular employment.

Furthermore, working and vocational activity involvement were associated with nominal effects on engagement ($d = .07$) to activities and school settings. Student employees, as compared to other activity participants, noted difficulties with school attendance, preparation for classes, and aspirations toward academic goals. Compromised engagement behaviors may work in concert with meager academic achievements to discourage student outcomes and long term adjustment. Conversely, student employment literature does highlight one affirmative contribution of vocational participation: student employability after leaving or graduating from high school. Students in vocational/work-

study activities were more frequently employed at post graduate assessment than non-workers, students from other activities, and students attending college; they also reported high levels of job satisfaction and career oriented goal attainment (Marsh, 1991).

Identity Formation factors' effect size estimates fell in between small and medium effect range ($d = .35$, $SD = .7$, $df = 3$) and presented as the largest effect size for self esteem and peer status variables. The effect estimate was based on four studies, required no statistical adjustment, and was consistent across analyses. This finding is also commensurate with the literature in that vocation oriented students often reported high levels of self esteem, self concept, and independence (Kablaoui & Pautler, 1991; Marsh, 1991).

Students involved with the “world of work” reported more drug use, more delinquent behaviors, and lower high school graduation rates than all other activity participants. In fact, participation in vocational activities and employment exacted a small effect increase in risk-taking behaviors ($d = .29$, $SD = .35$, $df = 3$). Unfortunately, this finding is consistent with research stating that working and vocational activity students have greater affiliations with antisocial peers, engage more frequently in delinquent behaviors, invest less time in school, and achieve at lower academic levels than students who do not work (Greenberger & Steinberg, 1981; Kablaoui & Pautler, 1991).

Performing Arts Activities

Overall, Performing arts participation had a small effect on all cluster variables. The effect with the largest magnitude was engagement behaviors ($d = .22$; $SD = .09$, $df = 4$). Performing Arts was the only activity category in which there was a negative influence of participation on Identity Formation factors; this finding is supported within

the literature (Fejgin, 1994; Shaw et al., 1995). Reduction of risk behavior effects for Performing Arts were comparable to that of Pro-social Activity involvement and tied for rank order of second most effective activity for this data element.

Reported student outcomes for Identity Formation study variables differed as a function of gender. Male students in the arts activities reported lower levels of esteem and peer status as compared to both male and female participants of other extracurricular activities. Performing Arts are more socially oriented activities, which are more identified with “feminine” roles. Perhaps, desired male identity traits and general socialization are challenged by participation in non-sport related activities. Some of the compromised effect could also be attributed to performing arts position in the previously discussed “hierarchy” of activities (Barber et al., 2001; Eder & Kinney, 1995). In spite of smaller social gains, students in performing arts reported less sexual activity and more social competency skills as compared to students in other activities and non-participants (Shaw et al., 1995).

Pro-Social/Community Activities

Pro-social acts, such as Scouting, volunteering, and church activities, presented the second most powerful set of activity outcomes across all categories under study. All effect size estimates were between the small and medium effect range. In addition to shared standing with Performing arts’ effect on Engagement factors, pro-social participation influences on identity factors mirrored that of general activity participation.

Though effects are small, community activity participation enhanced Academic Achievement and Engagement Behavior variable outcomes. Risk behaviors and identity factors were minimally impacted. Based on the current study’s data, it appears that out of

school activities do contribute to student's connection to school and academically oriented successes. Across data elements, community-based activities' influence rivals that of in-school sport participation and contact with vocational/work activities.

Due to the small number of community-based activity related sources, quantitative data and interpretations should be taken with caution. Yet, qualitative information from the literature synthesis does support these preliminary effect size results. Community-based, out-of-school activities (i.e. private sports, Jack and Jill Youth Groups) included a nebulous collection of activities that may overlapped with those identified and analyzed as pro-social acts, such as church activity involvement. Definition of independent variables across studies may be inconsistent (i.e. activities that are included or not in composites- individual acts vs. "performing arts") and can muddle outcomes (Marsh, 1992).

Longitudinal Extracurricular Participation

Next to General Extracurricular Activity participation, pro-social activity involvement proved to have the second most powerful effect on academic skills and accomplishments. Compared to other activity categories, long term effects on Engagement Behaviors and reduction of Risk Behaviors were also considerably enhanced by pro-social activity participation. According to the data, there were no longitudinal self esteem and peer status benefits for students participating in Performing arts, Student Employment/Vocational Education, or Community-Based activities. Working students and those engaged in vocational activities had higher levels of risk behavior and more negative outcomes related to academics and engagement in years after graduating from high school than their counterparts.

According to the data, there is a difference between school based extracurricular involvement and community based extracurricular involvement. General activity (school extracurriculars) participation is by far more effective than non-school activities. The one area in which students involved in outside activities were not better was Engagement. Apparently, the influence of community acts on attendance, interest in school and achievement, and level of investment in activities is just as potent as those of general school activities. This supposition flies in the face of the “connection to school” theory that reportedly fortifies the impact of school related activities (Gerber, 1996; Marsh, 1992). Interestingly, community-based activity participants experienced a larger effect on academic achievement than working students and student athletes. Student participation benefits vary not only by activity category, but also by the activity’s primary setting.

Exposition of Researcher Expectations

Though the study expectation was that sports activity participation would have superior impact on student outcomes, study findings state the opposite. Within the sports category, academic achievement had the smallest effect size, which consistent with this researcher’s expressed proposition. However, when compared with other extracurricular activity participants, student athletes did not enjoy higher academic achievement. In fact, the influence of sports activity participation on academic endeavors ($d=.10$ for all studies & $d = .13$ for longitudinal studies) was second only to effect noted by vocational activity participants and student workers ($d= [-].01$ for all studies & $d = .03$ longitudinally).

Students who work and participate in vocational activities/ organizations did offer the smallest impact on all positive outcome clusters (academics, engagement, and identify factors). The study expectation that working students would have the highest risk

behavior engagement and the lowest academic achievement benefit than any other activity category was supported. Educational success measures showed a negative impact of student work; this was unique in comparison to the other activity areas. Students involved in vocational/ work oriented activities had a moderately significant practical impact on risk behaviors. However, the positive valence of the effect demonstrate that working is related to higher incidences of gateway and hard drug use, school dropout, and delinquent acts than other extracurricular areas.

Concluding Statement

The current study's exploratory focus on pro-social or community-based activity participation highlighted beginning trends in the literature. Seven studies that looked at pro-social activity and five studies geared toward community-based activities were included in this meta-analysis. Empirical evidence shows that these activities' effects range from small to negligible levels of practical significance. Pro-social activities exacted larger impacts on most outcomes areas than sports, work/vocational organizations, performing arts, and community based activity participation. On the contrary, out of school extracurricular involvement had bigger impacts on engagement behaviors than pro-social involvement. On the other hand, the fact that the pro-social activities' Engagement cluster was based on more studies than that for community acts, pro-social involvement may have a more sturdy bearing and reliable effect estimate for school attendance, educational aspirations, and other related factors.

Participation effects for minority students have received little attention within the literature base. Moreover, the same assertion can be made regarding participation trends for African American students. The paucity of studies available for retrieval and the

sparse number of studies fit for quantitative analysis suggest a need for more in-depth research attention to this segment of the student population.

