Variations in Activity Involvement:
How Breadth, Commitment, and Depth Predict Adjustment

by

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Abstract

The present study examined the independent and shared contributions of three dimensions of organized activity involvement (breadth, commitment, and depth) in relation to four adjustment outcomes (academic competence, social competence, internalizing problems, and externalizing problems). Interactions between activity involvement and concurrent adjustment indices were also tested as predictors of subsequent outcomes. Participants were drawn from The Child Development Project (N = 585). The present sample included 431 adolescents who provided data when they were in seventh grade. Ninety-two percent and 87% of the sample responded to follow-up questionnaires in eighth and ninth grades, respectively. Adolescents self-reported activity involvement (seventh grade) and internalizing problems (seventh and ninth grade); parents reported on externalizing problems (seventh and eighth grade); teachers reported on social competence (seventh and eighth grade); school records were obtained to measure academic competence (seventh and eighth grade). Multivariate regression results testing the independent contributions of dimensions of activity involvement revealed that commitment was negatively associated with internalizing problems cross-sectionally, and depth predicted greater academic competence longitudinally. A latent factor of activity involvement indicated by breadth, depth, and commitment fit the data well. Structural equation models showed that the activity involvement latent variable was associated with social competence ($\beta = 0.17$) and internalizing problems ($\beta = -0.15$) in cross-sectional analyses. Longitudinally, activity involvement predicted lower internalizing problems ($\beta = -0.11$). An interaction between activity involvement and concurrent externalizing problems revealed that higher levels of activity involvement in seventh grade predicted

lower levels of externalizing problems in eighth grade at lower levels of externalizing problems in seventh grade. On the other hand, higher activity involvement in seventh grade predicted higher levels of externalizing problems in eighth grade at higher levels of externalizing problems in seventh grade. Activity involvement may be a useful intervention target in efforts to reduce internalizing problems. It is less clear on how activity involvement may protect or amplify risk for externalizing problems.

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Table of Contents

List of Tables

List of Figures

1. Introduction and Literature Review

Youth encounter opportunities to develop positive relationships, skills, and identity at home, in the community, and at school (Erikson, 1968; Hartup, 1989). Although family is the primary source of relationships during childhood, early adolescents spend increasing amounts of time with peers (Larson & Verma, 1999). Organized activity involvement (i.e., adult-led extracurricular activities) provides youth with supportive adults and prosocial peers in a structured setting (Dworkin, Larson, & Hansen, 2003; Eccles & Barber, 1999; Kinney, 1993; Larson, 2006). Additionally, organized activities provide opportunities for skill development (Jones & Offord, 1989; Mahoney, 2000) and self-esteem enhancement (Hansen, Larson, & Dworkin, 2003). Thus, activity involvement is a salient context for youth to develop identity, esteem, skills, and positive relationships in a generally prosocial environment (Eccles & Barber, 1999).

The ways in which youth spend their free time varies and shifts during early adolescence (Larson & Richards, 1991). Youth may spend time with their family, hanging out with friends, or participating in personal interests (e.g., television, videogames) or organized activities. Across the fifth through ninth grade years, adolescents spend less time with their families (Larson & Richards, 1991) and approximately 50% of their time outside of the school context (Larson & Verma, 1999). Up to 75% of adolescents report participation in organized activities such as sports, student government, or band (Feldman & Matjasko, 2005; Mahoney, Schweder, & Stattin, 2002). Of those youth who are involved in organized activities, they report participating in two to four organized activities for about five hours per week on average

(Fredricks, 2012). Although involvement in organized activities is common, youth participation varies widely (e.g., amount of time spent, number of activities, type of activities, engagement in activities).

Ample evidence suggests that activity involvement promotes positive adjustment and prevents negative adjustment for youth. For example, activity involvement predicts higher levels of academic adjustment including academic orientation (Busseri, Rose-Krasnor, Willoughby, & Chalmers, 2006), grades (Fredericks & Eccles, 2010), and school liking (Badura et al., 2016). Additionally, activity involvement predicts lower levels of internalizing problems (Fredricks & Eccles, 2010; Fredricks & Eccles, 2005; Randall & Bohnert, 2009), externalizing problems (Busseri et al., 2006), and risky behaviors (Fredricks & Eccles, 2010). In the social domain, activity involvement is associated with lower levels of social difficulties including peer victimization (Peguero, 2008) as well as higher levels of social functioning (Busseri et al., 2006). Finally, activity involvement has been associated with higher levels of well-being (Leversen, Danielsen, Birkeland, & Samdal, 2012), happiness (Holder, Coleman, & Sehn, 2009), self-esteem (Kort-Butler & Hagewen, 2011), and civic engagement (Fredricks & Eccles, 2010).

However, the associations between activity involvement and adjustment indices vary based on how activity involvement is measured (Bohnert, Fredricks, & Randall, 2010; Rose-Krasnor, Busseri, Willoughby, & Chalmers, 2006). Activity involvement is often measured in several ways, three of which are included in the present study: breadth, commitment, and depth. Breadth refers to how extensively youth are involved, or number of activities (Bohnert et al., 2010). Commitment pertains to satisfaction with activities as well as motivation to continue to participate (e.g., Fredricks et al., 2002; Ramey et al.,

2015). Depth refers to how intensively youth are involved, or time spent in activities (Fredricks & Eccles, 2006).

While involvement in organized activities is a key developmental context (Lerner, 2005), few studies have examined unique contributions of multiple dimensions of activity involvement to adjustment (Fredricks, 2012; Lynch et al., 2016). No prior research has examined the unique contributions of breadth, commitment, and depth to adjustment in early adolescence. Furthermore, the shared contribution of these dimensions of activity involvement to adjustment is understudied (Bohnert et al., 2010). A better understanding of the shared and distinct roles of dimensions of activity involvement would be especially helpful to inform future research as well as prevention and intervention efforts.

It is possible that activity involvement promotes positive adjustment primarily for youth in the context of risk. Adjustment indices tend to be relatively stable over time for adolescents (e.g., social competence, Bornstein, Hahn, & Haynes, 2010; academic performance, Gottfried, Fleming, & Gottfried, 2001; internalizing problems and externalizing problems, Reitz, Deković, & Meijer, 2005), which indicates youth at highest risk are likely to continue facing difficulties. However, recent research has found that dimensions of organized activity involvement may interact with earlier levels of risk to protect youth against maladjustment (i.e., remediate risk). For example, depth and commitment attenuated associations between peer victimization and psychosocial maladjustment (Driessens, 2015; McConnell & Erath, 2018). On the other hand, limited evidence has found that activity involvement may interact with earlier level of risk to enhance adjustment for low risk youth (i.e., capitalize on advantages). For example,

participation in church groups was only protective against substance use in nonviolent neighborhoods (Fauth, Roth, & Brooks-Gunn, 2007).

Earlier level of risk may moderate the association between activity involvement and adjustment in one of two ways: remediation or capitalization. Activity involvement could be considered a remediating influence if the association between activity involvement and better adjustment were stronger for youth at elevated risk (i.e., activity involvement remediates risk; Luthar, 1993; Mahoney & Cairns, 1997). Alternatively, activity involvement could be considered a capitalizing influence if the association between activity involvement and better adjustment were stronger for youth with lower levels of risk (i.e., activity involvement capitalizes on competence or advantages; Luthar, 1993). Remediation effects would be especially applicable to intervention efforts to improve adjustment for vulnerable youth.

The present study elucidates the shared (using latent variable structural equation modeling) and unique (using simultaneous-entry regression) contributions of (1) breadth, (2) commitment, and (3) depth to academic competence, social competence, internalizing problems, and externalizing problems during early adolescence. Analyses were conducted cross-sectionally and longitudinally, and important selection factors were controlled (i.e., earlier level of adjustment variable in longitudinal models, social competence, and SES). In addition, capitalization and remediation effects of activity involvement were tested. That is, we examined whether activity involvement more strongly predicts later adjustment outcomes when earlier levels of adjustment indicate higher or lower risk.

Developmental Context of Early Adolescence

Early adolescence is characterized by a conflict between biological maturity and social maturity (Moffitt, 1993). Early adolescents undergo puberty which involves increases in circulating hormones (e.g., androgens, gonadotropins) and changes in physical appearance (Brooks-Gunn & Petersen, 1984; Sizonenko, 1978). Early adolescents also experience improvements in cognitive ability and reasoning (Skinner & Zimmer-Gembeck, 2007; Steinberg, 2005). These biological and cognitive changes contribute to adolescents' desire for independence (Hill & Holmbeck, 1986), yet they are often not afforded the level of freedom that feels commensurate with their maturity (Spear & Kulbok, 2004). This conflict between biological maturity and independence may lead to frustration and striving for greater autonomy. One prosocial context through which youth may attain some independence is activity involvement (Eccles, Barber, Stone, & Hunt, 2003; Kleiber & Kirshnit, 1991).

In addition to biological and cognitive changes, early adolescents also face several important developmental tasks and possible challenges. They are expected to achieve academically, develop closer peer relationships, and comply with rules and heightened maturity demands (Masten & Coatsworth, 1998). However, during this developmental period, youth report decreases in self-esteem, increases in self-consciousness, and perceptions of peers viewing them negatively (Robins, Trzesniewski, Tracy, Gosling, & Potter, 2002; Simmons, Rosenberg, & Rosenberg, 1973; Somerville, 2013). Early adolescents also report increases in depressive symptoms and anxiety (Petersen et al., 1993), higher levels of peer victimization (Nansel et al., 2001), and declines in academic performance, school engagement, and attendance (Rudolph, Lambert, Clark, & Kurlakowsky, 2001).

Despite these developmental challenges, many early adolescents find life exciting and enjoy exploration of identities, making friends, and engaging with school (Roeser, Eccles, & Sameroff, 2000). Through participation in organized activities, early adolescents may overcome the challenges they face and meet developmental demands. Studies suggest activity involvement can promote identity exploration, provide opportunities to develop positive relationships with peers and adults, and facilitate skill development (Dworkin et al., 2003; Shaw, Kleiber, & Caldwell, 1995).

Guiding Theoretical Perspectives

The potential importance of activity involvement may be understood through a positive youth development lens, a strengths-based view of development (Lerner, 2007; Lerner et al., 2005; Mahoney, Harris, & Eccles, 2006). According to the positive youth development perspective, risky behaviors are discouraged while strengths (e.g., academic and social competence) and well-being are promoted through the "5 Cs:" competence, confidence, connection, character, and caring. Greater participation (e.g., amount of time, number of activities, continued participation, and engagement with activities) is viewed as advantageous for youth (Lerner, 2005). *Competence* may be accomplished through the skill development opportunities available in many organized activities (Shaw et al., 1995). Youth report that organized activities provide higher rates of learning experiences than hanging out with friends or academic classes (Hansen et al., 2003). Participation in organized activities, such as sports, often involves mastering skills to improve athletic performance as well as teamwork skills (Hansen et al., 2003). Organized activities also provide opportunities for youth to build *confidence*, as they develop self-efficacy within activities (Noack, Kauper, Benbow, & Eckstein, 2013). Furthermore, *character* may be

strengthened in organized activities through appreciation of rules and fairness within activities as well as society more broadly (Lerner et al., 2005). *Connection* and *caring* may flourish through organized activity participation because activities provide opportunities to form ties with peers in the community or school setting, often involve teamwork or group participation, and are led by trusted adults or mentors with whom youth develop relationships (Dworkin et al., 2003; Hansen et al., 2003).

Although activity involvement is generally viewed as advantageous (Lerner et al., 2005), specific dimensions of activity involvement (i.e., breadth and commitment) may be salient beyond other dimensions (i.e., depth). During adolescence youth face an "identity crisis" in which they must balance their interests from childhood with their current needs as well as future goals and demands from the larger society (Erikson, 1968). Erikson identified two key processes for identity development: exploration and commitment (Erikson, 1968). Although exploration is typically thought to precede commitment, commitment may occur prematurely or not at all. Based on Erikson's theory, four stages of identity development were proposed (Marcia, 1966). The first stage is identity diffusion, in which youth have not explored or committed to interests. The next two stages involve exploration without commitment (i.e., identity moratorium) and commitment without exploration (i.e., identity foreclosure). Finally, when youth reach identity achievement, they have both explored and committed (Marcia, 1966).

The process of identity development underscores the potential importance of breadth and commitment dimensions of organized activity involvement. First, breadth is an important component of identity development because breadth of participation allows youth to "try on" or explore different identities (Eccles et al., 1993; Hansen et al., 2003;

Mahoney, Larson, & Eccles, 2005; Marcia, 1966; Shanahan & Flaherty, 2001). Youth are also able to develop a broader set of skills by participating in many types of activities (Mahoney et al., 2005). Additionally, if youth find they do not like or excel in a particular activity, they are better equipped to remain involved in at least one activity due to their broad involvement (Iso-Ahola, 1980). Youth may also have an easier time finding the activities to which they want to commit if they explore many activities (Busseri et al., 2006; Erikson, 1968).

Organized activity commitment is defined as meaningful and continued involvement (e.g., enjoyment, concentration, interest; Ramey et al., 2015). Adolescents may view activities to which they are committed as higher quality (Shernoff, 2010) or part of their self-identity (Palen & Coatesworth, 2007). Furthermore, commitment may reflect achievement status of identity development as youth may consider the activity as part of their sense of self or find purpose from participation (Hill, Burrow, & Sumner, 2013; Marcia, 1966). In turn, commitment contributes to higher levels of competence and lower levels of psychological difficulties (e.g., Meeus, van de Schoot, Keijsers, & Branje, 2012). Consequently, greater breadth, which reflects exploration (Erikson, 1968; Marcia, 1966), and commitment, which reflects identity achievement (Marcia, 1966), may be each uniquely associated with higher levels of general functioning in academic, social, behavioral, and psychological domains (e.g., Busseri et al., 2006; Mahoney et al., 2002; Table 1).

