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Capturing Unique Dimensions of Youth Organized Activity Involvement: Theoretical and Methodological Considerations

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Despite increased focus on the effects of organized activities on youth development, there is currently no consensus about the best way to assess various dimensions of involvement. This article explores the complexities of assessing involvement and focuses specifically on the following organized activity dimensions: (a) breadth, (b) intensity, (c) duration/consistency, and (d) engagement. For each dimension, the article examines the theoretical underpinnings for why it is important to measure the dimension, presents measurement issues that have arisen in previous studies, describes how the dimension relates to developmental outcomes, and offers recommendations for assessing it in future use. A conceptual model is presented to describe issues that are important to consider when assessing various dimensions of organized activity involvement in future research.

KEYWORDS: organized activities, developmental outcomes, positive youth development

In the United States, participation in organized activities is a normative experience for many youth. In recent national surveys, more than 70% of children and adolescents report participating in one or more organized activities over the past year (Feldman & Matjasko, 2005; Mahoney, Harris, & Eccles, 2006), with rates of involvement significantly lower for low-income and minority youth (Pedersen & Seidman, 2005). *Organized activities* is a blanket term that refers to a broad range of adult-sponsored activities that fall outside the regular school curriculum and include diverse contexts such as school-based extracurricular activities, community organizations, and youth development programs. Despite the differences in focus, organized activities share several common features. The activities are generally voluntary, hold regularly scheduled meetings, are supervised by adults,

include other participants, are organized around particular competencies, and tend to be rule-based (Eccles & Gootman, 2002; Mahoney, Larson, & Eccles, 2005).

Initially, studies considering the developmental outcomes related to organized activity involvement compared participants in one or more activities to nonparticipants, thus treating involvement as an “all-or-nothing,” dichotomous variable (see Barber, Eccles, & Stone, 2001; Eccles & Barber, 1999; Fredricks & Eccles, 2006b, for examples). An assumption underlying this approach is that the respondents in the “participant” group are identical in their involvement. This approach fails to capture important differences between individuals in the intensity, duration, and nature of their involvement. Another problem with this approach is that the “nonparticipant” group is made up of three different types of youth: (a) individuals who are not involved in any organized contexts, (b) individuals who are nonparticipants in the contexts being assessed but are involved in other organized activities, and (c) individuals who want to participate but are not able to do so. Because involvement in any organized activity is associated with more favorable outcomes than no participation (see Feldman & Matjasko, 2005), combining these three types of youth into one category can produce misleading results concerning the effect of organized involvement. Although findings from these early studies were promising, scholars have increasingly emphasized approaches that capture the complexities of activity participation (Fredricks & Eccles, 2006a; Holland & Andre, 1987; Rose-Krasnor, Busseri, Willoughby, & Chalmers, 2006).

Several recent reviews have considered the multifaceted nature of participation in out of school-time activities and its relation to various outcomes, although not to the extent of the current paper. For instance, Simpkins, Little, and Weiss (2004) described various dimensions of attendance related to out of school time programming including intensity, duration, and breadth of involvement and developmental outcomes associated with these dimensions. A second review conducted by the Harvard Family Research Project that built on the paper by Simpkins and her colleagues presented a conceptual model that elaborated on the key components of youth participation in organized activities that included enrollment, attendance, and engagement (Weiss, Little, & Bouffard, 2005). Mahoney, Vandell, Simpkins, and Zarrett (2009) discussed many of these same dimensions in a review chapter but made a distinction between the “amount of exposure” to organized activities (i.e., breadth, intensity, duration) and engagement, which is conceptualized as a component of the adolescent’s experience within the activity context. As compared to the current article, the Mahoney et al. review focuses on activity involvement only during adolescence and describes developmental outcomes primarily in relation to type of activity or by participation versus no-participation rather than by various dimensions of involvement. Most recently, Roth, Malone, and Brooks-Gunn (in press) focused exclusively on after-school programs and discussed outcomes related to multiple dimensions of program participation including intensity, duration, breadth, engagement, as well as total exposure (i.e., frequency of attendance over multiple years). Collectively, these reviews have moved the field closer to consensus by suggesting the importance of assessing breadth, intensity, duration, and engagement when conceptualizing and measuring involvement in organized activities.

Unlike these prior reviews, the current article focuses exclusively on providing a thorough, in-depth analysis of the theoretical, methodological, and practical

considerations when defining and assessing these dimensions of organized activity involvement related to school- and community-based organized activities among both children and adolescents. These dimensions were chosen in part because they may represent unique experiences at different points in development. Furthermore, research suggests that there is a related, but distinct, developmental progression and decline in these various dimensions of involvement (see Denault & Poulin, 2009a; Rose-Krasnor et al., 2006).

Drawing on a variety of theoretical perspectives, we address the following questions for each dimension of involvement: (a) Why is this dimension important? (b) What are the various approaches used to obtain information about this dimension? (c) What are potential strengths and limitations of each approach? (d) How does the dimension relate to particular outcomes at various points in development? (e) Which approach should be used in future work for assessing this dimension of involvement? Definitive information about how to capture organized activity participation is still lacking, even if there is growing consensus about what distinct dimensions of involvement are important to measure. Thus, we provide a “best practices” approach to assessing various dimensions of involvement (see Table 1). We acknowledge, however, that the decisions related to (a) which dimensions of involvement should be assessed and (b) how each dimension should be assessed are dependent on the goals of a given study as well as various theoretical and developmental considerations which are articulated in the current article. In addition, we provide a conceptual model (see Figure 1) that captures the interrelatedness of these various activity dimensions as well as their links to various predictors and developmental outcomes over time.

Conceptual Model

The conceptual model depicted in Figure 1 suggests that a variety of demographic (i.e., age, socioeconomic status, gender, and race/ethnicity), individual (i.e., interest, competence, value), peer (i.e., values, peers in activity), family (i.e., values, level of encouragement, parenting style, flexibility of work arrangements), school (i.e., size, availability of opportunities), and neighborhood (i.e., availability of opportunities, safety, socioeconomic status, transportation) factors are related to organized activity participation. Although a discussion of these predictors is beyond the scope of this article, we describe the extent to which studies have adjusted for these self-selection factors in our review (see Mahoney et al., 2009, for more discussion). As suggested previously by Mahoney and colleagues (2009), this model indicates that these dimensions of participation are temporally related. In addition, the inclusion of the reference to time in our model also reflects the fact that in many instances there is a developmental progression to these various dimensions of involvement (Denault & Poulin, 2009a; Rose-Krasnor et al., 2006). Intensity, or the frequency of attendance, and breadth, or involvement in a range of activity contexts, precedes duration, which is an indicator of the length of involvement. There is also a dynamic and reciprocal relation between the indicators of participation (i.e., breadth, intensity, duration) and engagement (i.e., behavioral, emotional, cognitive). More intense participation leads to higher engagement, which in turn leads to higher levels of involvement.

TABLE 1

Best practices for the assessment of activity indices

<i>Dimension</i>	<i>Recommended assessment strategies</i>
Breadth	(1) Assess total number of different activity contexts participated in (i.e., group activities by predetermined categories and then sum the number of categories satisfied) (2) Use dispersion methods (i.e., create homogeneity indices)
Intensity	(1) Assess average hours/week spent in all organized activities (2) Assess total number of hours/week for each activity type (3) Use time diary methods to collect data on intensity (4) If possible, take multiple measures of involvement to detect seasonal variations in intensity
Duration	(1) Assess years spent in each organized activity context (i.e., sports) (2) Utilize longitudinal study design to explore consistency of involvement across multiple years (i.e., fluidity)
Engagement	(1) Develop individual measures of behavioral, emotional, and cognitive engagement and assess these measures over time. See school literature for examples (2) Use experience sampling method (ESM) techniques to assess behavioral and emotional engagement (3) Use qualitative techniques to capture the dynamic and interactive nature of engagement over time