Research Limitations

Outlying Study Effect Values

Each of the studies producing outlying effect scores were doctoral dissertations. Small sample sizes and unstandardized measures were common methodological flaws within the two confounding studies. Authors often incorporated an instrument that they wrote themselves into pre/post assessment of the sample. Another common theme in the outlier studies was the sample demographic; both investigated trends in urban, minority populations. Although it is uncertain exactly which study characteristics would be most liable for effect changes, unique details of the studies have been presented for inference postulation.

For general extracurricular activity, the outlying study for Risk Behaviors was conducted by Aziz (1999). Aziz studied general activity involvement and its decreasing effect on psychological distress symptoms due to exposure to violence and trauma, or Post Traumatic Stress Disorder (PTSD). The sample was comprised of 184 students of which 49.2% were Latino and 45.1% were African American. Whether students were witnesses of violence or experienced trauma personally, psychological maladjustment was mediated by participation in all kinds of extracurricular activities ($d = [-] 1.13$; Cluster 95% Confidence Interval (CI), $d = [-].96$ to $.24$). The resilience power of activity engagement had a statistically significant effect on the reduction of negative psychological sequelae of trauma. Participants' self esteem and self image scores are more than one standard deviation above those of non-participants.

Brown (2001) also contributed an outlying score to the Identity Formation outcome cluster for general activity participants ($d= 1.31$; 95% CI: $d= [-].52$ to 1.17). Nonparticipating students scored over 1 ¼ standard deviations below that of students in extracurricular activities. The Coopersmith Self Esteem Inventory was used along with an author-made, open-ended questionnaire about the number of extracurricular involvements and the amount of time spent engaged in their activities. Results were presented for both general and athletic activity participation based on responses from 101 urban students. Additionally, Brown (2001) was the outlying study for identity factors in for students in athletic activities. Effect size was estimated at 1.24 (95 % CI: $d = [-].63$ to 1.20). Again, non-participants reported notably lower self esteem scores than student athletes.

Inter-Rater Reliability

Best meta-analytic practices list reporting inter-rater reliability of study factors/categories as a fortifying part of meta-analytic synthesis investigation (Hunter & Schmidt, 1990; Bangert-Drowns & Rudner, 1991). Building and piloting a coding form with which to sort study variables, training raters, and ascertaining levels of coder agreement are procedures meant to offer a validity check for meta-analytic study design and result implications (Orwin, 1994; Stock 1994). Ideally, two or more raters read the same body of literature in order to generate a consensus of study characteristics and categorize outcomes variables. A sample of papers are collected, read, and noted by the primary rater. The primary analyst makes the initial set of study characteristics and determined categories while other raters validate the appropriateness and breadth of variable code designations (Stock, 1994).

No matter the number of variable clusters, including an “other” category serves as

a catch-all for coders who have some uncertainty of where to place a certain study trait (Hunter & Schmidt, 1990; Stock, 1994). New variables uncovered while coding can then be post-classified and used to make more accurate sample classifications. This is an iterative process for developing the coding system that archives pertinent study attributes.

Without the benefit of multiple readers and raters of the literature, one rater's perception of apparent and more subtle variable groupings contributes an experimental error called imperfect construct validity in dependent variables (Hedges & Olkin, 1985; Hunter & Schmidt, 1990). The primary analyst forms an initial code, employing a collection of all the possible study characteristics, which is organized into descriptive groupings for sorting the sample. A second and third review of the study variables and their generated categories allows for amendment of variable placement, just as integrating information from multiple raters would (Orwin, 1994). Despite the recommendation of including inter-rater reliability and the expected objective differences among raters, there is still an inherent subjectivity to each judge's evaluation of study traits. Due to this, cases in which there is only one rater are common and still contribute important insight into the research base.

The current study sidestepped one of the sorting pitfalls by recognizing different subgroups of extracurricular activities before data analysis. The rating process would have been more useful if the study assumption had been the impact of extracurricular activity as one universal data element. Comparison of student outcomes were more firmly anchored in the premise of divergent groups of student outcomes based on specific activity types than limiting associations with one extracurricular activity conglomerate as the independent variable. Meta-analyses that separate different independent variables are

more informative and give more specific evidence of outcomes idiosyncratic to the variability in independent factors (Hunter & Schmidt, 1990).

No Pass, No Play Policy

"No Pass, No Play" first gained prominence in 1984 when it was included as part of a comprehensive Texas education reform plan emphasizing system accountability. The proposal was seen as an attempt to reemphasize academics over athletics (NASBE, 1999). Texas became the first state to impose academic eligibility requirements to participate in athletics. (NASBE, 1999). The underlying premise is that students with failing grades are barred from participating in extracurricular activities for a set period of time (ranging from several weeks to an entire grading period). Proponents argue that this time is needed for students to concentrate on their school work and improve their grades. (NASBE, 1999). Students often are allowed to practice with the team, but are not able to compete.

Since school related extracurricular participation is belied by basic academic performance, this may be an added incentive to the intrinsic rewards already associated with sport involvement (Braddock et al., 1991; Hawkins et al., 1992; National Association of School Boards of Education [NASBE], 1999). The particular benefits of school activities have stronger links to school excellence than community-based activity involvement, yet failing grades makes school activities inaccessible to students who may benefit most from participation effects.

On the other hand, it could be an exclusionary criterion to the students who would most benefit from participating (Brown, 2000; Gilman et al., 2004; Rogus & Wildenhaus, 1991). No pass, no play policies also tend to disproportionately exclude minority students

from the participation in school extracurricular activities (Gerber, 1996). An unknown number of students were excluded from the original study samples due to more widespread implementation of this policy in the country.

Self-Selection Bias

Self-selection bias is a common, confounding issue in the research base of extracurricular activities. It is difficult and dangerous to make assumptive statements about the benefits of participation if the children who are involved in activities are so fundamentally different from those who do not. Pre-existing differences, rather than the influence of participation, may account for the gains in social competence, esteem, and achievement (Holland & Andre, 1987; Mahoney & Stattin, 2000) and should be controlled statistically and through solid experimental design. Individual level selection mechanisms may include a student's age, grades, skill level, socioeconomic status, race, geographic area, and gender (Eder & Parker, 1987; Hanks & Eckland, 1976; McNeal, 1995).

Given that self-selection cannot be avoided in participation research, researchers should be vigilant about the design of their studies. Many studies take a sample of convenience, assess participation levels and other characteristics at a given point and time, and then examine relationships between participation and other variables. If possible, conducting a pre-participation assessment of all the outcome variables of interest is very helpful. Pre-participation assessment offers a more reliable and less tainted pre-/post- design for future outcome studies (Eder & Parker, 1987; Holland & Andre, 1987; McNeal, 1999). Cooper et al. (1999) offered some alternate rationales for self-selection contamination. Extracurricular participation was positively associated with

residualized grades, indicating that the relationship between activity participation and grades can not be explained solely by the differential selection. Mahoney (2000) also found that individual traits and self selection of activities had little influence on positive adjustment patterns found in the high risk students.

Conceptual Flaws from Primary Studies

In this study, there may be some inaccuracy of effect estimates due to sampling error. A number of the studies' samples of students came from the same national databases (i.e. High School and Beyond, NELS: 88). This is a form of dependence, an interweaving of factors that contaminates inferences that can be made by overlapping samples (Hedges, 1994). Also, some of the feeder studies used less than representative samples of adolescents participating in extracurricular activities. Non-random sampling and overrepresentation or specialization of minority groups are examples of sampling errors that may produce skewed or inaccurate results.