Despite the research attention devoted to depth of participation, or time spent in activities, its contributions to adjustment beyond breadth and commitment are less clear. Adolescents spend approximately half their time in leisure activities (Larson & Verma,

1999). Greater depth of organized activity involvement limits exposure to unstructured, unsupervised peer contact by reducing the amount of time available to spend on other leisure activities (Fitzgerald, Joseph, Hayes, & O'Regan, 1995; Kleiber, Larson, & Csikszentmihayli, 1986; Mahoney et al., 2005; Pettit, Bates, Dodge, & Meece, 1999). Youth with more unstructured peer contact have higher levels of antisocial peer affiliations, which have been associated with antisocial behaviors (Mahoney & Stattin, 2000). Thus, as an alternative to unstructured activity, depth of activity involvement may prevent negative outcomes. However, time in activities alone may afford modest, if any, benefits, and depth is often conceptualized as a reflection of commitment or intense participation in an activity (Rose-Krasnor et al., 2006). The inclusion of a measure of commitment in the present study was expected to account for the ostensible benefits of depth.

Methodological Considerations

An important methodological consideration is whether breadth, commitment, and depth should be examined collectively or independently. Measures of dimensions of activity involvement can serve as indicators of a latent activity involvement construct in a collective approach (Bohnert et al., 2010; Bohnert, Kane, & Garber, 2008; Busseri & Rose-Krasnor, 2010). Latent variables capture the shared variance across multiple measures without the error or distortion in each measure, and thereby provide robust assessment of constructs. The conceptual implication of the latent variable approach is that dimensions of activity involvement may be important insofar as they are related. For example, the significant aspect of depth may be the aspect that is related to commitment and breadth.

Another possibility is that dimensions of activity involvement contribute independently to developmental outcomes. Some confirmatory factor analysis models and conceptualizations suggest that breadth and depth are unique measures with independent significance (Powell, Peet, & Peet, 2002; Rose-Krasnor et al., 2006). The present study will examine the shared and independent contributions of breadth, commitment, and depth to academic, social, and psychological outcomes in early adolescence.

Review of the Literature: Associations between Dimensions of Activity Involvement and Adjustment Indices

Academic Competence. In general, organized activity involvement has been associated with academic outcomes including grades, educational expectations, achievement, school belongingness, school commitment, and educational status (Badura et al., 2016; Denault & Poulin, 2009; Eccles et al., 2003; Fredricks & Eccles, 2010). One large longitudinal study of late high schoolers examined the association between breadth of school-based extracurricular activity involvement and academic adjustment over time (e.g., school belonging; Fredricks & Eccles, 2005). Results indicated that controlling for gender and parent education, greater breadth of self-reported participation in organized activities predicted higher levels of self-reported school belonging one year later. Another study found that depth of involvement in tenth grade was associated with higher levels of academic adjustment including math achievement, grades, and educational expectations in twelfth grade (Fredricks, 2012). Furthermore, this study examined the independent contributions of depth and breadth and found that breadth (total number of school-based activities youth were involved in) and depth (how much time per week spent on school-

based activities) predicted greater educational status two years post high school (Fredricks, 2012). Although little research has examined commitment specifically, one study assessed the association between engagement in after-school programs and academic performance for middle school students. Youth who reported higher levels of engagement with their after-school programs also reported better academic performance (Shernoff, 2010).

The current literature examining associations between breadth, commitment, and depth of organized activity involvement and academic adjustment is limited in many ways. Many of the studies specifically focus on school liking or belonging rather than academic performance. Thus, although studies may control for a possible selection variable, earlier level of academic achievement (Fredricks, 2012; Fredricks & Eccles, 2005), none of the present studies controlled for earlier levels of the outcome variable of interest. Utilizing models that control for earlier levels of academic competence when predicting subsequent academic competence is a strength of the current study. Additionally, many studies examining academic outcomes focus on high school-aged samples (e.g., Fredricks, 2012). High-quality studies with large samples are needed to further understand activity involvement in earlier adolescence. No research has examined the unique contributions of breadth, commitment, and depth to academic adjustment. We expected that breadth and commitment would uniquely contribute to academic adjustment. Depth was not expected to contribute uniquely to academic competence. We also expected that the activity involvement latent variable would predict higher levels of academic competence.

Social Competence. Organized activity involvement has also been linked with better social outcomes including higher levels of interpersonal functioning, lower levels of peer victimization, and increases in social competence (Busseri et al., 2006; Mahoney, Cairns, & Farmer, 2003; Randall & Bohnert, 2009; Zaff, Moore, Papillo, & Williams, 2003). A large study including over 7,000 participants in high school found that breadth of activity involvement was linked to higher levels of interpersonal functioning (e.g., attachment with parents, relationships with best friends, friend attachment, peer victimization, and support network size) over two years, accounting for earlier levels of interpersonal functioning as well as depth of involvement (Busseri et al., 2006; Rose-Krasnor et al., 2006). While breadth was linked with higher levels of interpersonal functioning, depth was not. Although there is limited research specifically studying the association between commitment to activities and social adjustment, Shernoff (2010; referenced above) also examined social competence as an outcome. Participation in after school programs was linked to self-reported social competence, and that link was mediated by engagement with the activity.

Social experiences and competencies are salient developmental domains of early adolescence, but the present body of literature examining specific dimensions of activity involvement focuses on later adolescence (e.g., Busseri et al., 2006; Shernoff, 2010). No studies have examined the unique contributions of breadth, commitment, and depth to social outcomes during early adolescence. When studies included breadth and depth of organized activity involvement as predictors of social functioning in one model, only breadth contributed to social functioning, controlling for earlier levels of social functioning (Busseri et al., 2006, Rose-Krasnor et al., 2006). Thus, we hypothesized that

higher levels of breadth and commitment would be associated with higher levels of social competence, but depth would not be associated with social competence. We also hypothesized that the activity involvement latent variable would predict higher levels of social competence.

Internalizing Problems. Activity involvement has been associated with lower levels of psychological difficulties such as depression, anxiety, and internalizing problems (Fauth et al., 2007; Fredricks & Eccles, 2010). In a large, ethnically diverse sample of adolescents in the final years of high school, higher breadth of activity involvement was associated with lower levels of internalizing behavior concurrently (Fredricks & Eccles, 2010). Adolescents who had higher levels of depth in organized activities reported lower levels of depression concurrently (Fredricks & Eccles, 2005; Gardner, Browning, & Brooks-Gunn, 2012). However, controlling for earlier levels of internalizing problems, two studies of high schoolers found that neither breadth nor depth was associated with internalizing problems (Bohnert & Garber, 2007; Darling, 2005). Although commitment to organized activities is an understudied area, psychological engagement in organized activities (e.g., cognitive, affective, and spiritual engagement) was concurrently associated with adolescent-perceived positive impact of the activity (Ramey et al., 2015).

Much of the present research examining breadth, commitment, and depth focuses on later adolescent samples (e.g., Bohnert & Garber, 2007; Fredricks & Eccles, 2010). Thus, research on the association between activity involvement and psychological adjustment in earlier adolescence is needed. As with the other adjustment indices, research examining the unique contributions of breadth, commitment, and depth

simultaneously to psychological outcomes has not been conducted. We hypothesized that higher levels of breadth and commitment would predict lower levels of internalizing problems. However, we did not expect an association between depth and internalizing problems. We also hypothesized that the activity involvement latent variable would predict lower levels of internalizing problems.

Externalizing Problems. Involvement in organized activities has generally been associated with lower levels of risky behaviors, externalizing problems, alcohol and drug use, and delinquency (Busseri et al., 2006; Rose-Krasnor et al., 2006), although some subtypes of activity involvement (e.g., sports; Eccles & Barber, 1999) have been linked with higher levels of alcohol use. A large longitudinal study of high schoolers indicated that breadth of activity involvement is linked to lower levels of risk behavior over time, accounting for earlier levels of risk behavior as well as depth of involvement (Busseri et al., 2006; Rose-Krasnor et al., 2006). Breadth has also been linked to lower levels of externalizing problems, alcohol use, and marijuana use (Fauth et al., 2007; Fredricks & Eccles, 2010). Another large longitudinal study indicated that depth of activity involvement is linked with lower levels of substance use (Darling, 2005). Identity experiences within organized activities (e.g., feeling the activity is part of who they are, having clear goals within the activity) have also been associated with lower levels of adolescent-reported delinquency (Palen & Coatsworth, 2007).

Few studies have examined specific dimensions of activity involvement as related to externalizing problems (Busseri et al., 2006; Rose-Krasnor et al., 2006), and no known studies have tested breadth, commitment, and depth as predictors of externalizing problems. In addition, much of the research studying associations between activity

involvement and behavioral adjustment has been conducted in high school aged samples; further research using earlier adolescent samples is needed. We hypothesized that higher levels of breadth and commitment to organized activities would predict lower levels of externalizing problems, while depth would not be associated with externalizing problems. We also hypothesized that the activity involvement latent variable would predict lower levels of externalizing problems.

Nonlinear Associations

Some studies provide evidence for nonlinear associations between activity involvement and developmental outcomes – a point of diminishing returns for activity involvement. Specifically, at extremely high levels of activity involvement, adjustment benefits either level off or begin to decrease (e.g., Randall & Bohnert, 2009). As a potential explanation for the risk of high activity involvement, the overscheduling hypothesis suggests that children spend too much time involved in organized activities (Noonan, 2001). Busy schedules spent participating in many organized activities are thought to create high levels of stress and take time away from families (Mahoney et al., 2006; Mahoney & Vest, 2012; Melman, Little, & Akin-Little 2008). Indeed, a negative curvilinear association has been found between both breadth and depth of activity involvement and depressive symptoms (Randall & Bohnert, 2009). In addition, a point of diminishing returns has been found for the association between breadth (at approximately five activities) and academic outcomes (Fredericks & Eccles, 2010; Knifsend & Graham, 2011). Importantly, however, most research testing the overscheduling hypothesis suggests that highly involved youth still benefit from participation, even if the benefits reach a point of levelling off or diminishing returns (Mahoney & Vest, 2012).

Uninvolved youth appear to face higher risk than heavily involved youth (Farb & Matjasko, 2012; Mahoney et al., 2006). In light of modest evidence for nonlinear associations in prior research, the present study explored nonlinear associations between breadth and depth of activity involvement and the developmental outcomes of interest.

Protective Role of Activity Involvement: Capitalization or Remediation?

Youth may develop the 5 "C's" and improve skills, experience esteem enhancement, and establish or strengthen relationships through participation in organized activities (Dworkin et al., 2003; Eccles & Barber, 1999; Lerner et al., 2005). However, there is likely variability in the effects of activity involvement such that some adolescents benefit more than others. Initial level of adjustment is one possible individual difference that may moderate the benefits of participation in organized activities. Several studies have provided evidence for interactive effects of activity involvement and individual characteristics or experiences (Driessens et al., 2015; Gardner et al., 2012; Mahoney, 2002, Mahoney & Cairns, 1997; McConnell & Erath, 2018).

Activity involvement may provide a protective-stabilizing effect (Luthar, 1993), such that involvement promotes higher levels of adjustment only for youth who are already well-adjusted in that area. We refer to this type of interaction as "capitalization." Capitalization would be supported if participating in organized activities requires some level of social competence or psychological adjustment to obtain benefits. For example, youth who lack social skills have difficulties developing friendships (Furman & Buhrmester, 1985); thus, they may not be able to take advantage of the relationship opportunities afforded through activity involvement.

On the other hand, activity involvement may offer a protective-enhancing effect (Luthar, 1993), such that involvement compensates for earlier difficulties. We refer to this type of interaction as "remediation." Remediation would be supported if participating in organized activities was especially helpful for youth with higher levels of risk. For example, youth with low levels of academic achievement may exhibit the greatest improvements in academic achievement if they participate in organized activities (Peck, Roeser, Zarrett, & Eccles, 2008). Based on guiding perspectives (Erikson, 1968; Lerner et al., 2005; Marcia, 1966), we suggest that organized activities provide a context to develop skills, promote relationships, and improve esteem. Consequently, youth who are less competent may accrue additional benefits from participation, such as supportive adult relationships, new peer relationships, and skill development opportunities that they are unable to obtain in alternative areas (Dworkin et al., 2003).

One context within which the potential protective functions of activity involvement have been examined is peer victimization. Peer victimization is a well-documented risk factor for higher levels of social difficulties (Hanish & Guerra, 2002; Storch, Brassard, & Masia-Warner, 2003), internalizing problems (Reijntjes, Kamphius, Prinzie, & Telch, 2010), externalizing problems (Reijntjes et al., 2011), and academic difficulties (Nakamoto & Schwartz, 2010). In one study, early adolescents who were committed to organized activities did not report elevated depressive symptoms despite their experiences of peer victimization, consistent with the remediation model (McConnell & Erath, 2018). Additionally, the association between peer victimization and both internalizing and behavioral problems was weaker for adolescents who participated in sports compared to adolescents who did not participate (Driessens et al., 2015).