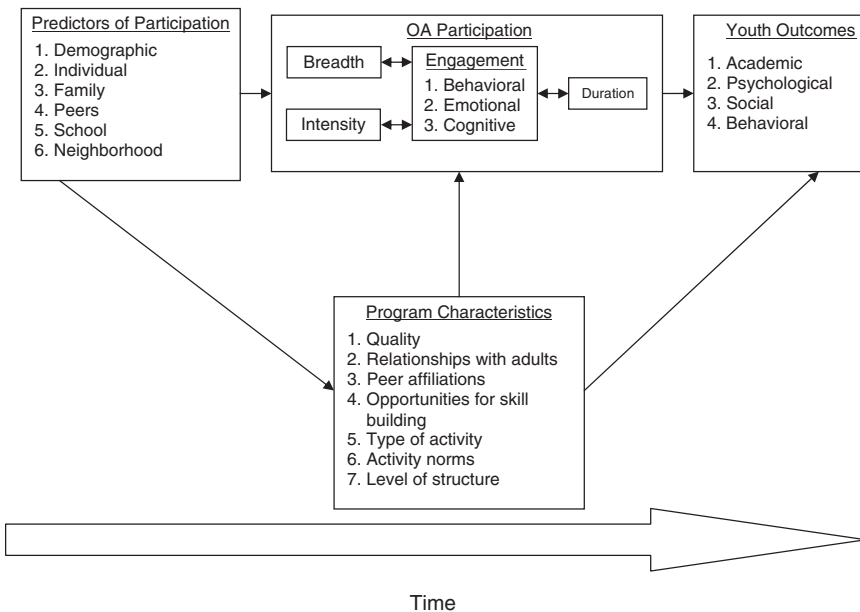


FIGURE 1. *Conceptual model of participation in organized activities (OA).*

These dimensions are also influenced by characteristics of the activity context including quality, relationships with adults, peer affiliations and interactions, opportunities for skill building, the variety and type of activities, activity norms, and level of structure; however, more research is needed to explore how these activity characteristics facilitate participation and engagement (Mahoney et al., 2009). Finally, these dimensions are related to various indicators of youth development (i.e., academic, social, psychological, and risk behaviors), and outcomes have been shown to vary depending on a variety of factors including the activity dimension assessed (see Busseri, Rose-Krasnor, Willoughby, & Chalmers, 2006; Fredricks & Eccles, 2006b; Rose-Krasnor et al., 2006).

Method

In this review, we focus primarily on the literature relating to school- and community-based organized activities. A broad literature search was conducted using several databases, including ERIC, PsycINFO, Academic Search Premier, PsycARTICLES, and PsycBOOKS. Keywords and phrases that were searched included *organized activities*, *extracurricular activities*, *participation*, *youth*, *adolescent*, as well as *experience sampling method* and *time-use diaries* in an effort to locate all studies using a variety of methods to capture organized activity involvement. Following this initial approach, a search of studies published by leading experts in the field of organized activities was conducted to verify inclusion of all relevant studies. Studies were included if they utilized at least one of the previously described dimensions of involvement (i.e., breadth, intensity, duration, engagement). Studies that were both quantitative and qualitative in nature and utilized survey, experience sampling, time-use diaries, and observational methods for data collection were included. Research on after-school programs is mentioned only in sections where there is no comparable literature on school- and community-based organized activities. The appendix summarizes the definitions, measures, sample, methods, and findings that relate to each of the four dimensions in all available empirical studies; however, reviews and theoretical papers are not listed. When available we indicate effect size estimates and self-selection factors controlled for in analyses.

Breadth

One dimension of activity involvement assessed in prior research is breadth of involvement, defined as the number of different activity contexts participated in (i.e., sports, performing arts, prosocial activities). During both middle childhood and adolescence, a majority of youth report participating in several different organized activities simultaneously (Jacobs, Vernon, & Eccles, 2005; Theokas, Lerner, Lerner, & Phelps, 2006). However, until recently, few studies have included indicators of breadth of participation in analyses. Drawing conclusions from these findings is complicated by the fact that researchers have used a variety of variable centered analytic strategies to measure breadth, including the total number of activities, the total number of different activity contexts, and activity dispersion. Other studies have used cluster analytic techniques to create profiles of involvement.

Why Measure Breadth?

There are a variety of developmental and theoretical reasons why it is important to assess breadth. First, Marcia's (1966) work on identity development indicated

that youth benefit from exploring different roles and identities before they commit to a particular path. Moreover, by participating in a broad range of contexts, youth can experience a wider range of activity-related growth experiences (Hansen, Larson, & Dworkin, 2003). Prior research has uncovered differences in developmental experiences by type of activity participation, including opportunities to hone teamwork skills, engage in identity exploration, and promote emotional competence (Hansen et al., 2003). Furthermore, youth who are involved in a range of activity contexts tend to develop a larger support network, thus widening their “social convoy” of both nonfamilial adults and prosocial peers (Kahn & Antonucci, 1980). Moreover, the characteristics of youth who attend different activities vary (Eccles & Barber, 1999; Fredricks & Eccles, 2005). As a consequence, breadth likely increases exposure to different types of peers. Thus, breadth may be particularly important in early adolescence when youth are exploring different interests and strengthening ties with peers as they attempt to both establish their identity and find a peer group in which they belong.

Arena of comfort theory (Call & Mortimer, 2001; Simmons & Blyth, 1987) provides another theoretical rationale for assessing breadth. Simmons and Blyth (1987) argue that varied contexts provide different opportunities for positive development and risk. Further, involvement in multiple arenas affords youth greater exposure to challenging activities as well as more opportunities to learn skills and develop relationships that can help youth successfully cope with changes (Call & Mortimer, 2001). Additionally, self-complexity theory (Linville, 1985) may explain the beneficial effects of a varied participation profile. According to this theory, individuals who invest their time and effort in a range of contexts are better able to cope with stressful events that occur in a particular activity than individuals who commit all their resources to one activity.

Measurement Strategies

Researchers have assessed breadth using a variety of variable-centered techniques including (a) total number of activities (e.g., Bussieri et al., 2006; Rose-Krasnor et al., 2006); (b) total number of different activity contexts (e.g., Bohnert, Aikins, & Edidin, 2007; Fredricks & Eccles, 2006a, 2006b; Randall & Bohnert, 2009); and (c) activity dispersion, or the extent to which participation is concentrated in one domain or multiple domains (Fredricks & Eccles, 2006a; Jacobs et al., 2005). Given previous findings that participation in several activity domains has been associated with unique patterns of outcomes (e.g., Barber & Eccles, 1999), using *total number* of activities as an indicator of breadth can be problematic because it does not capture the extent to which youth are involved in different *types* of activities. For example, youth who participate in two activities in the same activity category (i.e., soccer and volleyball) are given the same breadth score as youth who are involved in two activities in different domains or contexts (i.e., soccer and guitar). Thus, calculating breadth using the total number of activities does not allow for analyzing outcomes specific to participating in several different activity contexts.

A second method for capturing breadth is to assess the number of different activity domains in which a youth is involved. Participants receive a “yes” or “no” depending on whether or not they participated in any activity (i.e., swimming) that falls under a certain activity category predetermined by the researcher (i.e., sports).

The number of different activity contexts is then totaled, and participants are assigned a “breadth score.” One problem with this measure of breadth is that there is no consensus concerning what distinct categories should be used to group different types of activities, in part because the number of activity categories used depends on the age of the participants. Adolescents typically have access to a wider variety of activities than younger children. In addition, the measure of breadth varies depending on the number of activities included on questionnaires, ranging from three to eight different types of activities (i.e., sports, performing arts). Another challenge is that researchers use different time frames to measure breadth (i.e., over an “average week,” over the past month, over the past 3 months, or during the previous year). Because researchers rarely account for the time frame of measurement, breadth may thus reflect the number of different activity contexts a youth participates in at one time (simultaneously) *or* across an extended period of time (nonoverlapping). Although researchers do not utilize uniform standards related to the number of activity contexts or time frame assessed, using the number of different activity contexts to measure breadth of involvement more effectively captures the variety in youth participation and highlights the range opportunities youth have to develop relationships and skills.

A third way to capture breadth is by assessing activity dispersion, or the extent to which participation is concentrated in one domain or multiple domains. For example, Jacobs et al. (2005) created a homogeneity index and three proportion variables (i.e., total number of team sports/total number of activities, individual sports/total number of activities, and music & drama/total number of activities) in a study designed to examine various predictors of involvement during middle childhood. Fredricks and Eccles (2006a) used a similar strategy to create a homogeneity index across five different activity domains. This index ranged from .20 to 1.00, with numbers closer to 1.00 indicating greater homogeneity of participation. This approach allows researchers to describe the amount of participation in one or multiple categories relative to a youth’s overall level of involvement.

A related but distinct method of assessing breadth comes from research using cluster analytic techniques to create profiles of activity involvement. This approach provides information on qualitative differences in the patterns of participation, which differs from variable-centered measures of breadth, which give information on the number of different activity categories. Cluster analysis groups adolescents based on their shared participation in different activities. Researchers employing this methodology have included different structured and unstructured activities in their profiles but have tended to create similar groupings (i.e., youth who participate in multiple activities, those who focus in a single domain, and those who are uninvolved) (e.g., Bartko & Eccles, 2003; Blomfield & Barber, 2009; Linver, Roth, & Brooks-Gunn, 2009; Morris & Kalil, 2006; Peck, Roesner, Zarrett, & Eccles, 2008; Zarrett et al., 2009). The advantage of this technique is that it allows researchers to examine how combinations of certain activities (e.g., the benefits of combining sports with academic clubs) may be uniquely related to a range of outcomes.