Much of extracurricular activity research is based on students' self reports, which could be biased or inflated by a number of variables (i.e. socially desirable answers; inaccurate accounting of participation) (Gilman et al., 2004). There is evidence that self-reported information does not always correspond well with reports from others (Mahoney & Stattin, 2000). Fortunately within this data set, there are studies that adjusted for this flaw by getting collateral reports from researcher's observation, peers, school personnel, records, and/or parents.

Finally, the interaction of different treatments for students in more than one activity (Reynolds & Karr-Kidwell, 1996; McNeal, 1995), discrepant definitions and specificity of activity categories (Cooper et al., 1999; Newton, 1992; Youniss et al.,

1999), and errors in reliability of dependent variable measures (Brown, 2001; Camp, 1990; Eccles & Barber, 1999; Robinson, 1999) are other examples of study design threats to statistical and conclusion validity that are relevant in the current study (Schmidt, 1996).

Experimental Design Flaws

Another important issue to consider when examining participation research is the amount of time that is surveyed in which to study participation and effects. Holland and Andre (1987) warned research consumers about outcomes from a cross sectional approach rather than longitudinal. With cross-sectional research design, true effects may be hard to separate from pre-existing differences (Hunt, 1996). Many studies evaluate non-linear and interactional effects; direct relations are less common. Multiple regression frameworks, like many of those analyzed in this study, often evaluated effects in terms of product variables as defined by the multiplication of the independent and background variables (Marsh, 1992).

Some studies have used longitudinal, multi-wave designs that convey changes in variable outcomes after controlling for background variables, examining the issues of causal direction and self-selection, and exploring interaction effects (Cooper et al., 1999; McNeal, 1999; Marsh, 1992; Werner & Smith, 1982). Research Question #4 addressed some of the long-term effects of various activity involvements. Participation in general extracurricular activities had a medium level effect on student grades, achievement test scores, and educational goal attainment. Activity impacts on Academic Achievement outcomes were maintained over different time periods as measured by national, longitudinal student samples (i.e. High School and Beyond, HSB). The consistency and

magnitude of the effect estimates over time suggest long term benefits for students who participate in numerous kinds of structured extracurricular activity. The stability of the Academic Achievement effect sizes also lends credence to the effect being a good estimate of impact within the target population.

Longitudinal study analysis facilitated a more in depth investigation of participation impact and more robust statistics upon which to base interpretations. Immediate involvement in sports and athletics related activities was affiliated with higher prevalence of drug use and sexual activity (primarily for males) and less academic excellence than other activity participants. However, athletic involvement was related to long term increases in student outcomes, especially those related to self concept and identity development. A fair number of studies included in the participation samples which were based on longitudinal data upon removing less firmly rooted study effect estimates, remaining data served as a more reliable distillation of possible activity impact in the assumed student population.

Typical meta-analytic methodology suggests including studies of all levels of experimental rigor. However, summary statistics may be unduly influenced by less methodologically sound studies. But even supposed, methodologically sound experiments can have flaws and contaminate trend findings (Holland & Andre, 1987). Longitudinal research studies are preferred in the analysis of participation studies (Holland & Andre, 1987; Mahoney & Stattin, 2000; McNeal, 1998; Werner & Smith, 1982). The large number of subjects in national databases and the time sampling of outcomes over several years proffer more hardy information on which interpretations can be based. Marsh (1992) also asserted that distinctions between spurious and mediated effects can be

facilitated by the use of longitudinal data and data from national databases (i.e. HSB, NELS: 88). Though participation showed small effect sizes, these effects may be large enough within the population to have theoretical and practical implications. Overall, careful consideration of many factors influences the quality and applicability of meta-analysis (Glass, 1977).

Future Implications for Research and Practice

Instead of searching for broadly based protective factors, Rutter (1988) asserts that researchers need to focus on protective mechanisms and processes. More research efforts should question why and how some individuals managed to maintain high self-esteem and self-efficacy in spite of facing the same adversities that lead other people to give up and lose hope (Murphy & Moriarity, 1976; Rutter, 1987). Consistent with the developmental perspective described previously, participation may lead adolescents to acquire new skills (organizational, planning, time management, etc.), to develop or strengthen particular attitudes (to discipline, motivation), or to receive social rewards that influence personality characteristics (Holland & Andre, 1987; Scott, 2001).

Hypothetically, the influence of extracurricular participation can be both direct and indirect. For example, participation may lead to direct social reinforcements by way of making friends and widening a personal network of resources. In the course of participating, individuals are exposed to a wider variety of occupational and educational ideas through participant contact and, in turn, are lead to change in educational attitudes and aspirations (Sandstrom & Coie, 1999; Zaff & Hair, 2003). This finding illustrates a more indirect benefit of the social component of extracurricular involvement. Holland and Andre (1987) admonished other researchers to remain aware of the possibility of

both direct and more subtle effects of activity participation when designing and conducting inquiries. Some of the built-in processes and spoils of extracurricular activity can be understood as the indirect mediators of student outcomes (Brown, 1999).

In a number of studies and historical accounts, athletic involvement is touted as a potentially powerful resilience and coping mechanism. Resilient students were able to experience losses, make a recovery strategy, and practice in order to make a better showing in the next competition. Participants ‘bounce back’ from disappointing performances by re-investing and making constructive improvements in performance. At some point along the way, the student does experience success and gratification in exchange for the effort and past challenge. One also gains the application of occasion defeat being a necessary part of the skill building process. These steps and experiential strategies are easily transferable to academic work and pursuits (Fejgin, 1994; Braddock et al., 1991; Hawkins et al., 1992).

While sports may afford more frequent and intense experiences of these ups and downs, students who participate in other activities affront and overcome the same kind of obstacles. Locus of control may be developed through experiences of success and failure, realizations of individual power to perform better or worse, and insight that other people or circumstances can not be blamed for failure (Bandura, 1977; Harter, 2003; Fejgin, 1994). Increased self motivation, self efficacy, self worth are developmentally necessary cognitive and perception shifts that seem to be greatly encouraged by meaningful engagement in extracurricular and other structured activities (Eccles, 1999; Eccles & Midgley, 1990).

General participation in the extra-curriculum facilitates the acquisition of loss

recovery and tenacious goal pursuit self-competencies. McNeal (1999) gave a theoretical framework in which to approach the specific gains of activity participation.

Extracurricular activities are a stage upon which students are exposed to cultural values and practical skills. Human capital, which is gained as a product of participation, is conceptualized as an individual's level of skills, general knowledge, and educational attainment (Coleman, 1988). For instance, Mahoney and Stattin (2000) posit that extracurriculars emphasize cooperation and competition. Competitive aspects occur as the student challenges himself/herself to improve skills and/or in direct competition with an opponent. Cooperation among members within an activity is often necessary to maximize individual and group skill development. The aspects are complimentary rather than contradicting (Mahoney & Stattin, 2000).