Organized activities have also been studied as protective factors against difficult family experiences, which have been linked with higher levels of internalizing and externalizing problems (Gershoff, 2002; Reitz, Deković, & Meijer, 2006). For example, the association between a mother's transition off welfare and late adolescent delinquency was moderated by organized after-school activities, such that youth involved in organized activities were less delinquent (Mahatmya & Lohman, 2011). Organized activities also protected youth exposed to high levels of domestic violence against depressive symptoms, consistent with a remediation model (Gardner et al., 2012). Furthermore, organized activity participation has been associated with less depressed mood, and this finding was especially strong for adolescents with detached relationships with their parents (Mahoney, 2002).

A few studies have examined whether activity involvement predicts outcomes differently depending on initial level of risk in the outcome domain. For example, one study conducted by Mahoney and Cairns (1997) found that organized activity participation was associated with reduced risk for early school dropout, especially among adolescents with low social and academic competence. That is, early adolescents who were involved in organized activities were less likely to drop out of school despite their earlier level of risk for school dropout; there was no effect of organized activities for early adolescents with lower risk for dropout, consistent with the remediation model. Likewise, involved adolescents were less likely to be arrested as young adults, compared to similar adolescents who were not involved in school activities. This effect was strongest among adolescents at greatest risk for persistent antisocial behavior, consistent with the remediation model (Mahoney, 2000). In a study of heterotypic continuity of

problem behavior, the association between conduct disorder in adolescence and antisocial behavior in adulthood was weaker for youth who were involved in sports (Samek, Elkins, Keyes, Iacono, & McGue, 2015). Despite several studies indicating that activity involvement is protective, one study of adolescents found that breadth of activity involvement did not protect adolescents against earlier levels of internalizing or externalizing problems (Bohnert & Garber, 2007).

Based on guiding theoretical perspectives (Erikson, 1968; Lerner, 2005; Marcia 1966) and the present body of literature, we expected remediation effects for breadth and commitment on academic and social competence as well as internalizing and externalizing problems. We did not propose hypotheses regarding the interaction effects for depth of activity involvement. We also hypothesized that the activity involvement latent variable would moderate the associations between earlier level of risk and later outcomes in the same domain, consistent with remediation effects.

Selection Effects of Activity Involvement

The effects of activity involvement can be more clearly understood by controlling for variables that may contribute to activity involvement and outcomes of interest. The study of selection factors related to activity involvement generally has been limited to demographic variables (e.g., Fredricks & Eccles, 2005), with less attention to individual competencies (e.g., social or academic) or school-level factors that likely predict both extracurricular involvement and psychosocial outcomes (Mahoney et al., 2005; Farb & Matjasko, 2012). As such, the extent to which extracurricular involvement contributes to positive outcomes is unclear.

Some previous research on activity involvement included measures to account for selection effects. For example, one study included school (e.g., percent minority, student/teacher ratio, school mean SES), family (e.g., parental interest in school, parental involvement), and individual (e.g., ethnicity, GPA, peer dropout) selection factors to account for changes in alcohol use (Hoffman, 2006). The strength of the associations between participation in organized activities and change in alcohol use did not differ greatly based on selection factors (Hoffman, 2006). In another study, when controlling for individual, parent, peer, and school variables, participation in organized activities was related to academic achievement as well as prosocial behaviors in adulthood (Zaff et al., 2003). However, controlling for selection effects has, in some cases, reduced the magnitude of the association between activity involvement and adjustment (Darling, 2005).

The present study will control for socioeconomic status (SES) and social competence as well as earlier level of risk in the same domain as the outcome variable. Families with lower SES may have more difficulty paying for their children to participate in organized activities (Coleman, 1961). Indeed, research has indicated that measures of family stability, home environment, and SES are related to participation in organized activities (McHale, Crouter, & Tucker, 2001; White & Gager, 2007). Additionally, adolescents from families with lower SES have lower levels of academic competence (Goodman, Miller, & West-Olatunji, 2012), as well as higher levels of internalizing problems (Reiss, 2013) and greater externalizing problems (Bøe, Øverland, Lundervold, & Hysing, 2012). Thus, SES may contribute to a spurious association between activity involvement and adjustment outcomes if not controlled. In addition, early adolescents

who are more socially competent may be more likely to participate in organized activities because they have more friends (Humbert et al., 2006) and feel more comfortable in group activities. Social competence is also related to higher levels of academic competence and lower levels of internalizing problems (Henricsson & Rydell, 2006), as well as lower levels of externalizing problems (Bornstein et al., 2010). Thus, social competence is another important selection factor of interest. Finally, by controlling for earlier levels of the adjustment variable, models can account for the effects of initial adjustment on involvement and subsequent adjustment and provide a more conservative estimate of the associations between activity involvement and adolescent adjustment.

The Present Study

Adolescents spend increasing amounts of time in organized activities (Larson & Veerma, 1999) and a high percentage of youth participate in organized activities (Mahoney et al., 2002). Organized activity involvement has been extensively studied as a context to promote positive youth development and improve the lives of youth (Lerner, 2005). Activity involvement provides a context to develop the 5 "C's", explore identity, improve skills, and build relationships (Eccles & Barber, 1999; Hartup, 1989; Lerner, 2002; Lerner et al., 2006; Marcia, 1966). Activity involvement has been measured along a variety of dimensions (e.g., breadth, commitment, and depth), but a more precise understanding of the independent and shared contributions of dimensions of activity involvement is needed. Additionally, more rigorous tests of hypotheses that activity involvement may provide remediation benefits for youth with higher levels of risk are needed.

The aims of the present study were to test the associations linking breadth, commitment, and depth of activity involvement in seventh grade (collectively and independently) with adjustment outcomes concurrently as well as one year later (i.e., school-records of academic competence, teacher-reported social competence, and mother-reported externalizing problems) and two years later (i.e., self-reported internalizing problems). In all analyses, selection variables measured in seventh grade were controlled, including the earlier level of the outcome variable (in longitudinal models), SES, and social competence. Earlier levels of the outcome variables were also tested as moderators of the associations between the dimensions of activity involvement, or the activity involvement latent variable, and later adjustment.

We hypothesized that breadth, commitment, and the activity involvement latent variable would predict higher academic and social competence as well as lower internalizing and externalizing problems concurrently and longitudinally. We had no *a priori* hypotheses regarding depth. We expected that earlier levels of the outcome variables would moderate associations linking breadth, commitment, and the activity involvement latent variable with later levels of adjustment indices (academic and social competence, internalizing and externalizing problems). We expected that the associations between activity involvement and later adjustment indices would be stronger at higher levels of risk on the outcome variable in seventh grade, compared to lower levels of risk, consistent with remediation effects.

2. Method

Participants

Participants were drawn from the longitudinal Child Development Project (Pettit et al., 1999), which included two cohorts from the Nashville and Knoxville, TN and Bloomington, IN areas. The majority of participants (85%) were recruited at pre-registration for kindergarten during two consecutive years (1987 and 1988). The remaining participants were recruited at the schools' registration at the beginning of the school year or by phone or letter. Data collection began the summer before participating children began kindergarten and continued with yearly assessments.

The original sample of 585 participants included 52% males, 81% European Americans, and 17% African Americans. The Hollingshead (1975) index of social status indicated the sample was predominately middle class (M = 39.5, SD = 14.0), although a range of statuses was represented, including 9%, 17%, 25%, 33% and 16% in the five possible classes (from lowest to highest). The current research assessed the 431 participants (206 males, 363 European Americans, and 62 African Americans) who provided extracurricular data in seventh grade. In eighth grade, 395 of these participants were retained, and 374 participants were retained in ninth grade. Participants who were missing data on the extracurricular survey in seventh grade were slightly more likely to be male ($t(568) = 2.07$, $p = .04$; 41% female), White ($t(568) = -2.58$, $p = .01$; 74% White) and to have higher SES in kindergarten ($t(568) = 3.27$, $p = .001$; $d = 0.31$). Participants who were missing data in eighth or ninth grade did not significantly differ on any study variables in seventh grade.

Procedure

During the summer before children began kindergarten or early in the fall, mothers were interviewed in their homes regarding their child's developmental history. After this interview families were mailed questionnaires each year in the summer, and additional interviews were conducted in some years. Teachers completed questionnaires in the spring.

The present study used data from year eight through year ten of the study (when participants were in seventh grade through ninth grade). Early adolescents provided self-reports of activity involvement in seventh grade and internalizing problems in seventh and ninth grades. Mothers provided reports on SES when their adolescents were in seventh grade as well as externalizing problems when their adolescents were in seventh and eighth grades. Teachers reported on adolescents' social competence in seventh and eighth grades. School records of academic competence were obtained in the spring of seventh and eighth grades.

Measures

Socioeconomic Status. Socioeconomic status was measured in seventh grade according to the Hollingshead Four-Factor Index (Hollingshead, 1975). We averaged the mother's and father's scores for years of education and occupation. When no father lived at home, the mother's scores were used ($\alpha = 0.71$).

Activity Participation. The measure of activity involvement prompted adolescents to identify and provide information about the activities in which they were involved. Their responses were used to measure the number of activities, hours per year of participation, and commitment to activities in early adolescence (seventh grade), similar to the Extracurricular Activities Survey (The Conduct Problems Prevention

Research Group, 2002; see Appendix for measure). The measure was administered by a trained interviewer during the youth interview.

Breadth. Participants were asked to list their involvement in extracurricular activities connected to school, church, and community programs. An overall breadth score was created by summing the number of school, church, and community activities (e.g., Busseri et al., 2006).

Commitment. Participants were also asked about their level of satisfaction/commitment to each of the extracurricular activities they identified on a five-point scale (0 = not very satisfied or committed; might quit soon, 1 = a little satisfied; probably will continue for a while, 2 = satisfied; will continue, 3 = quite satisfied; definitely want to stay involved, 4 = extremely satisfied; activity is very important to me; highly committed). The highest commitment score reported across any activity was retained as the overall commitment score because high commitment to even a single activity was expected to confer the benefits of commitment (e.g., McConnell & Erath, 2018). All participants who reported that they were not involved in activities were assigned a commitment score of zero because it is not possible to be committed without activity involvement.

Depth. Participants were also asked how many hours per week and weeks per year they participated in each activity throughout the entire year. Using these questions, a total number of hours per year was computed. An overall depth-hours measure was created by summing the number of hours per year devoted to school, church, and community activities (e.g., Denault & Poulin, 2009).

Academic Competence. Academic performance was measured with grade point averages (GPAs) that were recorded based on a review of school records in each year of the project. Staff members examined each child's file and noted the grades earned in six subject areas (reading, math, language arts, spelling, social studies, and science). Conventional grade conversions were used (A= 4, B = 3, C = 2, D = 1). A composite GPA was calculated for each child by averaging across all subjects. Additionally, standardized achievement test scores were also included. The percentile rankings for three common scales (reading, language, and math) were used. A composite achievement test score was then computed by averaging the three summary scores for seventh grade ($\alpha = 0.74$) and eighth grade ($\alpha = 0.73$). Because the composite GPA and achievement test scores were highly correlated for seventh ($r = 0.43$, $p < .001$) and eighth grade ($r = 0.46$, $p < .001$), the two scores were standardized and summed to form a single measure of academic competence.

Social Competence. To measure social competence teachers completed the 7-item Teacher Checklist of Peer Relations (Coie & Dodge, 1988), which has been linked with other measures of social skills and used as an indicator of a social competence (Erath & Tu, 2014). This checklist contains a set of items that assess adolescents' social skillfulness on a 5-point scale (from "very poor" to "very good"). Example items include "understands others' feelings" and "is aware of the effects of his/her behavior on other children." The seven items were averaged for grades seven ($\alpha = 0.95$) and eight ($\alpha = 0.95$).

Internalizing Problems. Anxiety and depressive symptoms were assessed with the Youth Self Report (YSR; Achenbach, 1991). The YSR consists of 112 items rated on

a 3-point scale (0 = not true, 1 = somewhat true, and 2 = very true). The internalizing behavior scale is composed of 30 items. Example items include “feels worthless” and “prefers to be alone.” Reliability was high for seventh grade ($\alpha = 0.85$) and ninth grade ($\alpha = 0.88$).

Externalizing Problems. Aggressive and rule-breaking behaviors were assessed with mother reports on the Child Behavior Checklist (CBCL; Achenbach, 1991). The CBCL consists of 112 items rated on a 3-point scale (0 = not true, 1 = somewhat true, and 2= very true for the adolescent). The externalizing behavior problems subscale included 31 items. Example items include “cruelty, bullying, or meanness to others” and “argues a lot.” Reliability was high for seventh grade ($\alpha = 0.88$) and eighth grade ($\alpha = 0.89$).

3. Results

Plan of Analysis

The aims of the present study were to test associations linking breadth, commitment, and depth of activity involvement (collectively and independently) with concurrent and subsequent adjustment outcomes, including academic and social competence as well as internalizing and externalizing problems, controlling for selection factors (Figures 1-2). Furthermore, earlier levels of the outcome variables were examined as moderators of these associations in longitudinal models (Figures 3-4). Eight non-linear main effects models (e.g., four cross-sectional models with non-linear breadth and depth predictor terms for each of the outcomes as well as four longitudinal models with non-linear breadth and depth predictor terms for each of the four outcomes) were also examined. However, of the 16 possible non-linear effects, only one was significant (i.e., longitudinal association between depth and social competence). Given the exploratory approach and limited evidence, non-linear models were not retained in the present study.

All variable distributions were tested for normality and outliers were identified as values greater than three standard deviations from the mean. Outliers were detected for breadth (four outliers), depth (16 outliers), internalizing problems (one outlier in seventh grade; four outliers in ninth grade) and externalizing problems (two outliers in seventh grade; seven outliers in eighth grade). All analyses were conducted with outlier values winsorized to the next closest value within three standard deviations from the mean. Results were generally consistent with either winsorized or non-winsorized values (only one difference: depth did not predict academic competence longitudinally in the winsorized version); thus, all results are presented with non-winsorized values.