Breadth and Developmental Outcomes

In general, both cross-sectional and longitudinal research demonstrates that youth who participate in a wide range of activities experience more positive

academic and *social* outcomes, after adjusting for a range of self-selection factors. For example, in a cross-sectional study of adolescents, breadth of participation, assessed by total number of activities, was positively associated with an index of academic orientation and an index of interpersonal functioning after adjusting for age, sex, parental education, and intensity of involvement (Rose-Krasnor et al., 2006). In longitudinal analyses with this sample, Busseri and colleagues (2006) found that breadth of participation predicted changes in interpersonal functioning 20 months later but did not predict changes in academic orientation; however, increases in breadth across time did after adjusting for demographic characteristics and prior levels of breadth and intensity. Controlling for achievement and demographic factors, Fredricks and Eccles (2006a) found that breadth of involvement, as assessed by the total number of different activity contexts, was positively associated with school belonging, higher grades, psychological resilience, and a positive peer context but negatively associated with psychological distress among a sample of older adolescents. Most recently, Denault and Poulin (2009a), as assessed by total number of different activity contexts, reported that higher levels of breadth in early to mid-adolescence predicted a more positive academic orientation and greater civic engagement by late adolescence after adjusting for family income and prior levels of outcome variables. With regard to social adjustment, Bohnert, Aikins, et al. (2007) found, however, that breadth of involvement, as assessed by the total number of activities, was not associated with levels of loneliness or friendship quality among a college-aged sample.

The relation between breadth of participation and psychological adjustment and risk behaviors has been mixed and varies by sample, outcome, whether the study was cross-sectional or longitudinal, and the self-selection factors included in analyses. Breadth of participation, as assessed by total number of activities, was associated with a concurrent index of well-being in a large sample of Canadian adolescents, though it was not significant in the longitudinal analyses (Busseri et al., 2006; Rose-Krasnor et al., 2006). In a primarily African American sample, after controlling for some self-selection factors and the prior level of the dependent variable, breadth of participation was negatively associated with parents' reports of externalizing and internalizing symptoms but was unrelated to youths' self-reports of self-esteem and psychological distress (Fredricks & Eccles, 2006b). In two studies of adolescents, breadth of participation predicted lower substance use but was not associated with delinquency or troublemaking behaviors (Fredricks & Eccles, 2006b; Rose-Krasnor et al., 2006). Finally, using an overall composite of risky behaviors, Busseri and colleagues (2006) found that increases in breadth predicted decreased risk behaviors in 14- to 17-year-olds.

Person-centered approaches. Other evidence of the outcomes of breadth of participation comes from research using cluster analytic techniques (i.e., Bartko & Eccles, 2003; Blomfield & Barber, 2009; Harrison & Narayan, 2003; Linver et al. 2009; Metzger, Crean, & Forbes-Jones, 2009; Morris & Kalil, 2006; Pedersen et al., 2005; Zarrett et al., 2009). These studies consistently find that youth who are involved in multiple organized activity contexts demonstrate more favorable academic and psychological adjustment and fewer risk behaviors than individuals involved in one context, who then fare better than nonparticipants (Blomfield & Barber, 2009; Harrison & Narayan, 2003; Linver et al., 2009; Zarrett et al., 2009).

For example, one recent longitudinal study using a cluster analytic approach reported that, among adolescents at risk for poor academic outcomes, involvement in more than one type of activity was associated with higher levels of educational attainment (Peck et al., 2008).

Nonlinear relations. A few studies have tested for nonlinear relations between breadth and adjustment to determine if there is a threshold level of participation. Interest in nonlinear relations has been guided by popular media reports of the potential negative developmental consequences (i.e., disrupted family functioning and compromised well-being) among overscheduled adolescents, with “overscheduling” referring to both number of activities and time spent in activities (Luthar & Sexton, 2004; Rosenfeld & Wise, 2000). Few studies have found support for the overscheduling hypothesis, though there is some evidence to support a threshold effect, or a point at which greater involvement begins to be associated with less favorable outcomes. These studies suggest that the threshold level is very high. For example, Rose-Krasnor and colleagues (2006) documented nonlinear relations between breadth, as assessed by the total number of activities, and academic orientation and risk behaviors. They found that scores on these two outcomes improved as the breadth increased and then leveled off at five or six activities. However, these nonlinear effects did not persist in longitudinal analyses of the same sample of youth (Busseri et al., 2006). Other studies have suggested that moderate levels of breadth of involvement might be less advantageous, but these studies have not adequately captured the full range of organized activities. For instance, Randall and Bohnert’s (2009) cross-sectional study demonstrated that adolescents participating in a narrow (i.e., one or fewer) or wide (i.e., three or more) range of breadth of activities reported *lower* levels of depressive symptoms than those moderately involved, but their measure of breadth did not extend past four activity contexts. Similarly, in a large sample of youth from Chicago neighborhoods, Fauth, Roth, and Brooks-Gunn (2007) documented a nonlinear relation between breadth, as assessed by total number of activity contexts, and delinquency, such that delinquency scores were *highest* among youth who engaged in an average number of activities (\cap -shaped); however, the study included only five different types of activities.

To summarize, research using both variable- and person-centered analytic strategies across a range of samples and ages suggests that getting involved in various activity contexts (i.e., breadth) is beneficial to youth development, particularly relating to academic outcomes. Although there are some discrepant findings, research seems to suggest that greater breadth of involvement may be particularly important during early to mid-adolescence. When considering risk behaviors and psychological outcomes, findings vary depending on the risk behavior assessed. Specifically, greater breadth appears to be associated with lower levels of substance use but unrelated to delinquent behaviors. For social outcomes, being involved in different activity contexts appears to put youth in contact with more prosocial peers but does not appear to positively influence the quality of best friendships among college students. Studies examining nonlinear findings generally suggest that the benefits of breadth levels off at a high level of involvement. In contrast, two studies with urban youth suggest that moderate levels of breadth are most problematic, but both studies included only a limited number of activities that may not capture the full range of activities that youth participate in.

Based on this prior work, the recommended strategies for assessing breadth include (a) assessing the total number of different activity contexts (i.e., grouping activities by predetermined categories and then summing the number of categories satisfied) and (b) using dispersion methods including creation of homogeneity indices (see Fredricks & Eccles, 2006a; Jacobs et al., 2005) or (c) using person-centered approaches such as cluster analysis to describe the patterns or profiles of participation (see Table 1).

Intensity

Another commonly assessed dimension of activity involvement is *intensity* of participation, which is defined as how frequently a youth participates in a particular activity or activity context. Others have used the term *dosage* to describe intensity, drawing on the medical notion of amount of exposure to a treatment (Hansen & Larson, 2007; Simpkins et al., 2004). Some studies measure intensity in terms of number of hours per week, whereas others assess the number of times per week that a youth participates. Likewise, whereas some studies assess intensity in a particular type of activity (i.e., sports), others measure intensity across all of the activities the youth may be engaged in during a designated period of time. Furthermore, some studies compare participants at a high level of involvement to nonparticipants, whereas other studies compare youth across a range of intensity levels.

Why Measure Intensity?

There are a variety of theoretical and developmental reasons why intensity is important to assess. A positive youth development perspective suggests that organized activities are unique learning structures that provide opportunities for growth and development (Eccles & Gootman, 2002; Roth & Brooks-Gunn, 2003) and that more time spent in activities provides an index of socialization experiences as well as greater absorption of skills (Larson & Verma, 1999). This suggests that youth need frequent exposure to an activity context to experience the positive developmental outcomes associated with participation in that environment (Hansen & Larson, 2007; Larson & Verma, 1999). More time spent in an activity also helps individuals to become more attuned to the developmental affordances present in the setting (Heft, 1988). Additionally, more frequent participation may help youth to develop stronger and deeper relationships with peers and adults in the activity setting (Bohnert, Aikins, et al., 2007; Fredricks & Eccles, 2005). Furthermore, youth who are involved in organized activities where they can be supervised by adults have less time available to spend in unstructured and unsupervised contexts activities, both of which have been linked to less positive developmental outcomes during adolescence (Bohnert, Richards, Kohl, & Randall, 2009; Mahoney & Stattin, 2000; Osgood, Wilson, O'Malley, Bachman, & Johnston, 1996).