Just like effect sizes, the skills and lessons students learn may be activity specific. Some researchers contend that coaches and sponsors impart the importance of effort and desire to achieve to sports participants. Players are taught that winning is more often a matter of heart than outstanding prowess (Eder & Parker, 1987; Hawkins et al., 1992). Students who participated in community service projects learned empathy, giving, and interconnectedness of others (Marsh, 1992; Hodgkinson & Weitzman, 1990).

Recognition of skill and talent and social rewards from activity participation also helps to develop a more positive self concept and enhanced self esteem (Fejgin, 1994; Harter, 2003; Zaff & Hair, 2003). Other qualities gained by involvement in extracurricular activities could include leadership, self discipline, commitment to others, goal setting, time management, money management, decision making, higher level thinking skills, following directions, determination, and responsibility (Gordon, 1995,

Newton, 1992; Olson, 1990).

In many cases, human capital can help activity participants gain access to a number of opportunities (i.e. college, peer group, elite activity participation) that may not have been available otherwise (Adler & Adler, 1994; Fejgin, 1994; McNeal, 1999; Thomas & Moran, 1991). Human capital assists in engendering social supports; social capital is one's network of relationships established with other people, like parents, teachers, and peers (Coleman, 1988; McNeal, 1999). One of the most frequently expressed points of extracurricular activity participation benefit is about relations with supportive adults. A different kind of relationship with an adult, (not as teacher or parent with their expectations), opens up opportunities to build self confidence and self esteem, and being part of a group (Eder & Parker, 1987; Falbo & Lein, 1999; Franklin, 1992; McMillan & Reed, 1993; Winfield, 1991). The relationship between the participant and the coach/teacher is important (Hawkins et al., 1992; Marsh, 1992).

Links to peers are also important in building social support. Friendships function as a practice arena for social interactions, a cultural institution that transmits knowledge, and a construction of the adolescent's social self-concept (Eccles & Barber, 1999; Sandstrom & Coie, 1999; Shaw et al., 1995; Youniss et al., 2001). The peer group acts more to reinforce existing strengths and weaknesses than to change adolescents' characteristics (Eccles, 1999) and may have a positive or negative influence. Furthermore, studies have shown that developing friendships with students of other cultures promotes greater academic resilience and cooperative, diverse group affiliation (Clark, 1991; Young et al., 1997).

Many, if not all, of these values are socially desirable and reinforce conventional

values. McNeal (1999) claimed that participation in extracurricular activities is one mechanism whereby class advantages are passed from parents to children. Human and social capital both serve as socialization expectations and transmitters of cultural values to children and adolescents (Adler & Adler, 1994; Greenberger & Steinberg, 1981). A number of researchers comment on the reinforcement traditional gender roles and the imposition of adult values on children's development (Eder & Parker, 1987; Thomas & Moran, 1991). In summary, extracurricular activity participation can facilitate individual change processes and overall child and adolescent development (Bronfenbrenner, 1976; Meichenbaum & Deffenbacher, 1988; Rutter, 1988; Steitz & Owen, 1992; Young et al., 1997).

In conclusion, the academic and social profits of extracurricular activities that have been examined in this study can be used to inform program planning and implementation. The best outcomes are brought about through well- built, developmentally appropriate structured activities. Effective youth activities have a) high organization and structure; b) regular meetings; c) an emphasis on increasingly complex skill building and goal setting abilities; and d) leadership by one or more competent adults. Activity programs that lack one or more of these components have compromised effectiveness (Mahoney, 2000; Mahoney & Stattin, 2000; O'Donnell, 1992). Brown (2000) offered more specific qualities of "good" extracurricular activities: development of a sense of belonging, opportunities to develop a social network (adults and pro-social peers), supply positive reinforcement and an achievement orientation, allow participants to have leadership roles, and have age appropriate expectations and goals for students. Well designed extracurricular activity programs also evaluate themselves to ascertain

whether they meet their goals and maintain a programmatic focus. Organizations that generate ties with important stakeholders, such as parents and community resources, fare better in terms of goal attainment and student enrichment (Bronfenbrenner, 1976; Falbo & Lein, 1999; Garibaldi, 1992; Winfield, 1991).

In many parts of the country, growing restrictions on participation are linked to equal access to the extra-curriculum and educational budgeting of resources. Suggestions present in the literature base cover making activities available to students with low academic achievement (“No pass, no play” rules) and low SES (participation costs) (Gerber, 1996; McNeal, 1999). Establishing support systems which include individual mentors, initiating and supporting programs for children to enrich non school activities, setting high expectations for students, minimizing absenteeism, filling in learning gaps, exposing children to successful role models from real life are other built-in benefits of extracurricular activities that would be lost as a result of program cuts (Clark, 1991; Kunjufu, 1982; Missouri Department of Elementary and Secondary Education, 1997, Winfield, 1991). Ultimately, those most impacted and left lacking by the absence of extracurricular opportunities are America’s children and adolescents.

REFERENCES

Note: References designated with an asterisk (*) were used in this study's meta-analyses.

- Adler, P.A., & Adler, P. (1994). Social reproduction and the corporate other: The institutionalization of after-school activities. *Sociological Quarterly*, 35: 309-328.
- Allen, J. P., Philliber, S., Herrling, S., & Kuperminc, G. P. (1997). Preventing teen pregnancy and academic failure: Experimental evaluation of a developmentally based approach. *Child Development*, 64: 729-742.
- Armentrout, W.D. (1979). Neglected values in higher education: Needed reorganization in curricular and extra-curricular activities to provide significant experiences. *Journal of Higher Education*, 50: 361-367.
- *Aziz, J.N. (1999). Exposure to Violence, Stress, and Resilience among African-American and Latino/Latina High School Students Achievement. (Doctoral dissertation, Pennsylvania State University, 1999). *Dissertation Abstracts International*, 60: 3555.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84: 191-215.
- Bangert-Drowns, R.L., & Rudner, L.M. (1991). Meta-Analysis in Educational Research. *ERIC Digest*. (ERIC Document Reproduction Service No. ED339748.)
- *Barber, B.L., Eccles, J.S., & Stone, M.R. (2001). Whatever happened to the jock, the brain, and the princess? Young adult pathways linked to adolescent activity involvement and social identity. *Journal of Adolescent Research*, 16: 429-455.
- Belle, D. (1999). *The After-School Lives of Children Alone and with Others while Parents Work*. Erlbaum, Mahwah, NJ.
- *Bingham, C.R., & Crockett, L.J. (1996). Longitudinal adjustment patterns of boys and girls experiencing early, middle, and late sexual intercourse. *Developmental Psychology*, 32: 647-658.
- Borg, M.D., Borg, W.R., & Gall, J.P. (1996). *Educational Research: An Introduction*, (6th ed). Longman, White Plains, NY.
- *Braddock, J.H., II., Royster, D.A., Winfield, L.F., & Hawkins, R. (1991). Bouncing back: Sports and academic resilience among African American males. *Education and Urban Society*, 24: 113-131.