All continuous predictor variables were mean-centered prior to regression analyses. Regression analyses tested the main hypotheses and were conducted in MPlus using full information maximum likelihood estimation to handle missing data (Muthén & Muthén, 1998-2011). Separate regression analyses were conducted with the four outcome variables: social competence, academic competence, internalizing problems, and externalizing problems. Selection variables of social competence and SES were controlled in all models, and earlier levels of the outcome variables were also controlled in longitudinal models. Each dimension of activity involvement was entered simultaneously in regression models to test the independent contribution of each dimension of activity involvement. Interactions between each dimension of activity involvement and earlier level of the respective outcome variable were added to test for moderation (i.e., 12 interaction effects were tested, including interactions between each of the three dimensions of activity involvement and seventh-grade adjustment predicting the four adjustment outcomes).

In addition, cross-sectional and longitudinal analyses were conducted with an activity involvement latent variable (Bohnert et al., 2010). First, the latent measurement model including only the breadth, commitment, and depth indicators was fit. Next, cross-sectional associations between the activity involvement latent variable and each outcome, controlling for SES and social competence, were fit in respective models. Finally, longitudinal associations between the activity involvement latent variable and each outcome, controlling for earlier level of the outcome, SES, and social competence, were fit. Interactions between the activity involvement latent variable and earlier level of the respective outcome variable were added to the longitudinal models (i.e., four interaction

effects were tested, including the interaction between the latent activity involvement variable and seventh-grade adjustment predicting the four adjustment outcomes). Latent interaction terms that were not significant were removed to improve model fit (Asparouhov & Muthén, 2019).

Significant interactions were probed and plotted according to standard procedures (Aiken & West, 1991). Specifically, simple intercepts and slopes representing the relations between the predictor variable (activity involvement) and outcome variable (academic competence, social competence, internalizing problems, or externalizing problems) at low (-1 SD) and high (+1 SD) levels of the moderator variable (earlier level of the outcome variable) were plotted for significant interactions. Regions of significance were also examined for significant interactions (Preacher, Curran, & Bauer, 2006).

Due to the large number of analyses, results were cautiously interpreted with attention to the magnitude and consistency of results. The conservative nature of the models, including selection factors and earlier level of the respective outcome variable, was also considered when interpreting the findings.

Descriptive and Correlational Analyses

Descriptive statistics are presented in Table 2. On average, adolescents were involved in about two activities for approximately 227 hours per year, and they reported relatively high levels of commitment. Pearson's bivariate correlations between study variables are presented in Tables 3-5. Both SES and social competence had medium to large associations with study variables (except for internalizing problems; Table 3). Gender was not included as a selection variable because it was not correlated with activity involvement (Table 4). Race was also not included as a selection variable as it

was only modestly correlated with activity involvement dimensions and results did not change when included (Table 4). Breadth was highly correlated with commitment and depth. Commitment and depth were moderately associated. Each dimension of activity involvement was modestly correlated with each outcome variable in the expected direction, excluding externalizing problems (Table 5).

Cross-Sectional Independent Associations

Four cross-sectional models (i.e., one for each outcome) predicted academic competence, social competence, internalizing problems, and externalizing problems in seventh grade. Each model included selection factors (i.e., SES and social competence) and dimensions of activity involvement in seventh grade as predictors.

Academic Competence (seventh grade). Higher SES and social competence were associated with higher levels of academic competence concurrently. Dimensions of activity involvement, including breadth (B = 0.01, SE = 0.03, p = .80), commitment (B = 0.01, SE = 0.02, p = .88), and depth (B = 0.08, SE = 0.07, p = .22) were not associated with academic competence (ΔR^2 = 0.4% for dimensions of activity involvement). The full model explained 37.8% of the variance in seventh grade school records of academic competence (Table 6).

Social Competence (seventh grade). Higher SES was associated with higher levels of social competence concurrently. Neither breadth (B = 0.06, SE = 0.04, p = .13) nor depth (B = -0.05, SE = 0.08, p = .50) was associated with social competence. However, higher levels of commitment were marginally associated with higher levels of social competence (B = 0.07, SE = 0.04, p = 0.07; ΔR^2 = 2.6% for dimensions of activity

involvement). The full model explained 12.6% of the variance in seventh grade teacher-reported social competence (Table 6).

Internalizing Problems (seventh grade). SES was not associated with internalizing problems, but higher social competence was marginally associated with lower levels of internalizing problems concurrently. Breadth (B = -0.09, SE = 0.29, p = .77) and depth (B = -0.16, SE = 0.70, p = .82) were not associated with internalizing problems. Higher commitment to organized activities was associated with lower levels of internalizing problems (B = -0.68, SE = 0.31, p = .03; ΔR^2 = 2.5% for dimensions of activity involvement). The full model explained 4.7% of the variance in seventh grade self-reported internalizing problems (Table 6).

Externalizing Problems (seventh grade). Higher SES and social competence were associated with lower levels of externalizing problems concurrently. In contrast, breadth (B = 0.39, SE = 0.26, p = .16), commitment (B = -0.47, SE = 0.28, p = .10), and depth (B = -0.01, SE = 0.60, p = .99) were not associated with externalizing problems (ΔR^2 = 0.7% for dimensions of activity involvement). The full model explained 11.9% of the variance in seventh grade mother-reported externalizing problems (Table 6).

Longitudinal Independent Associations

Four longitudinal models (i.e., one for each outcome) predicted academic competence (eighth grade), social competence (eighth grade), internalizing problems (ninth grade), and externalizing problems (eighth grade). As predictors, each model included selection factors (i.e., seventh-grade level of outcome, SES, and social competence) and dimensions of activity involvement in seventh grade, as well as

interactions between each dimension of activity involvement and seventh-grade level of the respective outcome variable.

Academic Competence (eighth grade). Academic competence was highly stable from seventh grade to eighth grade. Higher SES and social competence predicted higher levels of academic competence longitudinally. Neither breadth (B = -0.01, SE = 0.02, p = .66) nor commitment (B = -0.03, SE = 0.03, p = .29) predicted academic competence. However, depth predicted higher levels of academic competence (B = 0.11, SE = 0.06, p = .05; ΔR^2 = 0.2% for dimensions of activity involvement). None of the interactions between earlier level of academic competence and dimensions of activity involvement predicted academic competence (ΔR^2 = 0.1% for interactions between dimensions of activity involvement and seventh-grade academic competence). The full model accounted for 70.7% of the variance in academic competence in eighth grade (Table 7).

Social Competence (eighth grade). Social competence was moderately stable over time. Higher SES predicted higher levels of social competence. Neither breadth (B = 0.00, SE = 0.04, p = .93), commitment (B = 0.05, SE = 0.04, p = .52), nor depth (B = 0.04, SE = 0.08, p = .21) predicted social competence (ΔR^2 = 1.2% for dimensions of activity involvement). None of the interactions between earlier level of social competence and the dimensions of activity involvement predicted social competence (ΔR^2 = 0.9% for interactions between dimensions of activity involvement and seventh-grade social competence). The full model explained 28.6% of the variance in teacher-reported social competence in eighth grade (Table 8).

Internalizing Problems (ninth grade). Internalizing problems were moderately stable from seventh grade to ninth grade. Higher SES predicted higher levels of

internalizing problems. Social competence did not predict internalizing problems. Neither breadth (B = -0.02, *SE* = 0.28, *p* = .95), commitment (B = -0.45, *SE* = 0.29, *p* = .12), nor depth, (B = -0.38, *SE* = 0.66, *p* = .57) predicted internalizing problems (ΔR^2 = 1.5% for dimensions of activity involvement). Furthermore, none of the interactions between earlier levels of internalizing problems and dimensions of activity involvement predicted internalizing problems (ΔR^2 = 0.3% for interactions between dimensions of activity involvement and seventh-grade internalizing problems). The full model accounted for 29.3% of the variance in ninth grade self-reported internalizing problems (Table 9).

Externalizing Problems (eighth grade). Externalizing problems were highly stable over time. SES did not predict externalizing problems, but higher levels of social competence predicted lower levels of externalizing problems. Breadth (*B* = -0.10, *SE* = 0.18, *p* = .58), commitment (*B* = -0.05, *SE* = 0.20, *p* = .78), and depth (*B* = .48, *SE* = 0.44, *p* = .28) did not predict externalizing problems (ΔR^2 = 0.1% for dimensions of activity involvement). None of the interactions between earlier levels of externalizing problems and dimensions of activity involvement were significant predictors of externalizing problems (ΔR^2 = 0.9% for interactions between dimensions of activity involvement and seventh-grade externalizing problems). The full model accounted for 63.7% of the variance in eighth grade mother-reported externalizing problems (Table 10).

Activity Involvement Latent Variable

The activity involvement latent variable included three indicators: breadth, commitment, and depth of involvement in organized activities. The standardized factor loadings were 0.91 ($p < .001$) for breadth, 0.68 ($p < .001$) for commitment, and 0.67 ($p < .001$) for depth. The latent variable explained 82% of the variance in breadth, 47% of the

variance in commitment, and 44% of the variance in depth. The variance of the activity involvement latent variable was significant ($B = 0.20$, $p < .001$).

Four structural equation models (i.e., one for each outcome) were examined cross-sectionally with the activity involvement latent variable and selection factors in seventh grade as predictors. Model fit indices (chi square, root mean square error approximation [RMSEA], comparative fit index [CFI], and Tucker-Lewis index [TLI]) were compared to traditional fit criteria: RMSEA less than .05 and CFI and TLI greater than .95 (Brown, 2006; Gates & Molenaar, 2012). Chi square fit indices are considered conservative with a large sample and will be interpreted as such (Thompson & Daniel, 1996).

Activity Involvement Latent Variable: Cross-Sectional Models

Academic Competence (seventh grade). The academic competence model fit the data well based on several fit indices (CFI = .99; TLI =.99; RMSEA = 0.02, $p = .83$), although the chi square index, which is considered overly conservative with a large sample, indicated poor fit ($\chi^2(14) = 629.9$, $p < .001$). Higher SES and social competence were associated with higher levels of academic competence concurrently. Higher levels of activity involvement were not associated with academic competence ($B = 0.15$, $SE = 0.10$, $p = .13$; $\Delta R^2 = 0.5\%$ for the activity involvement latent variable). The full model accounted for 37.8% of the variance in seventh grade school records of academic competence (Table 11).

Social Competence (seventh grade). The social competence model fit the data well based on several fit indices (CFI = .99; TLI = .99; RMSEA = 0.03, $p = .63$), with the exception of the chi square index, which is considered overly conservative with a large sample ($\chi^2(10) = 495.50$, $p < .001$). Higher SES was associated with higher levels of

social competence. Activity involvement was also associated with higher social competence (B = 0.36, SE = 0.12, p = .002; ΔR^2 = 2.4% for the activity involvement latent variable). The full model accounted for 12.4% of the variance in seventh grade teacher-reported social competence (Table 11).

Internalizing Problems (seventh grade). This model was determined to be a satisfactory fit to the data based on several fit indices (CFI = .99; TLI = .99; RMSEA = 0.03, p = .68), with the exception of the chi square index ($\chi^2(14) = 473.88$, $p < .001$). Neither SES nor social competence was associated with concurrent internalizing problems. In contrast, higher levels of activity involvement were associated with lower levels of internalizing problems (B = -2.35, SE = 0.91, p = .01; ΔR^2 = 2.1% for the activity involvement latent variable). The full model accounted for 4.3% of the variance in seventh grade self-reported internalizing problems (Table 11).

Externalizing Problems (seventh grade). This model was determined to be a satisfactory fit to the data based on several fit indices (CFI = .99; TLI = .99; RMSEA = 0.03, p = .67), with the exception of the chi square index ($\chi^2(14) = 505.17$, $p < .001$). Higher SES and social competence were associated with lower levels of externalizing problems. However, activity involvement was not associated with externalizing problems (B = 0.40, SE = 0.83, p = .63; ΔR^2 = 0.1% for the activity involvement latent variable). The full model accounted for 11.3% of the variance in seventh grade mother-reported externalizing problems (Table 11).

Activity Involvement Latent Variable: Longitudinal Models

Four models (i.e., one for each outcome) were examined longitudinally with the activity involvement latent variable, selection factors, and the interaction between the

latent variable and earlier level of respective outcome as predictors. In models involving latent variable interactions, MPlus does not provide traditional model fit indices. Thus, when an interaction between earlier level of an outcome and activity involvement was not significant, it was removed from the model to obtain appropriate fit statistics and improve model fit (Asparouhov & Muthén, 2019).

Academic Competence (eighth grade). No traditional model fit statistics were available for the latent interaction model; however, the academic competence model fit was considered adequate because the interaction term was marginally significant (Asparouhov & Muthén, 2019). Higher SES, social competence, and earlier academic competence predicted higher levels of later academic competence. Higher levels of activity involvement did not predict academic competence (B = -0.02, SE = 0.08, p = .94; ΔR^2 = 0.2% for the activity involvement latent variable), but the interaction between activity involvement and earlier academic competence was marginally significant (B = 0.18, SE = 0.09, p = .06; ΔR^2 = 1.2% for the latent interaction) and should be interpreted with caution. Higher levels of activity involvement marginally predicted lower levels of eighth-grade academic competence, but only at lower levels of academic competence in seventh grade (B = -0.17, SE = 0.10, p = .09; Figure 5). Calculation of regions of significance indicated that the relationship between activity involvement and eighth-grade academic competence was significant for those with earlier levels of academic competence between -5.31 and -1.80 (4% of adolescents were within the significant region). The full model accounted for 71.6% of the variance in eighth grade school records of academic competence (Table 12).