Measurement Issues

A variety of survey approaches have been used to capture intensity of organized activity participation. First, some researchers have used total number of activities as an indicator of intensity (see Bohnert & Garber, 2007; Bohnert, Kane, & Garber, 2008). This strategy is problematic, in part, because it is both a measure of breadth and intensity and does not accurately capture how much discretionary time youth

are dedicating to organized activities. Another approach to capturing intensity is by having youth select from a series of predetermined responses which best represents their intensity of involvement. For instance, youth indicate how often during a week or a month they participate in a particular activity (i.e., ranging from *never* to *every day*). In certain instances, researchers used a fixed-choice format (i.e., one to three times per week) to indicate how often they are engaged in a particular activity or use a global rating such as *never to a lot*. Another related fixed-format strategy involves having youth circle a response that indicates a range of hours that they participated in one or multiple activities each week (i.e., 1 to 5 hours, 6 to 10 hours). By forcing intensity into predetermined levels, researchers lose detail about how much time youth are spending in activities each week as well as forfeit statistical power in analyses. Furthermore, when intensity is treated as an ordinal variable, it is not possible to create a composite intensity score across all activities.

A better strategy for assessing intensity involves an open-ended format question in which youth report how many times or hours per week they spend in either one or multiple activities. Researchers can then create an aggregate intensity score by summing the number of hours per week engaged in all organized activities or each particular type of activity. One strategy often used for aggregating this type of intensity data that we generally do not endorse involves taking the average of the number of hours youth spend across several activities. Using this strategy, the total number of hours of participation in all activities each week is divided by the total number of activities participated in. This technique may be an appropriate method for testing hypotheses related to the overall development of talent or expertise but may result in misleading findings if a researcher is more interested in knowing about youth with more typical levels of involvement. In sum, by using an aggregate intensity score that includes all hours spent in all or particular activities, it is possible to get a sense of the totality of each participant's involvement on a weekly basis, which may be critical to evaluating the impact of involvement as well as the possible effects of overscheduling.

Finally, some studies have used time diary methods to collect data on intensity of activity involvement (Mahoney et al., 2009; Robinson & Godbey, 1999). In this methodology, either the parent or child documents the time spent in every activity during the course of a 24-hour period. For example, as part of the Child Development Supplement of the Panel Study of Income Dynamics, two time diaries were collected per child for one randomly chosen weekday and one randomly chosen weekend (Mahoney et al., 2009). This method allows respondents to describe their day as they experience or recall it, rather than being limited to predetermined categories by the researcher. This method can address some of the concerns with the validity of survey methods, as the respondent only needs to focus attention on discrete periods of time within a single day. However, although time diaries can be a very effective method for collecting information on what individuals do on a daily basis, they are a less effective technique for capturing events that occur less frequently. One way to address this concern is to collect time diary data at multiple time points throughout the year.

Regardless of the approach used, two cautionary notes warrant mentioning. First, variations in intensity of involvement are as much a function of the time demands of the activity context as they are of individual factors such as motivation to participate intensely in a particular organized activity. Thus, some activities

have high time demands whereas other activities may allow for full participation with fewer time commitments. To date, no study has considered whether regardless of time, youth feel fully committed to a given activity. Second, variations in intensity are likely to occur over the course of a year. Thus, researchers should take multiple measures of involvement over the course of the year to obtain the most accurate representation of how much time youth are engaged in organized activities. If this is not possible, youth can be asked to indicate whether the hours they report are significantly higher or lower than the average amount of time they spend in each of their activities or whether there are periods of time during the year when their involvement may increase/decrease.

Intensity and Developmental Outcomes

In general, across a variety of ages and demographic groups, cross-sectional studies demonstrate a positive association between intensity in organized activities and indicators of academic performance and school motivation. In cross-sectional analyses, more intense participation in organized activities has been associated with higher grades, better planning skills, better achievement test scores, and higher reading achievement (Cooper, Valentine, Nye, & Lindsay, 1999; Darling, 2005; Dotterer, McHale, & Crouter, 2007; Mahoney et al., 2006; Rose-Krasnor et al., 2006). More intense participation in sports activities has also been linked to greater levels of school connection and more positive affect towards school (Brown & Evans, 2002; Fredricks & Eccles, 2005).

In contrast, the relation between intensity and academic outcomes in longitudinal research is mixed and varies depending on the specific outcome and controls included in analyses. For example, after adjusting for prior levels of the outcome variable and a variety of school and demographic factors, Marsh and Kleitman (2002) found that intensity of participation in school-sponsored activities was associated with higher grades and educational aspirations but was unrelated to standardized test scores during mid- to late adolescence. In these analyses, the effect sizes were small (i.e., under 1 percent). In contrast, one study of middle childhood to early adolescence reported that intensity of participation was not related to changes in academic performance over time but did predict changes in self-concept and work habits (Ripke, Huston, & Casey, 2006). In addition, in a large-scale study of 25 high schools in Canada, intensity of participation did not significantly predict changes in academic outcomes 2 years later (Busseri et al., 2006), though these findings were significant in the cross-sectional analyses (Rose-Krasnor et al., 2006). However, in another study of Canadian adolescents, higher intensity of involvement in early to mid-adolescence predicted a more positive academic orientation and greater civic engagement by late adolescence after adjusting for family income and prior levels of outcome variables (Denault & Poulin, 2009a). Finally, more intense activity involvement among first-year college students was linked to better friendship quality and less loneliness for those with poor social adjustment prior to college (Bohnert, Aikins, et al., 2007).

Intensity of involvement may also be related to psychological development. Several cross-sectional studies have shown a link between greater intensity and better self-esteem and emotional well-being, more altruism, and lower levels of depressive symptoms (Dotterer et al., 2007; Fredricks & Eccles, 2005; Mahoney et al., 2006; McHale, Crouter, & Tucker, 2001; Morrissey & Werner-Wilson, 2005;

Ripke et al., 2006; Rose-Krasnor et al., 2006; Simpkins, Fredricks, Davis-Kean, & Eccles, 2006). In contrast, other studies have demonstrated mixed findings regarding psychological outcomes. For example, in a large sample of Canadian adolescents, greater intensity of participation was associated with better well-being, higher self-esteem, and more optimism in cross-sectional analyses, but not with depressive symptoms, social anxiety, and daily hassles, after adjusting for demographic factors and breadth of involvement (Rose-Krasnor et al., 2006). In contrast, in the longitudinal analyses, greater intensity was associated with lower well-being scores (Busseri et al., 2006). Another study showed that more intense participation in middle childhood was related to lower internalizing symptoms over time but had no effect on levels of hope and self-efficacy (Ripke et al., 2006). In a longitudinal study of a high-risk community sample of adolescents, greater intensity of involvement in 10th grade was associated with fewer internalizing symptoms in 11th grade after controlling for prior symptoms, prior activity involvement, and risk (i.e., positive maternal depressive history) (Bohnert, Kane, et al., 2008).

Other studies have explored the effect of intensity on indicators of risk behaviors with mixed results. In two cross-sectional studies, intensity of participation was associated with lower risk behaviors (Mancini & Huebner, 2004; Rose-Krasnor et al., 2006). In a longitudinal study, Bohnert and Garber (2007) found that among a community sample with elevated risk due to positive maternal depressive history, more involvement in activities was associated with lower levels of externalizing symptoms and tobacco use and fewer diagnoses of behavior disorders and substance use in 12th grade, after controlling for prior psychopathology. Several studies have also demonstrated that activity intensity is unrelated to youth delinquency or substance use (Darling, 2005; Fredricks & Eccles, 2005). Although it is beyond the scope of this article to discuss findings related to activity type, it is important to note that research suggests that the relation between intensity of participation and risk behaviors varies by type of activity (Duncan, Duncan, Strycker, & Chaumeton, 2002; Fredricks & Eccles, 2005; Ripke et al., 2006; Rose-Krasnor et al., 2006) as well as gender (Linville & Huebner, 2005). For example, Luthar, Shoum, and Brown (2006) found that more time in academically oriented activities was related only to girls' delinquency and substance use.