- Bronfenbrenner, U. (1976, April). *The Experimental Ecology of Education*. Paper presented at the Annual Meeting of the American Educational Research Association: San Francisco, CA.
- Brown, B.B., & Steinberg, L. (1991). *Non-Instructional Influences on Adolescent Engagement and Achievement*. Final Report: Project 2. Washington, DC: National Center of Effective Secondary Schools. (ERIC Document Reproduction Service No. ED340641.)
- Brown, R. (2000) *Extracurricular Activity: How Does Participation Encourage Positive Youth Development?* University of Nevada, Cooperative Extension, Fact Sheet 99-32. Retrieved August 14, 2000, from <http://www.extension.unr.edu/Teens/extracurricu.html>.
- *Brown, R.A. (1999). The Influence of Extracurricular Activity Participation upon Youth Problem Behavior: School Connection as a Mediator. (Doctoral dissertation, University of California, Davis, 1999). *Dissertation Abstracts International*, 60: 4271.
- *Brown, R.R. (2001). *Adolescents, Jobs, and Extracurricular Activities: Perceptions of Parental and Peer Influence and Relationships with Self-Esteem and Academic Achievement*. (Educational Specialist Thesis, University of Wisconsin- Eau Claire, 2001).
- *Buckhalt, J.A., Halpin, G., Noel, R., & Meadows, M.E. (1992). Relationship of drug use to involvement in school, home, and community activities: Results of a large survey of adolescents. *Psychological Reports*, 70: 139-146.
- *Camp, W. (1990). Participation in student activities and achievement: A covariance structural analysis. *Journal of Educational Research*, 83: 272-278.
- Chewning, B. & Van Koningsveld, R. (1998). Predicting adolescents' initiation of intercourse and contraceptive use. *Journal of Applied Social Psychology*, 28: 1245-1285.
- Clark, M. L. (1991). Social identity, peer relations, and academic competence of African-American adolescents. *Education and Urban Society*, 24: 41-52.
- Cohen, J. (1994). The earth is round ($p < .05$)? *American Psychologist*, 49: 997-1003.
- Cohen, J., Cohen, P, West, S.G., & Aiken, L.S. (2003). *Applied Multiple Regression-Correlation Analysis for the Behavioral Sciences*. (3rd ed.). Erlbaum, Mahwah, NJ.
- Coleman, J. (1988). Social capital in the creation of human capital. *American Journal of Sociology*, 94: 95-120.

- *Cooley, V.E., Henriksen, L.W., Van Nelson, C., & Thompson, J.C. (1995). A study to determine the effect of extracurricular participation on student alcohol and drug use in secondary schools. *Journal of Alcohol and Drug Education*, 40: 71-87.
- *Cooper, H., Valentine, J.C., Nye, B., & Lindsay, J.J. (1999). Relationships between five after-school activities and academic achievement. *Journal of Educational Psychology*, 91: 369-378.
- Duncan, S. (2000). *Family Matters: What is the Role of "Extracurricular" Activities?* [Online]. Retrieved August 14, 2000, from <http://www.montana.edu/wwwpb/home/extra.html>.
- Eccles, J.S. (1999). The development of children ages 6 to 14. *Future of Children*, 9: 30-44.
- Eccles, J., & Midgley, C. (1990). Changes in academic motivation and self perceptions during early adolescents. In Montemayor, R. & Adams, G.R.(Eds.), *From Childhood to Adolescence: A Transitional Period? Advances in Adolescent Development: An Annual Book Series* (Vol. 2). Sage, Thousand Oaks, CA, pp. 134-155.
- *Eccles, J.S., & Barber, B.L. (1999). Student council, volunteering, basketball, or marching band: What kind of extracurricular involvement matters? *Journal of Adolescent Research*, 14: 10-43.
- *Eder, D., & Kinney, D.A. (1995). The effect of middle school extracurricular activities on adolescents' popularity and peer status. *Youth and Society*, 26: 298-324.
- Eder, D., & Parker, S. (1987). The cultural reproduction of gender: The effect of extracurricular activities on peer group culture. *Sociology of Education*, 60: 200-213.
- Falbo, T., & Lein, L. (1999, August). *Population and Environmental Factors Promoting School Success*. Paper presented at the Annual Convention of the American Psychological Association; Boston, MA. (ERIC Document Reproduction Service No. ED435902.)
- *Fejgin, N. (1994). Participation in high school competitive sports: Subversion of school mission or contribution to academic goals? *Sociology of Sport Journal*, 11: 211-230.
- *Finn J.D., & Rock, D.A. (1997). Academic success among students at risk for school failure. *Journal of Applied Psychology*, 82: 221-234.
- Ford, D.Y. (1995). *A Study of Achievement and Underachievement Among Gifted*,

- Potentially Gifted, and Average African-American Students*. The National Research Center on the Gifted and Talented, University of Virginia, Charlottesville, VA. (ERIC Document Reproduction Service No. ED 429394.)
- Franklin, M.E. (1992). Culturally sensitive instructional practices for African American learners with disabilities. *Exceptional Children*, 59: 115-122.
- Friedrich, K.R. (1997). Alternative education for at-risk youth: An analytical review of evaluation findings. (Doctoral dissertation, Texas A&M University, 1997). *Dissertation Abstracts International*, 58: 1197.
- Garibaldi, A.M. (1992). Educating and motivating African American males to succeed. *Journal of Negro Education*, 61: 4-11.
- *Gaspard, M.R., & Burnett, M.F. (1996). The relationship between self esteem and academic achievement of rural ninth grade students. *Journal of Rural and Small Schools*, 4: 2-9.
- *Gerber, S. (1996). Extracurricular activities and academic achievement. *Journal of Research and Development in Education*, 30: 42-50.
- Gholson, R.E. (1985) Student achievement and co-curricular activity participation. *NASSP Bulletin*, 69: 17-20.
- Gilman, R., Meyers, J., & Perez, L. (2004). Structured extracurricular activities among adolescents: Findings and implications for school psychologists. *Psychology in the Schools*, 41: 31-41.
- Glass, G.V. (1976). Primary, secondary, and meta-analysis of research. *Educational Researcher*, 5: 3-8.
- Glass, G.V. (1977). Integrating findings: The meta-analysis of research. *Review of Research in Education*, 5: 351-379.
- Gordon, K.A. (1995). Self-concept and motivational patterns of African American high school students. *Journal of Black Psychology*, 21: 239-255.
- Gordon, K.A. (1996). *Resilience and Motivation in Two Ethnic Minority Populations*. (ERIC Document Reproduction Service No. ED404401).
- Greenberger, E., & Steinberg, L.D. (1981). The workplace as a context for the socialization of youth. *Journal of Youth and Adolescence*, 10: 185-210.
- Griffin, N., Chassin, L., & Young, R.D. (1981). Measurement of global self-concept versus multiple role-specific in adolescents. *Adolescence*, 16: 49-56.
- Hanks, M., & Eckland, B. (1976). Athletics and social participation in the educational