Social Competence (eighth grade). The social competence model fit the data well based on all fit indices ($\chi^2(6) = 7.53$, $p = .27$; CFI = .99; TLI = .99; RMSEA = 0.02, $p = .78$). Higher SES and social competence predicted higher levels of social competence. However, activity involvement did not predict social competence ($B = 0.18$, $SE = 0.12$, $p = .12$; $\Delta R^2 = 1.0\%$ for the activity involvement latent variable). The interaction between activity involvement and seventh grade social competence was not significant and accordingly was removed to obtain appropriate fit statistics and improve model fit (Asparouhov & Muthén, 2019). The full model accounted for 27.5% of the variance in eighth grade teacher-reported social competence (Table 13).

Internalizing Problems (ninth grade). The internalizing problems model fit the data well based on all fit indices ($\chi^2(8) = 11.54$, $p = .17$; CFI = .99; TLI = .99; RMSEA = 0.03, $p = .74$). Higher SES and earlier internalizing problems, but not social competence, predicted higher levels of later internalizing problems. Higher levels of activity involvement predicted lower levels of internalizing problems ($B = -1.85$, $SE = 0.87$, $p = .03$; $\Delta R^2 = 1.5\%$ for the activity involvement latent variable). The interaction between social competence and seventh grade internalizing problems was not significant and accordingly was removed to obtain appropriate fit statistics and improve model fit (Asparouhov & Muthén, 2019). The full model accounted for 28.9% of the variance in ninth grade self-reported internalizing problems (Table 14).

Externalizing Problems (eighth grade). No traditional model fit statistics were available for the latent interaction model; however, the externalizing problems model fit was considered adequate because the interaction term was significant (Asparouhov & Muthén, 2019). SES was unrelated to externalizing problems. Higher levels of social

competence and lower levels of earlier externalizing problems predicted lower levels of later externalizing problems, respectively. Activity involvement did not predict externalizing problems (B = 0.29, *SE* = 0.71, *p* = .69; ΔR^2 = 0.1% for the activity involvement latent variable), however the interaction between activity involvement and earlier externalizing problems predicted later externalizing problems (*B* = .28, *SE* = .07, *p* < .001; Figure 6; ΔR^2 = 3% for the latent interaction). Activity involvement predicted lower levels of later externalizing problems at lower levels of earlier externalizing problems (*B* = -5.29, *SE* = 1.01, *p* < .001) but higher levels of later externalizing problems at higher levels of earlier externalizing problems (*B* = 5.87, *SE* = 0.71, *p* < .001; see Figure 6). Calculation of the regions of significance showed that the association between activity involvement and later externalizing problems was significant for those with earlier levels of externalizing problems outside the region of -2.29 to 1.31 (80% of adolescents were within the significant region). The full model accounted for 65.8% of the variance in eighth grade mother-reported externalizing problems (Table 15).

4. Discussion

There is a considerable literature examining the benefits of organized activities for youth development (Dworkin et al., 2003; Eccles & Barber, 1999; Lerner et al., 2005; Mahoney et al., 2005). Involvement in organized activities provides opportunities for youth to develop identity, esteem, skills, and positive relationships (Eccles & Barber, 1999; Mahoney, 2000). However, few studies have examined unique or shared contributions of multiple dimensions of activity involvement. Longitudinal models that control for earlier adjustment and selection factors are also needed due to the stability of adjustment variables and salience of social competence and SES (Fredricks, 2012).

Identity theory suggests exploration and commitment are key aspects of identity development during adolescence in support of the unique importance of breadth and commitment to organized activities (Erikson, 1968; Marcia, 1966). Models that tested the independent contributions of dimensions of activity involvement revealed only modest support for hypotheses based on identity theory. Adjustment outcomes were moderately to highly stable, and selection factors of SES and social competence were consistently associated with activity involvement and adjustment outcomes. When controlling for these factors, analyses revealed that commitment to activities was concurrently associated with lower internalizing problems, and depth of involvement (i.e., time spent in activities) was prospectively associated with higher academic competence.

Positive youth development perspectives suggest organized activities provide a context to promote strengths through the "5 C's" in support of the shared importance of breadth, depth, and commitment to organized activities (Lerner, 2007). An activity involvement latent variable yielded somewhat stronger support for hypotheses based on

positive youth development. That is, by marshaling the meaningful shared variance among measures of breadth, commitment, and depth, and removing the error variance of these measures, a more significant contribution of activity involvement became apparent (Bohnert et al., 2010). Even in rigorous analytic models that controlled for selection factors and earlier adjustment (in longitudinal models), these dimensions of activity involvement were collectively associated with early adolescent adjustment. More specifically, the activity involvement latent variable was cross-sectionally associated with better social competence and fewer internalizing problems. In longitudinal analyses, the activity involvement latent variable predicted lower levels of internalizing problems. In addition, interactions between activity involvement and earlier level of the respective outcome predicted externalizing problems.

Interaction results suggested that activity involvement may amplify earlier levels of risk or positive adjustment. At relatively low levels of externalizing problems in seventh grade, activity involvement predicted lower externalizing problems in eighth grade, whereas at relatively high levels of externalizing problems in seventh grade, activity involvement predicted higher externalizing problems in eighth grade. Friendship selection and socialization within the context of activity involvement may explain this amplification effect, as discussed in further detail below.

Activity Involvement and Academic Competence

Although breadth and commitment were not associated with academic competence either cross-sectionally or longitudinally, depth predicted academic competence over time. This finding is consistent with previous research indicating that breadth and depth of involvement in tenth grade predicted higher levels of academic

adjustment two years later, controlling for SES, prior achievement, gender, ethnicity, school size, and family structure (Fredricks, 2012). In addition, both breadth and depth of participation in organized activities in seventh grade predicted academic orientation (i.e., grades, self-perception of academic competence, educational aspirations, and skipping class) in 11th grade controlling for family income and earlier levels of academic orientation (Denault & Poulin, 2009).

Depth of activity involvement may contribute to academic competence due to the development of time management skills and exposure to prosocial peers. One qualitative study from the perspective of adolescents involved in organized activities found that youth learned to balance multiple priorities, such as school work and friendships, when they spent substantial time in organized activities (Dworkin et al., 2003). Moreover, compared to other contexts (i.e., academic classes and socializing with peers), youth reported that they gained higher levels of time management skills from involvement in organized activities (Hansen et al., 2003). Thus, time management skill development may explain the effect of depth on academic competence.

Another possible explanation for the effect of depth on academic competence concerns the types of peers typically involved in organized activities. Youth involved in organized activities tend to have more prosocial friends than uninvolved youth (Fredricks & Eccles, 2005), and involvement in prosocial peer groups has been associated with academic achievement (Wentzel & Caldwell, 1997). Indeed, affiliation with prosocial peers mediated the positive association between activity involvement and academic adjustment (Fredricks & Eccles, 2005). Thus, youth who spend ample time involved in organized activities are likely spending more time with prosocial friends and less time

with deviant peers in unstructured, unsupervised settings, potentially promoting their academic achievement.

It is important to note when analyses were conducted using winsorized values, the effect of depth on academic competence did not hold and therefore should be interpreted with caution. Many participants in the present sample were not involved in organized activities (i.e., 67 participants were uninvolved), and some adolescents were heavily involved (potentially to the point of overestimating their involvement). Thus, it is possible the association between depth and academic competence was inflated by relatively extreme values. Interestingly, despite the large number of analyses conducted in the present study, only this finding differed across winsorized and non-winsorized analyses.

Breadth and commitment were not associated with academic competence. Some activities (e.g., honor's society) more plausibly promote academic competence than others (e.g., football). Participation in church activities, for example, has been linked with better academic competence above and beyond other activities (Irvin, Farmer, Leung, Thompson, & Hutchins, 2010). Some of the activities that expanded breadth may be been academically irrelevant. Another possibility concerns the focus on dimensions of activity involvement independently. Participating in many activities may be meaningless if the child is not committed to them or spending substantial time participating; similarly, commitment may be less consequential without significant time spent or participation in multiple activities. For example, previous research has shown that breadth predicts improvements in GPA only when children attend at least 80% of available meetings

(Springer & Diffily, 2012). Thus, some combination of commitment and breadth, or depth and breadth, may be helpful for understanding academic competence.

Indeed, in the present study, the shared contributions of breadth, commitment, and depth – represented by the activity involvement latent variable – predicted academic competence in eighth grade, albeit through an interaction with earlier levels of academic competence at the non-significant trend level. Contrary to our hypothesis, however, activity involvement marginally predicted lower levels of academic competence at lower levels of initial (seventh-grade) academic competence, but not higher levels of academic competence. This result suggests that activity involvement may amplify existing academic adjustment. Youth with lower levels of academic competence may be more likely to choose activities with peers who are also less academically inclined, who may socialize poorer academic engagement or performance (Altermatt & Pomerantz, 2005; Prinstein & Dodge, 2008). This finding also provides preliminary evidence that GPA requirements many schools have for participation in organized activities (Stearns & Glennie, 2010) may be beneficial for youth who have quite low levels of academic competence. However, it should be noted that both the overall interaction effect and association between activity involvement and academic competence at low levels of initial academic competence were only marginal. Thus, this amplification effect may be an artifact in the present sample and should be reexamined in future research.

Activity Involvement and Social Competence

Commitment was associated with social competence concurrently, although this effect was not confirmed longitudinally. This finding is somewhat consistent with identity theory (Erikson, 1968), specifically the importance of commitment (Marcia,

1966). The activity involvement latent variable was also concurrently, but not prospectively, associated with social competence, consistent with positive youth development (Lerner et al., 2005). Several prior studies have found longitudinal evidence indicating that some form of activity involvement is associated with better social functioning (e.g., Mahoney et al., 2003; Randall & Bohnert, 2009). Additionally, cross-sectional evidence shows engagement while participating in after school programs is associated with social competence (Shernoff, 2010), which is similar to commitment. Due to the social nature of organized activities (e.g., opportunities for cooperation, communication, social problem solving; Dworkin et al., 2003; Eccles & Barber, 1999), adolescents who are committed may be motivated to establish meaningful connections with their peers, potentially leading to stronger social competence.

In contrast to hypotheses and some prior research (Busseri et al., 2006), breadth of activity involvement was not associated with social competence. We expected that greater breadth of involvement in organized activities would provide contexts to promote exploration of identities and interests (Erikson, 1968) as well as a variety of peers with whom to interact and develop social competencies (Busseri et al., 2006). It is possible that adolescents may be exposed to a similar set of peers across activities. For example, friends who play football may also join baseball together (Simpkins, Vest, Delgado & Price, 2012). Exposure to similar peers across activities would limit the diversity of social learning opportunities across the activities and therefore potentially diminish the purported advantage for social competence.

Due to cross-sectional, but not longitudinal, associations linking both commitment and the activity involvement latent variable with social competence, it is

important to consider selection effects as well as the alternative direction of effect. Organized activities may not serve as a unique context for the development of social competence, and any social advantages of activity involvement may be gained in other social contexts, such as friendships (Ladd, 1988; Masten & Coatsworth, 1998; Monahan & Booth-LaForce, 2015). For example, youth with stronger social skills have higher-quality friendships, which in turn further enhance their social skills over time (Monahan & Booth-LaForce, 2015). Additionally, social competence may underlie motivation to join group activities and reflect the social skills needed to become meaningfully involved with peers in organized activities. Indeed, social competence predicted extracurricular commitment two years later in adolescence, controlling for earlier levels of extracurricular commitment (Mahoney et al., 2003). The present study does not provide strong evidence that activity involvement contributes to social competence.

Activity Involvement and Internalizing Problems

Only commitment, but not breadth or depth, was associated with lower levels of internalizing problems concurrently. Although this finding was anticipated and is consistent with identity theory (Erikson, 1968; Marcia, 1966), it was not confirmed longitudinally. Positive youth development theory also suggests that organized activities provide a context to meet the "5 C's," promoting well-being and lower levels of internalizing problems (Lerner et al., 2005). Large longitudinal studies provide evidence that activity involvement is related to internalizing problems (Fauth et al., 2007; Fredricks & Eccles, 2010). Very few prior studies have considered the association between commitment and internalizing problems, although one previous longitudinal study found that the association between peer victimization and depressive symptoms

was attenuated at higher levels of commitment to organized activities (McConnell & Erath, 2019).

Commitment to organized activities may allow adolescents to enhance skills, improve their self-esteem, and develop relationships, thus promoting well-being (Eccles & Barber, 1999; Lerner et al., 2006). Commitment, rather than sheer participation, may be particularly important because obtaining the psychological benefits afforded through participation in organized activities may not be achieved naturally but could require additional effort or reflect achievement of identity status (Marcia, 1966). Research has supported the notion that meeting psychological needs of competence and relatedness within organized activities explains the association between activity involvement and higher levels of life satisfaction (Leversen et al., 2012). Furthermore, motivation to participate in an organized activity has been associated with well-being for youth (Beiswenger & Grolnick, 2010).

On the other hand, the lack of effects for breadth and depth (when controlling for commitment) may be explained by the powerlessness of passive participation. Some previous research has suggested that breadth and depth of activity involvement are associated with fewer internalizing problems over time (Bohnert et al., 2008; Metsäpelto & Pulkkinen, 2012). However, two studies of high schoolers found that neither breadth nor depth predicted internalizing problems when controlling for earlier levels of internalizing problems (Bohnert & Garber, 2007; Darling, 2005).