Nonlinear relations. A handful of studies have tested for nonlinear relations between intensity of involvement and youth outcomes. Similar to the findings for breadth, these results show limited support for the overscheduling hypothesis but suggest that the threshold level is very high. For example, Marsh and colleagues (Marsh, 1992; Marsh & Kleitman, 2002) documented nonlinear effects for total time in activities and academic outcomes in two national data sets (National Education Longitudinal Study [NELS] and High School and Beyond), after adjusting for a variety of school and demographic factors. They found that the associations between intensity and indicators of academic performance (i.e., academic ability, time spent on homework), psychological outcomes (i.e., locus of control, self-esteem), risk behaviors (i.e., staying out of trouble), and educational and occupational aspirations were initially positive for low to moderate levels of involvement, leveled off, and then became slightly negative at higher levels of involvement. For all outcomes, the inflection point was high (between 1.42 and 3.28 standard deviations above the

mean), indicating that participation was associated with less favorable outcomes only at very high levels of participation. In addition, Cooper, Nye, Charlton, Lindsay, and Greathouse (1996) found that after controlling for background student characteristics, the amount of time youth spent in activities was positively correlated with achievement test scores; but achievement dropped dramatically for youth who spent more than 20 hours per week in activities (nine youth, or 2% of sample). Similarly, after adjusting for SES and ethnicity, Randall and Bohnert (2009) detected a U-shaped curve between involvement and depressive symptoms. Specifically, although participation in up to 10 hours/week was associated with better adjustment, levels of depressive symptoms continuously increased as participation exceeded 10 hours. Of note, intensity levels were limited by the researchers' collecting data on only four activities. Mahoney and colleagues (2006) also examined nonlinear associations between activities and adjustment, adjusting for gender, parent education, family income, and family structure, and documented nonlinear associations between time in activities and adjustment for a few indicators of well-being (e.g., self-esteem, academic achievement, risk behaviors), indicating a slight decline or leveling off at very high levels of involvement. In addition, a few studies suggest that very high levels of participation are associated with increased levels of risk behaviors over time (Busseri et al., 2006; Luthar et al., 2006). Unlike studies examining nonlinear relations for breadth which sometimes fall short in capturing the full range of activity involvement, most studies assessing intensity adequately measure levels of involvement (i.e., hours/week) across all possible activities.

In sum, spending more time engaged in organized activities (i.e., intensity) appears to facilitate better outcomes among children and adolescents from a variety of backgrounds. In terms of academic outcomes, findings for academic performance are less robust than those of academic motivation or orientation but are consistent across ages. Greater intensity of involvement is related to psychological outcomes, but it depends on the outcome being assessed and the age of the sample. In general, it appears that younger and more at-risk samples may benefit in terms of internalizing symptoms and social outcomes. In addition, research suggests that greater intensity of involvement is associated with fewer risk behaviors and this finding does not appear to be more pronounced at particular ages. Activity type and the youth's gender though appear to affect the relation between intensity and risk behaviors. Studies examining nonlinear relations generally find that the benefits of intensity level off or diminish only at a very high level of involvement.

Many approaches have been used to assess intensity of involvement, but using an intensity score that reflects the total number of hours per week engaged in either all or specific types of organized activities is the recommended, least flawed technique (see Table 1). In addition to collecting this information via surveys, we encourage scholars to use time diary methods over multiple time points to assess intensity. Regardless of the method used, intensity should be assessed at various points throughout the year to account for seasonal variations in activity intensity and researchers are urged to consider whether, regardless of time spent, youth feel fully committed to a given activity.

Duration

Another dimension of involvement that has received less attention is the duration or consistency of involvement. This has been conceptualized as a child's

“dedication” to either (a) organized activities in general or (b) a particular activity over a period of time. There are subtle distinctions between duration and consistency that warrant clarification. *Duration* has typically been defined as the number of years a youth has participated in an organized activity. Measures of duration assess participation over time, which is most commonly across 2 to 3 years. *Consistency* of involvement, on the other hand, is defined as the *stability* of participation over a period of time. Both terms refer to how long a youth has been involved in activities over time. For the sake of clarity, we will use the term *duration* in this section to describe either of the indicators of length of involvement, but we have noted in the appendix if the authors refer to consistency versus duration. The majority of studies assess duration in any activity context over time, and a few studies have assessed duration in a specific activity context, and most of this work has focused on sports participation.

Why Measure Duration?

There are several theoretical and developmental reasons why it is important to assess duration. The first reason is the importance of relationships with adults and peers in explaining the positive associations between organized activity participation and adjustment (Fredricks & Eccles, 2005). It takes several years to form high-quality and supportive relationships with nonfamilial adults and peers. Broh (2002) found that youth who participated in certain types of activities for 2 years talked more to their teachers outside of class and were more likely to be in academically oriented peer group as compared with youth not involved in these activities. Another reason to assess duration is that it takes time and practice to develop physical, musical, social, and interpersonal skills. Evidence from the research on the development of talent and expertise indicates that for youth to reach their full potential in a particular organized activity context such as sports or music, they must practice and refine their skills over several years (Csikszentmihalyi, Rathunde, & Whalen, 1993; Ericsson, 1996). A third reason is that an ongoing commitment to an activity domain may be beneficial because it can help to strengthen identity formation, a critical aspect of adolescent development (Fredricks, Alfeld-Liro, Eccles, Hrudá, Patrick, & Ryan, 2002). Finally, duration may capture important developmental differences in the nature and motives for involvement. At more advanced levels of participation, activity involvement often becomes more focused on competition as opposed to just having fun and requires greater commitment from youth to maintain involvement. Thus, it can be argued that there is a unique benefit and experience related to being involved in an organized activity for a number of years rather than for a few months. Furthermore, although *intensity* of involvement might differentiate a youth who is spending a significant amount of time specializing in a particular activity from one who is just exploring his or her interests, *duration* represents an ongoing and persistent level of commitment to the activity or involvement.

Measurement Issues

Researchers typically assess duration by asking youth to report retrospectively on their activity involvement over several years or by asking about organized activity participation over several waves of data collection. Some studies have compared multiyear participants to nonparticipants, whereas others have compared

youth participating at multiple waves of data collection to youth who participate in some waves but not others. For example, Zaff, Moore, Papillo, and Williams (2003) created a three-level variable of duration of participation across 8th, 10th, and 12th grades including (a) consistent participation (i.e., involvement in at least one activity at each time point), (b) occasional participation (i.e., involvement in at least one activity during at least one of three time points), and (c) no participation. Similarly, Mahoney, Cairns, and Farmer (2003) used yearbooks to create a three-level aggregate measure of duration (which they refer to as *consistency*) during early adolescence (Grades 7 and 8) and middle adolescence (Grades 9 and 10), using the following criteria: (a) 2 years of activity involvement, (b) 1 year of involvement, and (c) no activity involvement.

One potential problem with measuring the duration in *any* organized activity context is that it does not take into account whether involvement has occurred in the same activity over time. Another challenge in measuring duration is capturing both the continuity and fluidity of participation (Theokas et al., 2006). Youth move in and out of activities, and these participation configurations alter from year to year. Studies assessing youths' involvement at one time point each year fail to capture the complexity of activity participation within and across years. Thus, there is a need for more longitudinal studies that explore patterns of participation and how these different configurations are uniquely linked to indicators of adjustment. Another methodological challenge relates to the fact that activity involvement is seasonal and participation patterns may differ depending on the timing of survey administration. Moreover, the seasonal nature of participation may change both the meaning and consequences of involvement. For example, summer is a period of greater risk for obesity, learning loss, and crime (Cooper et al., 1996; Jacob & Lefgren, 2003; von Hippel, Powell, Downey, & Rowland 2007), and involvement in activities during this time may be particularly important. However, very few studies have considered the effects of organized activity involvement during the summer hours on youth development. In sum, the way in which duration has been assessed in the majority of current studies does not adequately capture fluidity of involvement.

Duration and Developmental Outcomes

To date, only a handful of studies have examined the relation between the duration of involvement in *any* organized activity and indicators of academic outcomes, psychological development, and risk behaviors. Using the NELS:88 data set, Zaff et al. (2003) found that participation in at least one organized activity in 8th, 10th, and 12th grades predicted greater college attendance, voting, and volunteering at age 20 as compared to occasional participation (1 or 2 years). Also using the NELS:88 data, Gardner, Roth, and Brooks-Gunn (2008) found that 2 years as compared to 1 year of participation was related to greater odds of postsecondary attendance and completion as well as greater odds of civic engagement at both 2 and 8 years post-high school. In another study, Mahoney and colleagues (2003) found that 2 or more years of activity involvement during early and middle adolescence was associated with higher educational aspirations and better interpersonal competence in 12th grade and college attendance 2 years later. In contrast, in a recent cross-sectional study of adolescents from an ethnically and economically diverse urban magnet high school, longer duration of involvement in organized

activities was associated with more peer victimization only among Asian American adolescents but was unrelated to depressive symptoms or loneliness (Randall & Bohnert, 2009).

Other evidence of the effects of duration of participation in any activity comes from work by Darling and her colleagues (Darling, 2005; Darling, Caldwell, & Smith, 2005). After controlling for demographic characteristics and prior outcomes, Darling (2005) found that adolescents who participated for more years (ranging from 0 to 3 years) had higher grades, more positive attitudes toward school, and higher achievement. In addition, participation was associated with year-to-year variations in substance use and academic adjustment. During years when involved, adolescents reported less smoking and marijuana use, higher grades, a more positive academic attitude, and higher academic aspirations. This finding suggests that current participation, as opposed to prior participation, is sometimes the only significant predictor of developmental outcomes. In another study, Darling et al. (2005) compared youth who participated in any organized activity context during Year 1 only, any activity context during Year 2 only, youth who participated for both years, and nonparticipants. After controlling for prior adjustment and demographic characteristics, duration of participation was associated with higher grades, academic aspirations, and better attitudes toward school; youth who participated for 2 years differed from nonparticipants on these indicators but not from youth who were involved at one time point.