- attainment process. *Sociology of Education*, 49: 271-294.
- Harrison, P.A., & Narayan, G. (2003). Differences in behavior, psychological factors, and environmental factors associated with participation in school sports and other activities in adolescence. *Journal of School Health*, 73: 113-120.
- Harter, S. (2003). The development of self-representations during childhood and adolescence. In Leary, M.R. & Tangney, J.P. (Eds.), *Handbook of Self and Identity*. Guilford, New York, pp.610-642.
- *Hawkins, R., Royster, D.A., & Braddock, J.H. (1992). *Athletic Investment and Academic Resilience among African American Females and Males in the Middle Grades. Research Report #3*. Urban Child Research Center, Cleveland State University, OH. (ERIC Document Reproduction Service No. ED361450.)
- Hayes, D.M., & Swisher, J.D. (1991). Social activity participation and the drinking and driving behaviors of adolescents. *Journal of Alcohol and Drug Education*, 36: 7-16.
- Hedges, L.V., & Olkin, I. (1985). *Statistical Methods for Meta-Analysis*. Academic Press, Orlando, FL.
- *Helm, M.M. (1991). The Relationship of Participation in Extracurricular Activities to Self-Concept and Achievements among Students in Junior High Schools in FayetteCounty, Kentucky (Doctoral dissertation, University of Kentucky, 1990). *Dissertation Abstracts International*, 51: 2216.
- Hinkle, D.E., Wiersma, W., & Jurs, S.G. (1998). *Applied Statistics for the Behavioral Sciences* (4th ed.). Houghton-Mifflin, Boston, MA.
- Hodgkinson, V.A., & Weitzman, M.S. (1990). *Volunteering and Giving among American Teenagers 14 to 17 Years of Age. Findings from a National Survey*. Ford Foundation, New York. (ERIC Document Reproduction Service No. ED330923.)
- Holland, A., & Andre, T. (1987). Participation in extracurricular activities in secondary school: What is known, what needs to be known? *Review of Educational Research*, 57: 437-66.
- *Holland, A., & Andre, T. (1994). The relationship of self esteem to selected personal and environmental resources of adolescents. *Adolescence*, 29: 345-360.
- Holloway, J.H. (1999). *Extracurricular Activities: The Path to Academic Success?* Educational Leadership, 57. [Online]. Retrieved November 29, 1999, from <http://www.ascd.org/readingroom/edlead/9912/holloway.html>.

- Hostetler, M., & Fisher, K. (1997). Project C.A.R.E. substance abuse prevention program for high-risk youth: A longitudinal evaluation of program effectiveness. *Journal of Community Psychology, 25*: 397-419.
- *Hunt, H.D. (1996). Extracurricular Activities, Academic Outcomes, and Life Chances. (Doctoral dissertation, University of Illinois at Urbana, 1996). *Dissertation Abstracts International, 57*: 3452A.
- Hunter, J.E., & Schmidt, F.L. (1990). *Methods of Meta-Analysis*. Sage, Newbury Park, CA.
- *Jenkins, J.E. (1996). The influence of peer affiliation and student activities on adolescent drug involvement. *Adolescence, 31*: 297-306.
- Joint Center for Political and Economic Studies. (1997). *Factsheets* [Online]. Retrieved August 21, 2001, from <http://www.jointctr.org/factshts.htm>.
- Kablaoui, B. N., & Pautler, A. J. (1991). The effects of part-time work experience on high school students. *Journal of Career Development, 17*: 195-211.
- *Kellermann, W. (1998). The Academic and Social impact of Nontraditional Education Programs on Students with Learning Disabilities. (Doctoral dissertation, Saint Louis University, 1998). *Dissertation Abstracts International, 59*: 4055.
- Kinney, D.A. (1993). From nerds to normals: The recovery of identity among adolescents from middle school to high school. *Sociology of Education, 66*: 21-40.
- Kunjufu, J. (1982). *Countering the Conspiracy to Destroy Black Boys*. New York: African American Images.
- *Lisella, L.C., & Serwatka, T.S. (1996). Extracurricular participation and academic achievement in minority students in urban schools. *The Urban Review, 28*: 63-80.
- *Littell, J.H. (1992). *Long-Term Effects of Adolescents' Participation in Extracurricular and Community-Based Activities*. Unpublished doctoral dissertation, University of Chicago.
- Love-Clark, P. (1984). A Meta-Analysis of the Effects of Divorce on Children's Adjustment. (Doctoral dissertation, Texas A&M University, 1984). *Dissertation Abstracts International, 45*: 2807.
- *Mahoney, J. L., & Cairns, R. B. (1997). Do extracurricular activities protect against early school dropout? *Developmental Psychology, 33*: 241-253.
- Mahoney, J.L., & Stattin, H. (2000). Leisure activities and adolescent antisocial behavior: The role of structure and social context. *Journal of Adolescence, 23*:

113-127.

- *Marsh, H. (1991). Employment during high school: Character building or a subversion of academic goals? *Sociology of Education*, 64: 172-89.
- *Marsh, H. (1992). Extracurricular activities: Beneficial extension of the traditional curriculum or subversion of academic goals? *Journal of Educational Psychology*, 84: 553-562.
- Maxwell, J.C., & Liu, L.Y. (1998). *Texas School Survey of Substance Use among Students: Grades 7-12*. Texas State Commission on Alcohol and Drug Abuse, Austin, TX. (ERIC Document Reproduction Service No. ED429256.)
- McEwen, D. (1995, November). *Connecting Right and Left Brain: Increasing Academic Performance of African American Students through the Arts*. Paper presented at the Annual Meeting of the National Alliance of Black School Educators: Dallas, TX.
- McMillan, J., & Reed, D. (1993). *Defying the Odds: A Study of Resilient At-Risk Students*. Metropolitan Educational Research Consortium, Richmond, VA. (ERIC Document Reproduction Service No. ED389780.)
- McNamara, J.F. (1997). Meta-analysis: A strategy to improve integrative research reviews. *International Journal of Educational Reform*, 6: 490-495.
- McNamara, J.F., Morales, P., Kim, Y., McNamara, M. (1998). Conducting your first meta-analysis: An illustrative guide. *International Journal of Educational Reform*, 7: 380-397.
- *McNeal, R. (1995). Extracurricular activities and high school dropouts. *Sociology of Education*, 68: 62-81.
- McNeal, R. (1998). High school extracurricular activities: Closed structures and stratifying patterns of participation. *Journal of Educational Research*, 91: 183-190.
- *McNeal, R.B. (1999). Participation in high school extracurricular activities: Investigating school effects. *Social Science Quarterly*, 80: 291-309.
- Meichenbaum, D. H. & Deffenbacher, J.L. (1988). Stress inoculation training. *Counseling Psychologist*, 16: 69-90.
- Melnick, M.J., Sabo, D.F., & Vanfossen, B. (1992). Educational effects of interscholastic athletic participation on African-American and Hispanic youth. *Adolescence*, 27: 295-308.