Tests of the unique effects of each dimension of activity involvement can be obscured by measurement error (e.g., overestimates of depth) and fail to focus on what is shared across dimensions. In contrast, the activity involvement latent variable represents

the shared aspects of breadth, commitment, and depth, and predicted lower levels of internalizing problems in cross-sectional and rigorous longitudinal models, consistent with the positive youth development perspective (Lerner, 2007). Overall activity involvement in seventh grade predicted lower internalizing problems in ninth grade, controlling for earlier internalizing problems as well as SES and social competence.

Activity involvement may reduce risk for internalizing problems by influencing core symptoms or providing a context for positive social experiences. One core symptom of internalizing problems is low perceived control (Graber, 2004). Participation in organized activities promotes skill development (Eccles & Barber, 1999; Larson & Verma, 1999), which could enhance perceptions of control and contribute to feelings of competence (Agans et al., 2014). Consistently high levels of activity participation over time has been associated with higher levels of competence, compared to inconsistent or low rates of participation (Agans et al., 2014). In turn, feeling more competent is associated with lower levels of internalizing problems (Bornstein et al., 2010).

Activity involvement may also reduce negative affect, another core symptom of internalizing problems (Graber, 2004). Presumably, youth generally participate in activities that they find enjoyable. Evidence from randomized controlled trials of behavioral activation interventions for depression shows that increasing participation in enjoyable activities reduces negative affect and depressive symptoms (McCauley et al., 2016).

In addition to counteracting core symptoms of internalizing problems, activity involvement provides youth with opportunities for support from trusted adults and positive peer relationships (Larson & Verma, 1999). Relationships developed within the

context of activity involvement may act as a mechanism through which activity involvement reduces the risk for internalizing problems. More and higher-quality friendships are associated with lower internalizing problems (Waldrip, Malcolm, & Jensen-Campbell, 2008), whereas peer problems such as victimization predict internalizing problems in childhood and adolescence (Reijntjes et al., 2010). Additionally, positive mentoring relationships with adults are associated with lower internalizing problems (Whitney, Hendricker, & Offutt, 2011), whereas problems in teacher-student relationships are related to greater internalizing problems (Averdijk, Eisner, & Ribeaud, 2013; Wang, Brinkworth, & Eccles, 2013). Thus, organized activity involvement may provide positive relationship opportunities that promote psychological well-being and counter internalizing problems.

Activity Involvement and Externalizing Problems

Neither breadth, commitment, nor depth was independently associated with externalizing problems, in contrast to theoretical and empirical expectations that breadth and commitment would reduce risk (Erikson, 1968; Marcia, 1966). Externalizing problems often emerge in early childhood (Caspi, Moffit, & Newman, 1998; Moffitt & Caspi, 2001) and are highly stable in adolescence. For example, more than 50% of youth with high levels of externalizing problems and 70% of youth with low levels of externalizing problems remain stable over time (Reitz et al., 2005). Individual dimensions of activity involvement may lack power to redirect such stability.

The activity involvement latent variable, however, interacted with earlier (seventh-grade) levels of externalizing problems to predict later (eighth-grade) externalizing problems, controlling for earlier externalizing problems and selection

factors. Although a remediation pattern of interaction was anticipated, the results suggested that activity involvement amplified initial risk and positive adjustment. More specifically, at lower levels of earlier externalizing problems, activity involvement predicted lower levels of later externalizing problems. In contrast, at higher levels of earlier externalizing problems, activity involvement predicted higher levels of later externalizing problems.

One explanation for the amplification effect lies in the robust evidence for friendship selection and socialization. Selection suggests that adolescents seek friends who exhibit similar behaviors and characteristics (Kandel, 1978), whereas socialization suggests that friends influence adolescents' behaviors and characteristics, thus increasing similarity over time (Prinstein & Dodge, 2008). Friendship selection and socialization may occur within the context of organized activities. That is, adolescents may choose to join activities specifically because their friends want to join or already participate in the activities (Urberg, Degirmencioglu, & Tolson, 1998), and friendships within the activities may, in turn, socialize similar behaviors. More specifically, early adolescents may choose activities with peers who exhibit similarly low or high levels of externalizing behaviors, and friendships within these activities may, in turn, model and reinforce less or more externalizing behaviors, respectively.

The Role of Selection Factors

In the present study, SES, social competence, and earlier level of risk were key contributors to adjustment and played an important role in activity involvement (Darling, 2005; Hoffman, 2006; Zaff et al., 2003). Adolescents with higher SES are likely to have more resources with which to pay for participation in organized activities (Coleman,

1961; McHale et al., 2001). Furthermore, adolescents from higher SES backgrounds are more likely to attend schools and live in communities that offer a wider variety of activities (Humbert et al., 2006). Higher SES has also been consistently linked with better academic competence (Goodman et al., 2012), lower internalizing problems (Reiss, 2013), and lower externalizing problems (Bøe et al., 2012). Thus, SES may account for simple associations between activity involvement and adjustment in the literature.

Social competence is also likely associated with greater activity involvement because youth with better social skills are more likely to want to participate in activities that would require them to interact with peers. Social competence also predicts better academic performance (Elias & Haynes, 2008; Welsh, Parke, Widaman, & O'Neil, 2001), as well as lower levels of both internalizing and externalizing problems (Bornstein et al., 2010). Thus, social competence may also account for simple associations between activity involvement and adjustment in the literature. Indeed, in the present study, when these selection variables were not included, individual dimensions of activity involvement were consistently related to adjustment outcomes. Thus, it is essential to account for selection factors in research on activity involvement.

Strengths, Limitations, and Future Directions

The focus on early adolescence is a strength of the present study. Despite their biological maturation, early adolescents are often not afforded the level of independence they desire (Moffitt, 1993). Organized activities are generally prosocial contexts where adolescents may be given the independence and agency opportunities they want (Eccles et al., 2003). Another advantage of studying activity involvement during this developmental period is that early adolescents spend increasing time at school and

outside of the home with peers, consequently spending less time with family (Larson & Richards, 1991) and making contexts outside the home especially influential. In addition, it is important to study protective processes, such as activity involvement, that can be incorporated in prevention programs during a developmental period when youth experience escalations in internalizing problems as well as declines in school motivation (Petersen et al., 1993; Rudolph et al., 2001). Finally, many of the high-quality studies previously published in this area focus on later adolescent samples (Busseri et al., 2006; Fredricks & Eccles, 2005), despite some evidence indicating that the benefits of involvement in organized activities begin to grow in early adolescence (e.g., Crosnoe, Smith, & Leventhal, 2015; Denault & Poulin, 2009).

There are strengths and limitations of the outcome measures employed in the present study. Multiple informants were utilized (e.g., teachers, parents, school records, and self) and selected based on known advantages for assessment of particular outcomes. Social competence was measured using an empirically supported scale completed by teachers, who have abundant opportunities to witness interactions among early adolescents with various levels of social competence (Coie & Dodge, 1988; Erath & Tu, 2014). However, teacher ratings of social competence may be inflated among youth who are more involved in school activities (Fletcher, Nickerson, & Wright, 2003). School records of academic performance across multiple subjects as well as standardized test scores provided a relatively objective measure of academic competence. Parents reported on externalizing problems, as they are often considered more accurate informants of externalizing behaviors than early adolescents (Loeber, Green, & Lahey, 1990). Early adolescents, however, reported on their own internalizing problems, as they are typically

considered better informants of internalizing problems (Angold et al., 1987). Nonetheless, multiple methods of assessment for each outcome would strengthen the measurement design of the present study.

The present study used strong, multi-dimensional measurement of activity involvement, including measures of breadth, commitment, and depth. However, the measurement approach included several limitations. Participants recorded the number of hours per week and weeks per year during which they participated in up to five activities in each of three domains (church, community, and school). Consequently, some participants may have under- or over-estimated the number of hours they spent involved in organized activities. Furthermore, the measure of commitment was relatively narrowly focused and could be expanded to better understand multiple dimensions of commitment to organized activities (e.g., engagement cognitively, spiritually, socially; Ramey et al., 2015).

In the present study, we combined across types of activities (e.g., soccer, gymnastics) as well as domains of involvement (e.g., school, community), which may mask effects that are specific to particular types or domains of activities. Although it is common to collapse across activities (i.e., Eccles & Barber, 1999; Fredricks & Eccles, 2005), variations in benefits across types of activities have been found (Barber et al., 2001; Metsäpelto & Pulkkinen, 2012). For example, participation in school-based activities may be particularly beneficial for academic outcomes (Farb & Matjasko, 2012; Lipscomb, 2007). Participation in church activities has been associated with higher levels of self-esteem among youth (McMahon, Singh, Garner, & Benhorin, 2004; Kang & Romo, 2011). Finally, externalizing problems have been found at different rates by

domain of activity involvement (i.e., sports, Burton & Marshall, 2005; Gardner & Brooks-Gunn, 2009; Miller, Melnick, Barnes, Sabo, & Farrell, 2007) as well as type of externalizing problem (i.e., risky behavior or delinquency, Begg, Langley, Moffitt, & Marshall, 1996; antisocial behavior, Samek et al., 2015).

Although the measurement of activity involvement in the present study was generally strong, other measures of activity involvement would also have been helpful. For example, recent evidence indicates that duration or continuity of activity involvement may contribute to developmental outcomes (Fredricks & Eccles, 2006; Im, Hughes, Cao, & Kwok, 2016). In addition, although the small magnitude of effects should be interpreted in light of the rigorous controls for earlier adjustment and selection factors, the effects might be stronger if activity dimensions such as quality of relationships formed or skills developed within the activity were included (Eccles & Barber, 1999; Larson & Verma, 1999). The present study was also conceptualized within identity and positive youth development frameworks, but no measures designed to assess components of these theories were utilized. Thus, measures of the "5 C's" (Lerner et al., 2005) as well as identity experiences (Erikson, 1968; Meeus et al., 2012) within activities would improve our understanding of activity involvement and adjustment. Finally, few previous studies have included measures such as commitment, motivation, or engagement with activities despite calls in the literature to include a better understanding of this construct (Bohnert et al., 2010). Future research should utilize and expand upon these few studies that measure engagement (e.g., Lynch et al., 2016; Ramey et al., 2015; Shernoff, 2010), motivation (e.g., Fredricks et al., 2002), and commitment (e.g., McConnell & Erath, 2018).

To further understand the selection effect of SES, other features of activities should be studied. For example, including whether activities of interest were accessible or available to youth could explain reasons for non-participation, lack of commitment to activities, or inability to continue participating over time. Understanding reasons for non-participation and their influence on adjustment is an important future direction (Bohnert et al., 2010). In addition, the qualities of the activities available to youth in various socioeconomic contexts would clarify effects of involvement and inform intervention efforts (e.g., adult to adolescent ratio, access to equipment; Fischer & Theis, 2014; Peck et al., 2008; Schuepbach, 2015).

The Child Development Project (Pettit et al., 1999) offered a large, fairly representative sample with multi-method data collection across developmental periods, allowing the multi-informant, longitudinal design of the present study. Despite these major advantages, information about specific activities (e.g., football, drama club) was not available. In addition, multiple consecutive waves of activity involvement were not collected, precluding test of bidirectional associations between activity involvement and adjustment or selection factors. Finally, data for the present sample were collected in the 1990s. It seems unlikely that the underlying function of activity involvement for promoting positive development has changed in the past 20 years, although rates or types of activity involvement may have changed.

Conclusions and Practical Implications

In the present study, we used rigorous models that provided some support for the hypothesized benefits of extracurricular activity involvement based on theoretical frameworks of positive youth development (Lerner, 2005) and identity development

(Erikson, 1968; Marcia, 1966). The positive effects are modest and more consistent with the positive youth development perspective, which suggests that multiple facets of organized activities promote well-being, compared to identity theory, which suggests that specific aspects of activity involvement (e.g., breadth) are particularly important. Of course, these theories refer to much broader developmental experiences than activity involvement alone and this particular study does not directly test identity development or positive youth development.

Several other conclusions can be drawn based on the present study, more advanced statistical modeling that incorporates multiple dimensions of activity involvement is needed to confirm findings in the present study as well as to provide a more comprehensive understanding of activity involvement. Research focused exclusively on a single dimension of activity involvement or that conceptualizes activity involvement as dichotomous (i.e., involved or not) will be less informative. Indeed, an over-reliance on small-sample, cross-sectional designs in the activity involvement literature may have created an inflated appreciation for individual dimensions of participation in organized activities. Results of the present study suggest that breadth, commitment, and depth of activity involvement can contribute to lower internalizing and externalizing problems insofar as the dimensions are related to one another, but the dimensions are somewhat less significant independently. Benefits of activity involvement beyond earlier adjustment and selection factors were less clear for academic and social competence.

Based on the present study, intervention research should consider the potential positive effects of activity involvement on internalizing problems in particular, as the

results were qualified for externalizing problems (and activity involvement was potentially iatrogenic for youth with higher initial externalizing problems) and unclear for social and academic competence. Research should also continue to examine the potential protective effects of activity involvement under conditions of environmental adversity, such as peer and family stress (Driessens et al., 2015; Gardner et al., 2012; McConnell & Erath, 2018), and these studies should also employ rigorous designs, such as multi-dimensional measurement and control for earlier adjustment and selection effects.

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Tables

Table 1.

Hypotheses for Activity Involvement Dimensions and Latent Variable

	Breadth	Depth	Commitment	Latent Model
Academic Competence	+	None	+	+
Social Competence	+	None	+	+
Internalizing Problems	-	None	-	-
Externalizing Problems	-	None	-	-

Table 2.