A few studies have focused on the effect of duration in one specific activity context over time. For example, Fredricks and Eccles (2006a) found that the duration in school clubs (ranging from 0 to 3 years) predicted higher grades, school belonging, psychological resilience, self-worth, and lower alcohol use, after controlling for achievement and other demographic characteristics. In addition, more years spent in sports predicted higher levels of school belonging as well as higher alcohol use. Broh (2002) used the NELS data to examine the effects of the duration of participation in both interscholastic and intramural sports in 10th and 12th grade on adjustment. Participation in interscholastic sports at both time points was associated with higher grades, while longer involvement in nonschool sports was associated with lower grades. Furthermore, it has been demonstrated that less consistent participation in sports during high school was associated with increased likelihood of smoking (Rodriguez & Audrain-McGovern, 2004). Greater continuity of participation in sports was also associated with increases in self-esteem and higher locus of control (Broh, 2002). In a large-scale study of youth during middle childhood through early adolescence, Fauth, Roth, and Brooks-Gunn (2007) found that sport involvement over time was associated with lower levels of depressive symptoms, higher delinquency, and higher substance use, with the effects being largest for youth participating during two or three waves of data collection. Additionally, participation in the arts and student government was associated with lower substance use, with the effects being strongest for youth who participated over time.

To summarize, research examining the effects of duration on various outcomes is just beginning. There is evidence, however, from studies using a range of samples and ages that the longer one has been involved in activities, the greater the benefit, particularly in terms of academic outcomes, including higher grades, achievement, and motivation. In general, youth appear to benefit more if they participate for 2 years or more. Research on psychological outcomes is more

limited, though findings suggest that longer duration of involvement is related to more positive psychological adjustment and fewer symptoms of depression. Research on risk behaviors suggests that longer involvement in any activity is not necessarily protective and differs by type of activity and risk behavior assessed. For example, some studies show duration of participation is associated with less substance use, whereas others show an increase in substance use for longer participation in sports.

With respect to recommended strategies for capturing duration, we suggest that it is important to consider the length of involvement in a particular activity rather than in any activity. Thus, although past research has suggested that involvement in any activity over a period of time is helpful, there are reasons to expect that continuity of involvement in a selected activity requires greater persistence and dedication. As shown in Table 1, we suggest that researchers assess the amount of time in months that youth have spent in a particular activity context (i.e., sports). In addition, we recommend that researchers explore consistency of involvement across multiple years (i.e., fluidity) using a longitudinal design when possible.

Engagement

It has been shown that youth benefit from participating in organized activities; however, merely attending an activity may not be sufficient for reaping the benefits of involvement. Given that engagement is necessary for youth to fully realize the positive outcomes related to involvement, it is surprising that only a few studies to date have measured this construct in organized activities settings (Weiss et al., 2005). Borrowing from the educational literature on motivation and self-regulation, engagement is a multidimensional construct encompassing various behaviors, emotions, and cognitions (Bartko, 2005; Fredricks, Blumenfeld, & Paris, 2004). *Behavioral engagement* is defined as active participation and includes factors such as effort, concentration, attendance, following the rules, and avoiding trouble. *Emotional engagement* refers to the extent to which one experiences positive and negative reactions to teachers, peers, and activities. The concept includes emotions such as interest, enjoyment, and enthusiasm, as well as feelings of belonging and a valuing of learning. *Cognitive engagement* is defined as investment in learning and includes self-regulation, thoughtfulness, and a willingness to go beyond the basic requirements to master difficult skills (Fredricks et al., 2004). *High engagement* is characterized by relatively high attention, interest, enjoyment, and effort to master new skills, whereas *low engagement* is identified by apathy, boredom, inattentiveness, and passivity (Larson, 2000; Weiss et al., 2005).

Why Measure Engagement?

Engagement is important to assess given that scholars argue that it is the missing link in organized activity research (Barko, 2005; Weiss et al., 2005). This multidimensional construct has the potential to provide a richer characterization of children's experience than research focusing only on specific dimension, and sustained engagement in an activity setting is posited to lead to more positive outcomes than casual or irregular participation. Youth display different behavioral, emotional, and cognitive patterns during involvement, and these profiles have been linked to different outcomes (Blumenfeld et al., 2005). For example, some youth may participate and follow rules but are bored and not invested in learning skills. Moreover, an

individual can attend an organized activity for several hours (i.e., high intensity) but may be simply going through the motions and showing little positive emotion and effort. Finally, other youth may demonstrate high affect and feel connected to the activity setting but do not participate consistently enough to accrue positive benefits from involvement. Thus, there is reason to believe that the various aspects of engagement capture a dimension of youth's experience while involved in activities that is not reflected in other dimensions previously discussed.

Another reason to assess this construct relates to the finding that youth report high intrinsic motivation (i.e., emotional engagement) and high concentration (i.e., behavioral engagement) in organized out-of-school activity settings (Larson, 2000; Larson & Kleiber, 1993). Larson (2000) argues that youth report this unique combination of psychological states specifically while participating in organized activity settings and that these activities provide rich developmental experiences that are less common in other parts of their lives. Finally, the fact that engagement is assumed to be malleable and responsive to changes in environment captures the moment-to-moment experience during involvement and points to the importance of measuring youth engagement (Fredricks et al., 2004). Studies assessing the multidimensional concept of engagement can have an important role in designing engaging out-of-school activity contexts where students can accrue the greatest benefits from involvement.

Measurement Issues

Engagement can be measured at either the individual or program level, but the majority of studies have assessed engagement at the individual level (Mahoney, Parente, & Lord, 2007), considering a child's behavior, emotion, and cognition during participation. In contrast, program-level engagement is not determined on the basis of any one child but instead represents the overall behavior and affect that all involved youth display during an entire out-of-school activity experience. Some scholars conceptualize program-level engagement as a key dimension of program quality (Blazevski & Smith, 2007; Smith & Hohmann, 2005).

A limited number of studies have used different methods to assess individual engagement in out-of-school settings (e.g., Mahoney, Lord, & Carryl, 2005; McGuire & Gamble, 2006). For example, Mahoney, Lord, et al. (2005) developed a 10-item scale for after school staff to complete on each child's engagement during program activities. Items assessed each child's level of interest, effort, and enjoyment in the activity. Similarly, McGuire and Gamble (2006) developed a self-report measure of psychological engagement that includes items about interest, enjoyment, and value of the activity completed by youth who were part of sexuality education evaluation. In addition, experience sampling methods (ESM) have been used to examine adolescents' behavioral (i.e., effort and concentration) and emotional engagement (i.e., interest and enjoyment) across a variety of settings (i.e., Shernoff & Vandell, 2007). In this research, adolescents carry electronic pagers or alarm watches for a set time period. In response to ESM signals, subjects fill out a detailed report of their current activities, thoughts, and feelings (see Hektner, Schmidt, & Csikzentmihalyi, 2007, for an in depth description of ESM methods). However, program-level engagement is most commonly assessed using observational methods (Mahoney, Lord, et al., 2007; Vandell, Shumow, & Posner, 2005).

There are several challenges with measuring engagement. First, engagement encompasses three domains—behavioral, emotional, and cognitive—and youth can show different patterns across these domains (Blumenfeld et al. 2005; Fredricks et al., 2004). As stated previously, the typically measured dimensions of activity involvement (i.e., breadth, intensity, and duration) do not provide information about engagement. Second, the three aspects of engagement may evolve and change over time (Fredricks et al., 2004). Third, individuals can be engaged to differing extents in various aspects of the activity setting such as practicing skills, spending time with peers, and/or competing. Also methodologically challenging is accounting for the fact that engagement involves the interaction between the individual and the setting. For example, Mahoney and his colleagues (2007) found that youth engagement was higher in high-quality after-school programs that devoted more time to enrichment activities.

Another challenge relates to how to best capture the dynamic and interactive nature of engagement over time (Rose-Krasnor, 2009). As outlined in Figure 1, participation (i.e., intensity, breath, and duration) leads to engagement, and conversely, higher engagement can lead to greater participation. The dynamic nature of engagement can be captured through longitudinal studies that assess participation and involvement over time and methodologies such as ESM that track fluctuations in engagement over time. Furthermore, qualitative techniques can be used to provide information on the reciprocal relations between duration and engagement. Pearce and Larson's (2006) qualitative study of youth in a civic activism program over 4 months is one such example of research that has attempted to assess changes in engagement over time. The researchers documented three stages of participation and engagement: (a) an entry period when youth report participating primarily for extrinsic reasons, (b) a personal connection period when they begin to see that the project is relevant to their lives, and finally (c) an intrinsic motivation stage when participation becomes self-rewarding.