- Mid-Atlantic Equity Consortium. (2000). *National Statistics on Education and Equity Issues, By Race and Ethnicity* [Online]. Retrieved August 14, 2000, from <http://www.maec.org/natstats.html>.
- Mihalic, S. W. & Elliott, D. (1997). Short- and long-term consequences of adolescent work. *Youth and Society*, 28: 464-498.
- *Miller, J.P. (1991). Four-H and Non-4-H Participants' Development of Competency, Coping, and Contributory Life Skills. (Doctoral dissertation, Pennsylvania State University, 1991). *Dissertation Abstracts International*, 52: 1614.
- * Miller, K.E., Sabo, D.F., Farrell, M.P., Barnes, G.M., & Melnick, M.J. (1998). Athletic participation and sexual behavior in adolescents: The different worlds of boys and girls. *Journal of Health and Social Behavior*, 39: 108-123.
- Missouri Department of Elementary and Secondary Education. (1997). *Raising the Bar-Closing the Gap. Recommendations for Improving the Academic Achievement of African-American Students in Missouri*. Jefferson City, MO. (ERIC Document Reproduction Service No. ED422421.)
- Murphy, L., & Moriarity, A. (1976). *Vulnerability, Coping, and Growth from Infancy to Adolescence*. Yale University Press, New Haven, CT, pp. 286-291.
- National Association of School Boards of Education. (1999). *No Pass, no Play: Eligibility Requirements for Extracurricular Activities*. In Policy Update, 7. [Online]. Retrieved November 29, 1999, from <http://www.nasbe.org/healthyschools/nopass.html>.
- Nettles, S.M. (1991). Community contributions to school outcomes of African American students. *Education and Urban Society*, 24: 132-147.
- *Newton, C.C. (1992). Activity Participation during High School: Influences of Involvement on Outcomes (Doctoral dissertation, University of Nebraska, Lincoln, 1992). *Dissertation Abstracts International*, 52: 2493.
- O'Donnell, C.R. (1992). The interplay of theory and practice in delinquency prevention: From behavior modification to activity settings. In McCord, J. & Tremblay, R.E. (Eds.), *Preventing Antisocial Behavior: Interventions from Birth through Adolescence*. Guilford, New York, pp. 209-232.
- *Olson, R.A. (1990). Relationships of Student Behaviors with Class Percentile Rank of Iowa High School Seniors. (Doctoral dissertation, Drake University, 1990). *Dissertation Abstracts International*, 50: 1881-1882.
- Orwin, R.G. (1994). Evaluating coding decisions. In Cooper, H.M & Hedges, L.V. (Eds.), *The Handbook of Research Synthesis*. Sage Foundation, New York, pp.

140-162.

- Otto, L.B. (1976). Extracurricular activities and aspirations in the status attainment process. *Rural Sociology*, 41: 217-233.
- *Perkins, D.F. (1996). An Examination of the Organismic, Behavioral, and Contextual Covariates of Risk Behaviors among Diverse Groups of Adolescents. (Doctoral dissertation, Michigan State University, 1996.) *Dissertation Abstracts International*, 57: 878.
- *Ramirez-Valles, J., Zimmerman, M.A., & Newcomb, M.D. (1998). Sexual risk behavior among youth: Modeling the influenced of pro-social activities and socioeconomic factors. *Journal of Health and Social Behavior*, 39: 237-253.
- Raudenbush, S.W. (1994). Random effects model. In Cooper, H.M & Hedges, L.V. (Eds.), *The Handbook of Research Synthesis*. Sage Foundation, New York, pp. 301-322.
- Reis, S.M., Hebert, T.P., Diaz, E.I., Maxfield, L.R., & Ratley, M.E. (1995). *Case Studies of Talented Students who Achieve and Underachieve in an Urban High School*. National Research Center on the Gifted and Talented: Storrs, CT. (ERIC Document Reproduction Service No. ED414687.)
- Reynolds, R.K., & Karr-Kidwell, P.J. (1996). *A Literary Review and a Plan for Principals: Extracurricular Activities, Academic Achievement, and Secondary Students' Success*. (ERIC Document Reproduction Service No. ED397475.)
- *Robinson, E.L. (1999). The Effects of School Sport Participation on Aggression: Building a Knowledge Base for School Psychologists. (Doctoral dissertation, University of Kansas, 1999). *Dissertation Abstracts International*, 59: 3353.
- Rodney, L. W., Rodney, H. E., & Mupier, R.M. (1999). Variables contributing to grade retention among African American adolescent males. *Journal of Educational Research*, 92: 185-90.
- Rogus, J.F., & Wildenhaus, C. (1991). Programming for at-risk learners: A preventive approach. *NASSP Bulletin*, 75: 1-7.
- Rosenthal, R. (1994). Parametric measures of effect size. In Cooper, H.M & Hedges, L.V. (Eds.), *The Handbook of Research Synthesis*. Sage Foundation, New York, pp. 231-244.
- *Royse, D. (1998). Scouting and Girl Scout curriculum as interventions: Effects on adolescent self esteem. *Adolescence*, 33: 159-168.
- Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry*, 57: 316-331.

- Rutter, M. (1988). Stress, coping, and development: Some issues and some questions. In Garmezy, N. & Rutter, M. (Eds.). *Stress, Coping, and Development in Children*. McGraw-Hill, New York, pp. 1-41.
- Sandstrom, M.J., & Coie, J.D. (1999). A developmental perspective on peer rejections: Mechanisms of stability and change. *Child Development*, 70: 955-966.
- Schmidt, F. (1996). Statistical significance testing and cumulative knowledge in psychology: Implications for the training of researchers. *Psychological Methods*, 1: 115-129.
- Scott, D. (2001). *Social Competence*. Evaluating the National Outcomes: Youth [Online]. Retrieved August 19, 2001, from http://ag.arizona.edu/fcs/cyfernet/nowg/social_comp.html.
- Shadish, W.R., & Haddock, C.K. (1994). Combining estimates of effect size. In Cooper, H.M & Hedges, L.V. (Eds.), *The Handbook of Research Synthesis*. Sage Foundation, New York, pp. 261-282.
- Shann, M.H. (2001). Students' use of time outside of school: A case for after school programs for urban middle school youth. *The Urban Review*, 33: 339-356.
- *Shaw, S.M., Kleiber, D.A., & Caldwell, L.L. (1995). Leisure and identity formation in male and female adolescents: A preliminary examination. *Journal of Leisure Research*, 27: 245-263.
- Silliker, S., & Quirk, J. (1997). The effect of extracurricular activity participation on the academic performance of male and female high students. *School Counselor*, 44: 288-293.
- *Singh, K. (1998). Part time employment in high school and its effect on academic achievement. *Journal of Educational Research*, 91: 131-139.
- Snyder, E.E., & Spreitzer, E. (1992). Social psychological concomitants of adolescents' role identities as scholars and athletes. *Youth and Society*, 23: 507-522.
- Snyder, P., & Lawson, S. (1993). Evaluating results using corrected and uncorrected effect size estimates. *Journal of Experimental Education*, 61: 334-349.
- Spady, W.G. (1970). Lament for the letterman: Effects of peer status and extracurricular activities on goals and achievement. *American Journal of Sociology*, 75: 680-702.
- *Steitz, J.A., & Owen, T.P. (1992). School activities and work: Effects on adolescent self esteem. *Adolescence*, 27: 37-50.