Descriptive Statistics for All Study Variables

	N	M	SD	Min	Max	Sk
Grade 7 SES	417	39.07	13.19	11.0	66.0	-0.09
Grade 7 AC	379	0.02	0.92	-2.55	1.30	-0.55
Grade 7 TR SC	393	3.77	0.97	1.00	5.00	-0.51
Grade 7 SR Int	409	11.46	7.25	0.00	36	0.66
Grade 7 MR Ext	415	9.15	6.99	0.00	40	0.95
Grade 7 SR Breadth	431	2.32	1.76	0.00	11	0.86
Grade 7 SR Depth	431	227.58	247.63	0.00	1508	1.90
Grade 7 SR Commit	428	3.06	1.49	0.00	4.00	-1.32
Grade 8 AC	333	0.02	0.89	-2.29	1.28	-0.64
Grade 8 TR SC	308	3.45	0.90	1.00	5.00	-0.17
Grade 9 SR Int	374	9.36	7.49	0.00	47	1.28
Grade 8 MR Ext	395	9.24	7.18	0.00	35	1.10

Note: AC = Academic Competence, TR = Teacher Report, SC = Social Competence, SR = Self Report, Int = Internalizing Problems, MR = Mother Report, Ext = Externalizing Problems, Commit = Commitment

Table 3.

Correlations between Selection Variables and All Study Variables

	SES	Social Competence
G7 SES	-	0.32**
G7 Academic Competence	0.43**	0.55**
G7 TR Social Competence	0.32**	-0.55**
G7 SR Internalizing Problems	-0.10*	-0.14**
G7 MR Externalizing Problems	-0.23**	-0.30**
G7 SR Breadth	0.24**	0.22**
G7 SR Depth	0.24**	0.14**
G7 SR Commitment	0.21**	0.22**
G8 Academic Competence	0.44**	0.51**
G8 TR Social Competence	0.29**	0.50**
G9 SR Internalizing Problems	0.02	-0.07
G8 MR Externalizing Problems	-0.21**	-0.33**

Note: G7 = Grade 7, TR = Teacher Report, SR = Self Report, MR = Mother Report, G8 = Grade 8, G9 = Grade 9. * $p < .05$, ** $p < .01$.

Table 4.

Correlations between Gender, Race and All Study Variables

	Gender	Race
G7 Academic Competence	0.18**	-0.35**
G7 TR Social Competence	0.20**	-0.27**
G7 SR Internalizing Problems	0.09	0.05
G7 MR Externalizing Problems	-0.03	0.10
G7 SR Breadth	-0.03	-0.13*
G7 SR Depth	-0.04	-0.10*
G7 SR Commitment	-0.03	-0.10*
G8 Academic Competence	0.16**	-0.42**
G8 TR Social Competence	0.27**	-0.15**
G9 SR Internalizing Problems	0.17**	-0.10
G8 MR Externalizing Problems	-0.06	0.08

Note: G7 = Grade 7, TR = Teacher Report, SR = Self Report, MR = Mother Report, G8 = Grade 8, G9 = Grade 9. * $p < .05$, ** $p < .01$.

Table 5.

Correlations between Dimensions of Activity Involvement and Outcome Variables

	Breadth	Depth	Commitment
G7 SR Breadth	-		
G7 SR Depth	0.60**	-	
G7 SR Commitment	0.62**	0.45**	-
G8 Academic Competence	0.21**	0.27**	0.14*
G8 TR Social Competence	0.16**	0.15*	0.20**
G9 SR Internalizing Problems	-0.13*	-0.11*	-0.19**
G8 MR Externalizing Problems	-0.03	-0.02	-0.09

Note: G7 = Grade 7, TR = Teacher Report, SR = Self Report, MR = Mother Report, G8 = Grade 8, G9 = Grade 9. * $p < .05$, ** $p < .01$.

Table 6.

Cross-Sectional Associations between Dimensions of Activity Involvement and Academic Competence, Social Competence, Internalizing Problems, and Externalizing Problems

	B(SE)	β
Academic Competence		
SES	0.02(0.00)	0.28***
Social Competence	0.42(0.04)	0.44***
Breadth	0.01(0.03)	0.02
Depth	0.08(0.07)	0.06
Commitment	0.01(0.03)	0.01
Social Competence		
SES	0.02(0.00)	0.27***
Breadth	0.06(0.04)	0.10
Depth	-0.05(0.08)	-0.04
Commitment	0.07(0.04)	0.11^{+}
Internalizing Problems		
SES	-0.02(0.03)	-0.03
Social Competence	-0.70(0.40)	-0.09^{+}
Breadth	-0.08(0.28)	-0.02
Depth	-0.17(0.65)	-0.02
Commitment	-0.68(0.31)	-0.14*
Externalizing Problems		
SES	-0.09(0.03)	-0.16***
Social Competence	-1.76(0.37)	-0.25***
Breadth	0.39(0.26)	0.10
Depth	-0.01(0.60)	0.00
Commitment	-0.47(0.28)	-0.10

Note. $^{+}p < .10$, $*p < .05$, $***p < .001$.

Table 7.

Longitudinal Predictors of Academic Competence: Dimensions of Activity Involvement and Interactions between Activity Involvement and Earlier Academic Competence

	Academic Competence	
	B(SE)	β
SES	0.01(0.00)	0.11**
Social Competence	0.08(0.03)	0.09*
Academic Competence	0.73(0.04)	0.73***
Breadth	-0.01(0.02)	-0.02
Depth	0.11(0.06)	0.08*
Commitment	-0.03(0.03)	-0.04
Breadth x AC	0.04(0.03)	0.07
Depth x AC	-0.05(0.07)	-0.03
Commitment x AC	0.00(0.03)	0.00

Note. AC = Academic Competence. $*p < .05$, $**p < .01$, $***p < .001$.

Table 8.

Longitudinal Predictors of Social Competence: Dimensions of Activity Involvement and Interactions between Activity Involvement and Earlier Social Competence

	Social Competence	
	B(SE)	β
SES	0.01(0.00)	0.13*
Social Competence	0.41(0.05)	0.44***
Breadth	0.00(0.04)	-0.01
Depth	0.04(0.08)	0.03
Commitment	0.05(0.04)	0.08
Breadth x SC	0.03(0.04)	0.05
Depth x SC	-0.14(0.09)	0.10
Commitment x SC	-0.01(0.04)	-0.01

Note. SC = Social Competence. $^{+}p < .10$, $*p < .05$, $**p < .01$, $***p < .001$.

Table 9.

Longitudinal Predictors of Internalizing Problems: Dimensions of Activity Involvement and Interactions between Activity Involvement and Earlier Internalizing Problems

	Internalizing Problems	
	B(SE)	β
SES	0.07(0.03)	0.12*
Social Competence	-0.17(0.37)	-0.02
Internalizing Problems	0.51(0.05)	0.50***
Breadth	-0.02(0.27)	-0.01
Depth	-0.38(0.62)	-0.03
Commitment	-0.44(0.29)	-0.09
Breadth x IP	-0.01(0.04)	-0.01
Depth x IP	0.04(0.10)	0.03
Commitment x IP	-0.04(0.04)	-0.06

Note. IP = Internalizing Problems. *$p < .05$, ***$p < .001$.

Table 10.

Longitudinal Predictors of Externalizing Problems: Dimensions of Activity Involvement and Interactions between Activity Involvement and Earlier Externalizing Problems

	Externalizing Problems	
	B(SE)	β
SES	0.00(0.02)	0.00
Social Competence	-0.86(0.25)	-0.12***
Externalizing Problems	0.79(0.03)	0.77***
Breadth	-0.09(0.18)	-0.02
Depth	0.42(0.41)	0.04
Commitment	-0.05(0.20)	-0.01
Breadth x EP	0.01(0.03)	0.02
Depth x EP	0.05(0.06)	0.03
Commitment x EP	0.04(0.03)	0.06

Note: EP = Externalizing Problems. *$p < .05$, ***$p < .001$.

Table 11.

Cross-Sectional Structural Equation Model of Associations between Activity Involvement and Academic Competence, Social Competence, Internalizing Problems, and Externalizing Problems

	B(SE)	β
Academic Competence		
SES	0.02(0.00)	0.28***
Social Competence	0.42(0.04)	0.45***
Activity Involvement	0.15(0.10)	0.07
Social Competence		
SES	0.02(0.00)	0.27***
Activity Involvement	0.36(0.12)	0.17**
Internalizing Problems		
SES	-0.01(0.03)	-0.03
Social Competence	-0.71(0.41)	-0.10^{+}
Activity Involvement	-2.35(0.91)	-0.15**
Externalizing Problems		
SES	-0.09(0.03)	-0.16***
Social Competence	-1.80(0.37)	-0.26***
Activity Involvement	0.40(0.83)	0.03

$^{+}p < .10$, ***$p < .001$

Table 12.

Longitudinal Structural Equation Model of the Direct and Interactive Associations between Activity Involvement and Academic Competence

Academic Competence		
	B(SE)	β
SES	0.01(.00)	0.12**
Social Competence	0.07(.03)	0.08*
Academic Competence	0.75(.04)	0.74***
Activity Involvement	-0.02(.08)	0.00
ACxActivityInvolvement	0.18(.09)	0.08^{+}

Note. AC = Academic Competence. $^{+}p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$

Table 13.

Longitudinal Structural Equation Model of the Direct and Interactive Associations between Activity Involvement and Social Competence

Social Competence		
	B(SE)	β
SES	0.01(0.00)	0.13*
Social Competence	0.40(0.05)	0.43***
Activity Involvement	0.18(0.14)	0.09

*$p < .05$, ***$p < .001$

Table 14.

Longitudinal Structural Equation Model of the Direct and Interactive Associations between Activity Involvement and Internalizing Problems

Internalizing Problems		
	B(SE)	β
SES	0.06(.03)	0.11*
Social Competence	-0.18(.37)	-0.02
Internalizing Problems	0.52(.05)	0.51***
Activity Involvement	-1.85(.87)	-0.11*

$^{+}p < .10$, *$p < .05$, ***$p < .001$

Table 15.

Longitudinal Structural Equation Model of the Direct and Interactive Associations between Activity Involvement and Externalizing Problems

Externalizing Problems		
	B(SE)	β
SES	0.01(0.02)	0.01
Social Competence	-0.89(0.27)	-0.12***
Externalizing Problems	0.80(0.04)	0.76***
Activity Involvement	0.29(0.71)	0.02
ExtxActivityInvolement	0.28(0.07)	0.12***

Note. Ext = Externalizing Problems. ***$p < .001$

Figures

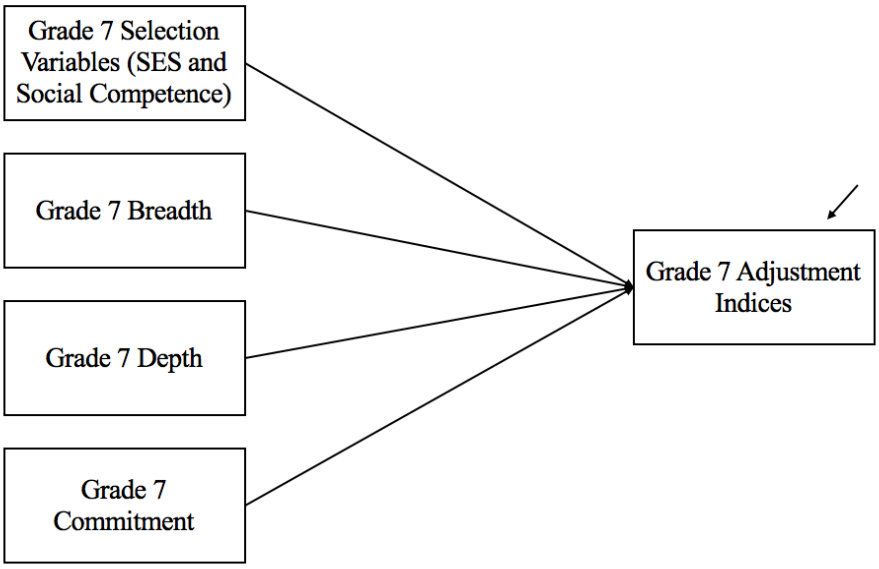

Figure 1. Hypothesized Path Model: The Cross-Sectional Associations between Dimensions of Activity Involvement and Adjustment Outcomes. *Note.* All correlations between predictor variables were included.

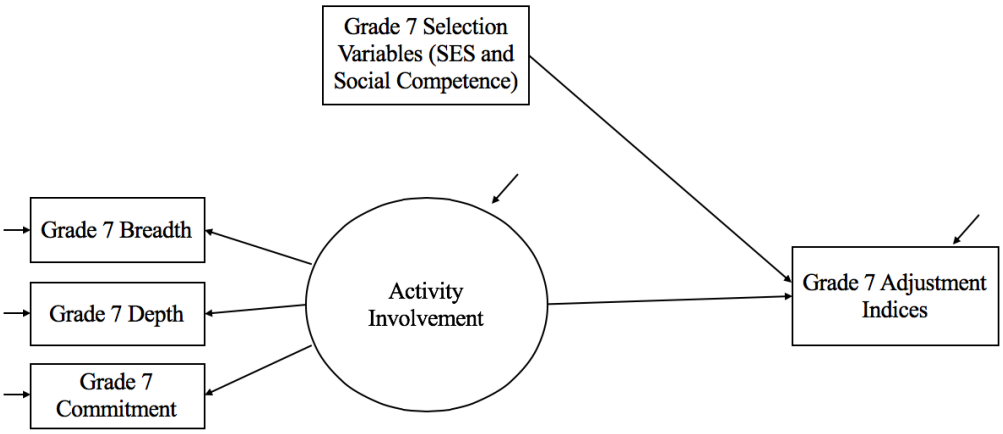

Figure 2. Hypothesized Structural Equation Model: The Cross-Sectional Association between Activity Involvement and Adjustment Outcomes. *Note.* All correlations between predictor variables were included.