Engagement and Developmental Outcomes

In a series of studies, Larson and colleagues (i.e., Larson, 2000; Larson & Kleiber, 1993) used ESM to examine adolescents' emotional and behavioral engagement in various structured voluntary activities in extracurricular contexts and community organizations. They found that adolescents involved in structured, voluntary activities reported high levels of motivation, concentration, and intrinsic motivation. In contrast, adolescents reported high levels of concentration and challenge but low levels of motivation in the school setting. Furthermore, these youth reported low concentration and effort but high intrinsic motivation while participating in unstructured activity contexts. A similar study using ESM reported that urban African American adolescents report the highest levels of engagement and confidence when involved in active, structured activities as compared to unstructured activities (Bohnert, Richards, et al., 2008). Similarly, Vandell and her colleagues (Shernoff & Vandell, 2007; Vandell, Shernoff, et al., 2005) used experience sampling techniques to assess levels of engagement and emotion. When signaled, youth recorded where they were, what they were doing, and whom they were with. They also were asked questions about their concerted effort, intrinsic motivation, importance, and emotional state. Substantial variation in activities, feelings, and motivation were reported when youth were in after-school programs as compared to

elsewhere. In after-school programs, youth reported higher levels of intrinsic motivation, concentration, and effort and more positive moods as compared to in other settings. Shernoff and Vandell (2007) extended this work and found that students report high levels of engagement while participating in sports and arts at after-school programs and low levels of engagement while completing homework activities. More recently, several studies have considered whether these more positive experiences are associated with better outcomes. In one cross-sectional study, reports of alienation during discretionary time were associated with more depressive symptoms and delinquency among a sample of urban African American adolescents (Bohnert et al., 2009). A longitudinal study by Shernoff (in press) has demonstrated that perceptions of engagement, challenge, and importance when involved in after-school programs as compared to elsewhere during after-school hours predicted higher English and math grades.

Research using survey methods to examine the links between youths' engagement in out-of-school settings and adjustment is very limited. In one such study, Mahoney, Lord, and colleagues (2005) found that after controlling for multiple selection influences, children had significantly higher academic achievement at the end of the school year as compared with other after-school care arrangements and that this effect was larger when engagement in program activities was high. In another study, McGuire and Gamble (2006) reported that psychological engagement, and not number of hours spent in a community service activity setting, accounted for significant, unique variability in community belonging and social responsibility.

In sum, studies using experience sampling techniques across a variety of samples and ages indicate that behavioral and emotional engagement is higher in organized activity contexts than in other settings in youths' lives. There are very few studies, however, that have examined whether greater engagement in these settings is associated with more positive developmental outcomes. In addition, the few survey studies that have examined the link between emotional engagement and academic adjustment suggest that greater engagement is associated with academic performance, motivation, and school belonging among children and adolescents. However, these findings need to be replicated across a wider range of samples, organized activity contexts, and ages. Furthermore, only a few studies to date have linked measures of program engagement in after-school settings to factors such as attendance, behavior, motivation, and social competence. We know of no study, however, that has examined all three components of engagement (behavioral, emotional, and cognitive) related to organized activity involvement.

In terms of assessing engagement, we recommend further development of survey measures of individual-level behavioral, emotional, and cognitive engagement. We also encourage scholars to consider adapting survey measures that have been developed to examine these three types of engagement in school settings for use assessing engagement in out-of-school programs (see Lippman & Rivers, 2008, for example). One of the most promising methods for assessing emotional and behavior engagement is ESM because it allows researchers to collect detailed information on adolescents' emotion (interest and enjoyment) and behavior (effort and attention) in the moment rather than retrospectively. Moreover, this technique can be used to collect information on variations in emotional state and behaviors both within organized activities and across different developmental contexts (see

Bohnert, Richards, et al., 2008; Shernoff & Vandell, 2007; Vandell, Shernoff, et al., 2005, for examples). Finally, we support efforts to develop observational paradigms that assess levels of youth engagement in the program in an effort to assess quality of after-school programming (Forum for Youth Investment, 2003).

Future Directions

Interrelatedness of Activity Dimensions

The majority of studies of organized activity involvement have measured each activity dimension of participation in isolation, making it difficult to determine if the effects are specifically linked to factors such as the time spent in activities (intensity), diversity of involvement (breadth), duration of participation, or level of engagement in the activities. Although only a handful of papers have used multiple indices and even fewer report on correlations between the different activity indices, there is reason to believe that there would be a high degree of overlap among indices. Some studies have shown that breadth and intensity are interrelated (Rose-Krasnor et al., 2006). Youth who participate in several organized contexts will devote time to each setting. As a consequence, the finding that breadth is associated with positive adjustment may in fact represent an intensity effect, stemming from the fact that participation in many different contexts will lead to more frequent involvement (Feister, Simpkins, & Bouffard, 2005). Furthermore, there may be a trade-off between breadth and intensity; as youth participate in more activity contexts, it may be harder for them to maintain intensity in one activity.

Duration and intensity are also likely interrelated. Developing expertise requires both frequent involvement and sustained involvement over several years. This potential overlap makes it difficult to separate whether the benefits are a function of frequent participation in one year or a result of continuous involvement in an activity setting. It is possible that duration is so strongly associated with positive outcomes that for youth who score high on duration, more intense participation offers few additional benefits (Gardner et al., 2008). Finally, intensity and other more subjective indices such as engagement, quality, and, importance are also likely interrelated. Youth are inclined to spend more time in an activity that they view as high-quality, engaging, and important to them. Given the interrelatedness of the various dimensions of involvement, there is a need for future research to determine which indices have a stronger effect on adjustment. For example, we believe it is important to understand whether youth benefit more from being intensely involved in one or two activities as compared to being involved in a number of different activities.

To our knowledge, only a handful of studies have simultaneously examined the independent and unique contributions of various dimensions of involvement on youth outcomes (see Busseri et al., 2006; Denault & Poulin, 2009a; Gardner et al., 2008; Rose-Krasnor et al. 2006; Simpkins et al., 2008). For example, Rose-Krasnor et al. (2006) and Busseri and colleagues (2006) found that when the breadth and intensity were examined simultaneously, only breadth had a unique relation with each outcome. Similarly, Simpkins and colleagues (2008) found that breadth was linked to positive friend characteristics and positive adjustment even after participation intensity was included in the model. Alternatively, Denault and Poulin (2009a) demonstrated that when breadth and intensity growth curves were considered

simultaneously, neither made unique contributions to outcomes. In another study, Gardner and colleagues (2008) found that the positive associations between intensity and adjustment were contingent on the duration of involvement; for youth who participated for 2 years, more intense participation was associated with favorable educational, civic, and occupational outcomes. In contrast, among youth who participated for 1 year, limited positive associations between intensity and young adult outcomes were detected.

Another approach to accounting for the interrelatedness of activity indices is to combine these indicators into a single measure of involvement. For instance, a youth who participates both consistently and intensively (indicated by more hours per week) in an organized activity during a school year may reap more benefits from involvement than a youth who participates minimally and/or sporadically over the same time period. To our knowledge, there are no studies of organized involvement that have created a single index of involvement that reflects multiple dimensions. A few after-school program evaluations, however, have combined two indicators to create a more complex measure of participation (see Simpkins et al., 2004, for more examples). For example, evaluators of the San Francisco Beacon program (Walker & Arbreton, 2004) created a combined measure of duration and breadth and documented differences in outcomes depending on the pattern of participation. To date, these types of composite indices of involvement have only been used to assess after-school program involvement and not to assess the effects of organized activity involvement in general.

Finally, person-centered approaches represent another promising method for examining the interrelatedness of these activity dimensions. Metzger et al. (2009) suggest that by creating qualitatively different profiles or combinations of activity involvement, it is possible to account for both breadth and intensity. For example, this technique could be used to compare the outcomes among youth who report high intensity in one domain, participation in several domains at low intensity, and who report high intensity of involvement in one domain and low intensity in the other domain. This research could provide important insight into how differences in both the breadth and intensity of activity involvement may be associated with different developmental outcomes. To summarize, more information is needed on how these different dimensions of participation relate both theoretically and empirically, and how they may vary by type of activity and across development (Mahoney et al., 2009). This type of information will then lead to more promising ways of capturing these distinct but interrelated dimensions of involvement and will have implications for analyses and interpretation of findings.