- Stock, W.A. (1994). Systematic coding for research synthesis. In Cooper, H.M & Hedges, L.V. (Eds.), *The Handbook of Research Synthesis*. Sage Foundation, New York, pp. 126-138.
- *Tashman, N.A., Weist, M.D., Nabors, L.A., & Shafer, M.E. (1998). Involvement in meaningful activities and self reported aggression and delinquency among inner city teenagers. *Journal of Clinical Psychology in Medical Settings*, 5: 239-248.
- Taylor, A.R. (1991). Social competence and early school transition: Risk and protective factors for African American children. *Education and Urban Society*, 24: 15-26.
- Thomas, W.B., & Moran, K.J. (1991). The stratification of school knowledge through extracurricular activities in an urban high school. *Urban Education*, 26: 285-300.
- Vaughn, S.R. & Haager, D. (1994). Social competence as a multifaceted construct: How do students with learning disabilities fare? *Learning Disability Quarterly*, 17: 253-266.
- Warren, J.R. (2002). Reconsidering the relationship between student employment and academic outcomes: A new theory and better data. *Youth and Society*, 33: 366-393.
- Wentzel, K. R. (1991). Relations between social competence and academic achievement in early adolescence. *Child Development*, 62: 1066-1078.
- Werner, E.E., & Smith, R.S. (1982). *Vulnerable but Invincible: A Longitudinal Study of Resilient Children and Youth*. McGraw-Hill, New York, pp. 83-105.
- Wigfield, A., Eccles, J., MacIver, D., Reuman, D., & Midgley, C. (1991). Transitions during early adolescence: Changes in children's domain-specific self-perceptions and general self-esteem across the transition to junior high school. *Developmental Psychology*, 27: 552-565.
- Winfield, L.F. (1991). Resilience, schooling and development in African American youth: A conceptual framework. *Education and Urban Society*, 24: 5-14.
- Wolf, F.M. (1986). *Meta-Analysis: Quantitative Methods for Research Synthesis*. Quantitative Applications in the Social Sciences, Vol. 59. Sage, Beverly Hills, CA.
- *Wu, S. (1992). *The Relationship of Extracurricular Activities to Academic Achievement and Educational Expectations of Adolescents: A Cross-National Comparison*. Unpublished doctoral dissertation, University of Illinois at Urbana-Champaign, 1992.
- Young, B.N., Helton, C., & Whitley, M.E. (1997, November). *Impact of School-Related,*

- Community-Based, and Parental-Involvement Activities on Achievement of At-Risk Youth in the High School Setting*. Paper presented at the Annual Meeting of the Mid-South Educational Research Association, Memphis, TN. (ERIC Document Reproduction Service No. ED414533.)
- Youniss, J., McLellan, J.A., & Mazer, B. (2001). Voluntary service, peer group orientation, and civic engagement. *Journal of Adolescent Research*, 16: 456-468.
- Yu, C.H. (2000). *Meta-Analysis and Effect Size* [Online]. Retrieved August 15, 2000 from <http://seamonkey.ed.asu.edu/~alex/teaching/WBI/es.html>.
- Zaff, J.F., & Hair, E.C. (2003). Positive development of the self: Self-concept, self-esteem, and identity. In M.H. Bornstein, L. Davidson, C.L.M. Keyes, & K. Moore (Eds.), *Well-Being: Positive Development Across the Life Course*. Erlbaum, Mahwah, NJ, pp. 235-251.
- Zakzanis, K.K. (2001). Statistics to tell the truth, the whole truth, and nothing but the truth: formulae, illustrative numerical examples, and heuristic interpretation of effect size analyses for neuropsychological researchers. *Archives of Clinical Neuropsychology*, 16: 653-667.

APPENDIX A

EFFECT SIZES TABLES FROM ALL COLLECTED STUDIES

Table A1 - Mean Effects Sizes and Standard Deviations for Meta-Analyzed Samples of General Activities, Sports, and Student Work/Vocational Activity Studies

Data Element / Cluster	General Activities		Sports		Work/Vocational	
	d	N	d	N	d	N
Academic Achievement	.47	10	.10	5	(-).01	8
Engagement Behaviors	.33	8	.22	9	.07	4
Risk Behaviors	(-).36	12	(-).21	12	.29	4
Identity Formation	.32	12	.28	8	.35	4

Note: d: Cohen's d effect size, SD: standard deviation, N: Number of primary studies contributing to the cluster summary effect

APPENDIX B

EFFECT SIZES TABLES EXCLUDING OUTLYING STUDIES

Table B1 - Corrected Mean Effect Sizes and Standard Deviations for Meta-Analyzed Samples of General Activities and Sports Studies

Extracurricular Activity	Academic Achievement		Engagement		Risk Behaviors		Identity Formation					
	<i>d</i>	SD	<i>N</i>	<i>d</i>	SD	<i>N</i>	<i>d</i>	SD	<i>N</i>			
General Activities	.47	.23	10	.33	.39	8	(-.29)	.20	11	.23	.31	11
Sports	.10	.13	5	.14	.16	8	(-.16)	.19	11	.15	.28	7

Note: *d*: Cohen's *d* effect size, SD: standard deviation. *N*: Number of primary studies contributing to the cluster summary effect. Corrected cluster effects are in bold print.

APPENDIX C

EFFECT SIZES TABLES FROM ALL LONGITUDINAL STUDIES

Table C1 - Mean Effects Sizes Based on Studies using Longitudinal Data – General Activities, Sport, and Student Work/ Vocational Education Activities

Data Element / Cluster	General Activities		Sports		Work/Vocational	
	<i>d</i>	<i>N</i>	<i>d</i>	<i>N</i>	<i>d</i>	<i>N</i>
Academic Achievement	.47	10	.13	4	.03	4
Engagement Behaviors	.31	4	.16	7	(-).12	1
Risk Behaviors	(-).24	5	(-).17	7	.13	2
Identity Formation	.16	4	.23	6	.05	2

Note: *d*: Cohen's *d* effect size, *SD*: standard deviation, *N*: Number of primary studies contributing to the cluster summary effect

Table C2 - Mean Effects Sizes Based on Studies using Longitudinal Data – Fine Arts, Pro-Social, and Community-Based Activities

Data Element / Cluster	Fine Arts			Pro-Social			Community-Based		
	d	SD	N	d	SD	N	d	SD	N
Academic Achievement	.22	.15	6	.24	.12	4	.17	.17	2
Engagement Behaviors	.22	.09	5	.26	.30	5	.01	.06	2
Risk Behaviors	(-).20	.12	5	(-).20	.17	5	(-).21	.00	1
Identity Formation	(-).04	.09	2	.13	.04	2	.00	.00	1

Note: d : Cohen's d effect size, SD: standard deviation, N: Number of primary studies contributing to the cluster summary effect

VITA

Charla Patrice Lewis
 1806 Bolton St., Apt. 1
 Baltimore, MD 21217
 Home: (410) 225-7995
 Email: cplewis03@hotmail.com

Educational Preparation

Doctor of Philosophy, Educational Psychology, Texas A&M University
 Degree Conferred: August 2004.
 Major Area of Study: School Psychology

Bachelor of Arts, College of Liberal Arts, The University of Texas at Austin
 Degree Conferred: December 1996.
 Major Area of Study: Psychology; Minor Area of Study: Social Work

Professional Experience

August 2004- Present

Post-Doctoral Fellow

Center for School Mental Health Assistance
 University of Maryland Baltimore, School
 of Medicine, Baltimore, MD.

July 2003- July 2004

*School-Based Mental Health Clinician &
 Technical Assistance Consultant*

Center for School Mental Health Assistance,
 University of Maryland Baltimore School of
 Medicine, Baltimore, MD.

June 2002-July 2003

Clinical Child Psychology Intern

University of Maryland-Baltimore School of
 Medicine, Psychiatry Department and
 University of Maryland Medical System,
 Baltimore, MD.

August 1997-June 2002

*Research and Teaching Assistant; School
 Psychology Doctoral Student*

Texas A&M University, College Station, Texas.

November 1996-June 1997

Youth Activity Supervisor

Texas Youth Commission, Marlin, Texas.