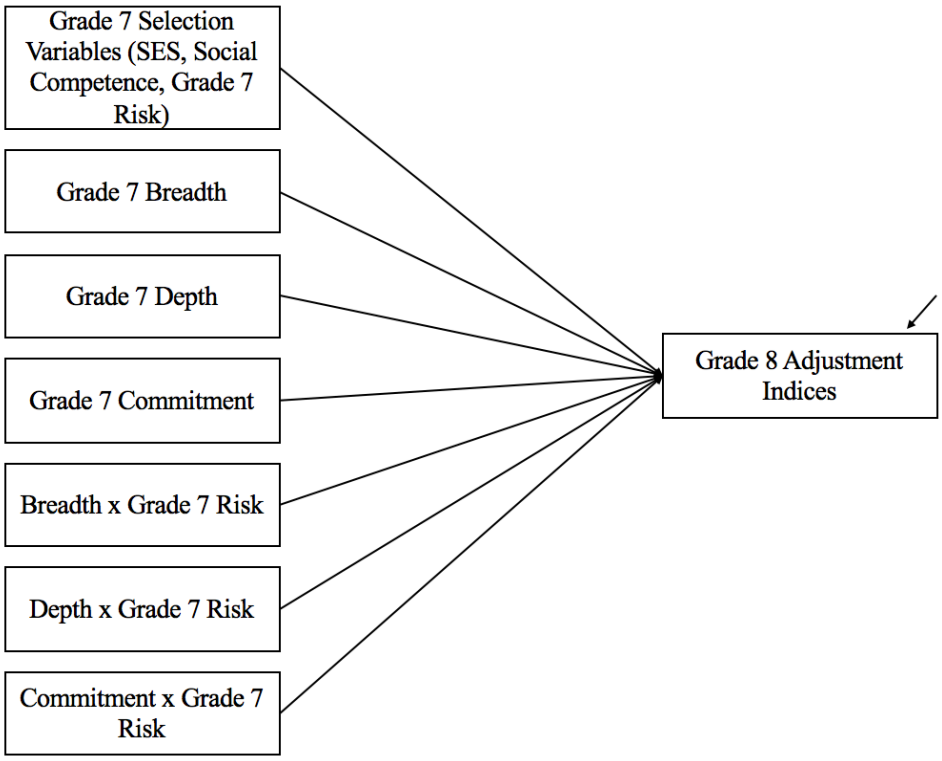

Figure 3. Hypothesized Path Model: The Longitudinal Associations between Dimensions of Activity Involvement and Adjustment Outcomes. *Note.* All correlations between predictor variables were included.

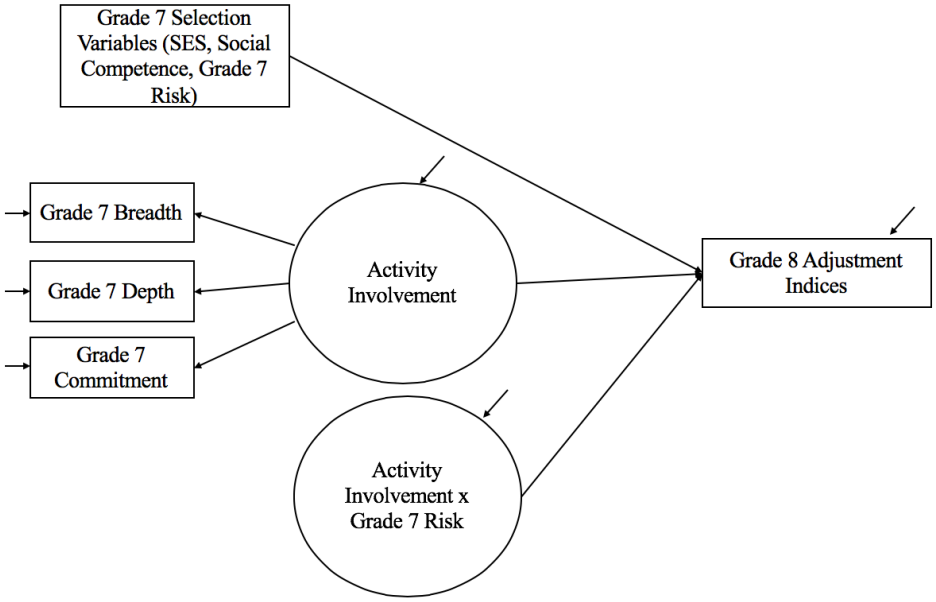

Figure 4. Hypothesized Structural Equation Model: The Longitudinal Association between Activity Involvement and Adjustment Outcomes. *Note.* All correlations between predictor variables were included.

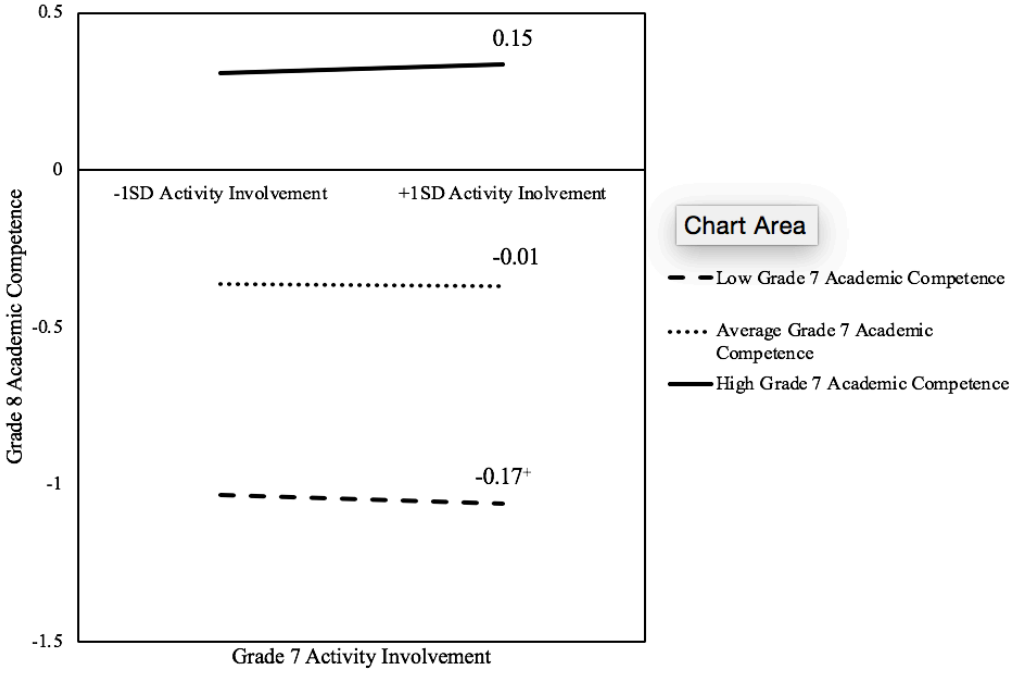

Figure 5. Associations between Grade 7 Activity Involvement (latent variable) and Grade 8 Academic Competence at Higher (+1SD), Average, and Lower (-1SD) Levels of Grade 7 Academic Competence. *Note.* $^{+}p < .10$.

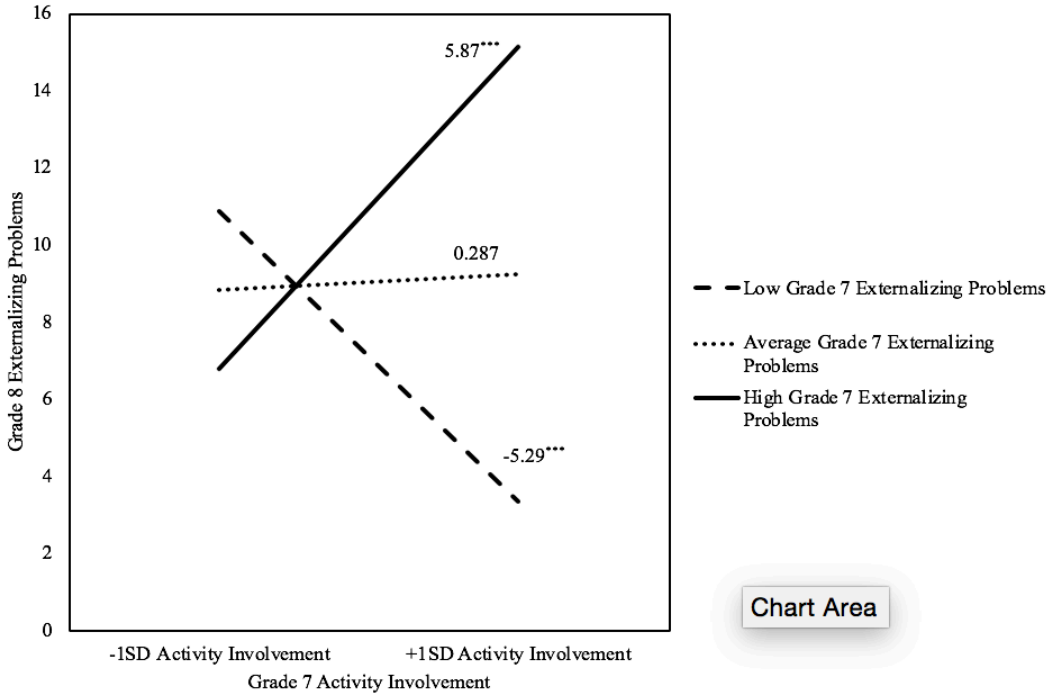

Figure 6. Associations between Grade 7 Activity Involvement (latent variable) and Grade 8 Externalizing Problems at Higher (+1SD), Average, and Lower (-1SD) Levels of Grade 7 Externalizing Problems. *Note.* ***$p < .001$.

Appendix A

Measures

Adolescent-Reported Organized Activity Involvement

We are interested in knowing some things about how you spend your free time. We would like to consider this past summer and the full current school year.

1. First we would like to know if you are involved in any extracurricular activities at school, such as sports teams, clubs, and student council. We are interested only in those activities that take place before or after normal school hours. Please name each of the extracurricular activities in which you are officially involved:

1. Name of activity
2. Name of activity
3. Name of activity
4. Name of activity
5. Name of activity

Now, please tell us how many hours each week and how many weeks per year that you spend in each activity. One full school year is 40 weeks, so if you are involved all school year that would be 40 weeks. One semester would be 20 weeks. The summer time is considered 12 weeks. Next, for each activity please use this scale to tell us how much you are satisfied with each activity and how committed you feel to this group. The scale points are:

1. Not very satisfied or committed, might quit soon.
2. A little satisfied, probably will continue for a while
3. Satisfied, will continue
4. Quite satisfied, definitely want to stay involved
5. Extremely satisfied, activity is very important to me, highly committed

2. Now let's consider church-based activities, such as clubs, fellowship groups, and things like that. Please list each activity.

1. Name of activity
2. Name of activity
3. Name of activity
4. Name of activity
5. Name of activity

Now, please tell us how many hours each week and how many weeks per year that you spend in each activity. One full school year is 40 weeks, so if you are involved all school year that would be 40 weeks. One semester would be 20 weeks. The summer time is considered 12 weeks. Next, for each activity please use this scale to tell us how much you

are satisfied with each activity and how committed you feel to this group. The scale points are:

1. Not very satisfied or committed, might quit soon.
2. A little satisfied, probably will continue for a while
3. Satisfied, will continue
4. Quite satisfied, definitely want to stay involved
5. Extremely satisfied, activity is very important to me, highly committed

3. Now let's consider neighborhood and community programs, like the YMCA, Boys and Girls Club, a neighborhood recreation center, neighborhood sports teams, and other programs. Please name each of those activities that you have joined.

1. Name of activity
2. Name of activity
3. Name of activity
4. Name of activity
5. Name of activity

Now, please tell us how many hours each week and how many weeks per year that you spend in each activity. One full school year is 40 weeks, so if you are involved all school year that would be 40 weeks. One semester would be 20 weeks. The summer time is considered 12 weeks.

Also, please list here any other program or activity that you are involved in that you have not yet named, such as music lessons and special groups.

Next, for each activity please use this scale to tell us how much you are satisfied with each activity and how committed you feel to this group. The scale points are:

1. Not very satisfied or committed, might quit soon.
2. A little satisfied, probably will continue for a while
3. Satisfied, will continue
4. Quite satisfied, definitely want to stay involved
5. Extremely satisfied, activity is very important to me, highly committed

Teacher-Reported Social Competence

Instructions: How good is this child at each of the following skills?

	Very Poor	Somewhat Poor	Average	Good	Very Good
1. Understanding of others' feelings	1	2	3	4	5
2. Being socially aware of what is happening in a situation?	1	2	3	4	5
3. Accurately interpreting what a peer is trying to do?	1	2	3	4	5
4. Refraining from over-impulsive responding.	1	2	3	4	5
5. Generating many solutions to interpersonal problems.	1	2	3	4	5
6. Generating good quality solutions to interpersonal problems.	1	2	3	4	5
7. Being aware of the effects of his/her behavior on others.	1	2	3	4	5