Developmental Issues

Several theoretical approaches suggest the importance of considering the role of development when considering the impact that the various dimensions of organized activity involvement has on youth outcomes. According to selective, optimization, and compensation models of development, there is a developmental progression from youth sampling a range of activity options (i.e., breadth) to focusing their attention and efforts on optimizing development in a particular area (i.e., intensity) (Baltes, Lindenberger, & Staudinger, 1999; Lerner, Freunce, De Stefanis, & Habermas, 2001; Rose-Krasnor et al., 2006). Similarly, Côté's (1999)

model of talent development in sports also suggests there is a progression from high breadth to an increased time commitment in one domain. According to Côté's model, during the first developmental stage, or "sampling years" (ages 6–13), children participate in a wide range of activities and are focused on having fun and trying new things. In the second stage, the "specialization years" (ages 13–15), children begin to focus time and energies on one or two activities. Finally, during the "investment years" (more than 15 years of age), individuals focus time and energy on mastering achievement in one domain. Busseri and colleagues (2006) theorized that exploration represented by greater breadth of involvement may be more important for development in younger youth, whereas intensity may be more relevant as youth get older and begin to consolidate their interests and work on identity formation. Thus, there appears to be particular benefits related to breadth of involvement in early adolescence but an eventual advantage to a narrowing of interests in adolescence and young adulthood after the majority of the exploration process is complete.

Despite this suggestion, there has been a lack of empirical support to date for this notion of activity consolidation over time. For example, in a short-term longitudinal study, Busseri and his colleagues (2006) examined the reciprocal associations between breadth and intensity of activity involvement and developmental success. They predicted that decreases in breadth and increases in intensity would positively predict development over time, but these hypotheses were not supported. In addition, Fredricks and Eccles (2006b) found that the younger cohort of adolescents in their study (eighth graders) had a more intense and broader array of activity involvement as compared with older adolescents. A recent longitudinal study using growth curve analyses demonstrated that both breadth and intensity declined over adolescence, but intensity showed steeper declines by the end of high school (Denault & Poulin, 2009a). This study also suggested that level of organized activity participation in early adolescence (Grade 7) was more important than rates of change over time (Denault & Poulin, 2009a).

Collectively, however, the studies reviewed suggest that the timing of involvement may be important. Longitudinal research examining the developmental progression of youth participation is necessary for determining the relative importance of each dimension of involvement at different ages. The findings summarized in this article suggest that researchers need to pay more attention to developmental issues, including progression and timing, as well as considering why these dimensions may prove to be more relevant at certain points in development.

Reliability and Validity of Self-Report Measures

The majority of studies on activity involvement rely on self-report methods to gather information about youth involvement in organized activities. The benefit of using self-report measures is that it is possible to collect information on participation from a large number of youth at a low cost and measures can be adapted to fit the needs of a particular population or age. Data from these surveys can also be coded to capture measures of breadth and duration. However, because research teams use different measures and categorization strategies and include different activity lists, it becomes difficult to compare results across studies.

Considering that most studies use self-report measures to capture involvement, it is notable that there has been little discussion in the literature of the reliability and validity of these measures. Although it seems straightforward to assess activity involvement using self-report techniques, measuring what youth do with their time is extraordinarily complex and difficult to estimate accurately (Robinson & Godbey, 1999). Problems with the use of self-report measures of activity involvement have been discussed in sport psychology literature (see Sallis & Saelens, 2000). For example, studies have found lower rates of physical activity participation when using objective measures than when utilizing self-report indicators of involvement (Robinson & Godbey, 1999; Sallis & Saelens, 2000). These findings point to the possibility that social desirability may lead to an overreporting of physical activity participation and perhaps organized activity involvement in general. An additional measurement issue that has not received enough attention to date is the reliability and validity of retrospective reports of involvement. Asking participants to indicate their participation over a period of time allows researchers to obtain valuable information about involvement, but the reporting may be comprised by subject or survey characteristics that may include a lack of clear specification of relevant time frames.

Although almost all studies to date have asked youth to report on their involvement, some investigations, and most often those assessing participation among younger children, have relied on parent report (see McHale et al., 2001; Simpkins et al., 2005). However, discussion about the validity of these reports has rarely been raised. In addition, only a handful of studies have utilized both mother and youth reports of involvement (Bohnert & Garber, 2007; Bohnert, Kane, et al., 2008; McHale et al. 2001); analyses from these studies suggest that mother and adolescents reports of involvement during in school- and community-based activities during high school years are highly correlated and exhibited greater correspondence over time ($r = .69$ in 9th grade, $r = .82$ in 12th grade; Bohnert, Martin, & Garber, 2007).

Given that the reliability and validity of self-report questionnaires is rarely discussed in the organized activity literature, we suggest that these issues be examined in future research. To advance our knowledge in this area, we also recommend that research incorporate multiple reports (parent and child) and methods of involvement (experience sampling methods, time diaries, interviews, self-report) and address issues of retrospective recall when possible to further address issues of reliability and validity.

Predictors of Participation and Person-Context Relations

Organized activity participation is voluntary, and individuals who choose to participate and stay involved are often fundamentally different from youth who are not involved. As a result, it is difficult to separate the effects of organized activity involvement from preexisting differences between participants and nonparticipants. To address this in future work, scholars should include a wide range of organized school and community activities and/or utilize open-ended questions on surveys to capture the full range of activities in which a youth may participate. In addition, it will be important to include questions about potential barriers to participation. Researchers are beginning to examine the individual, family, and

contextual factors that are associated with participation and lack of participation in organized activities (Dearing et al., 2009; Mahoney et al., 2009; Persson, Kerr, & Stattin, 2007). Most of the work has focused on demographic characteristics that are associated with activity participation (see Anderson, Funk, Elliot, & Smith, 2003; Bohnert & Garber, 2009; Denault & Poulin, 2009b; Fletcher, Elder, & Mekos, 2000, for exceptions). It is not clear from the extant literature if the factors that are related to who initially participates are the same as the factors that are associated with ongoing activity involvement and different levels of participation across each of the activity dimensions (Eccles, 2005). Thus, there is a need for research that explores the individual, family, and contextual factors that are predictive of breadth, intensity, and duration of involvement and that examines whether these facets of participation are more or less important depending on the characteristics of the youth or the ecological context in which they live. Longitudinal studies that adjust for some of the individual, family, and neighborhood factors associated with these facets of participation can help to disentangle the extent to which findings are a function of involvement in organized contexts and how much they reflect self-selection effects (Larson, 2000).

Finally, although research suggests that certain individual (i.e., motivation and competence) and family (i.e., values and level of encouragement) factors are related to participation, it is also likely that participation, in turn, influences these indicators (Mahoney et al., 2009). It is important to develop both empirical and theoretical models of person-context relations that account for the dynamic and synergistic process between selection, participation, and adjustment (Eccles, 2005; Mahoney et al., 2009). A bioecological perspective assumes that development happens through a complex and reciprocal process of interactions between the individual and nested ecologies over time (Bronfenbrenner & Morris, 2006; Magnusson & Stattin, 1998). Incorporating this perspective in future studies will allow researchers to consider how various selection factors are related to different dimensions of activity involvement and will allow for a greater appreciation for how these dimensions may be more or less important based on various ecological conditions (Mahoney et al., 2009).

Characterizing Activities and Activity Contexts

Not all organized activities are the same. They differ in terms of the level of competition, opportunities for social interaction and forming relationships with adults, curriculum, and frequency of meetings. Additionally, differences exist between activities that fall within the same category; for example, an important distinction exists between team- versus individual-based sport activities (i.e., football versus swimming). There are also variations in the nature of participation in school-sponsored versus community-sponsored activities, but few studies to date have highlighted these differences. Furthermore, there has been surprisingly little discussion in the literature regarding the underlying and/or core characteristics common to all organized contexts.

Qualitative research exploring the similarities and differences across organized settings may help clarify these issues and also assist researchers with grouping activities into meaningful categories. Larson and colleagues have begun to address this need with their research program investigating the developmental processes

occurring in 12 exemplar youth programs (i.e. arts, service, and leadership) (see Larson & Brown, 2007; Larson & Walker, 2006; Larson, Walker, & Pearce, 2005; Pearce & Larson, 2006, for examples). These qualitative studies provide detailed information on differences in developmental experiences across various types of activities, how social and emotional development unfolds in these settings, and how adult leaders can create and sustain high quality in response to challenging situations. Unfortunately, few studies in the organized activity literature beyond the work done by Larson and colleagues have assessed characteristics of the activity setting. "Quality" of the activity program is one such aspect that is important to consider. Conversely, grouping qualitatively different contexts together to calculate breadth or summing activities that are of unequal quality can lead to misleading findings. For example, spending 1 hour in an organized activity setting with multiple affordances for positive youth development will likely have a larger impact on developmental outcomes than spending 10 hours per week in a low-quality activity context.

Thus, to further the field, researchers should assess more than just activity type, number of activities, frequency, intensity, and duration/consistency of participation in order to accurately reflect the effect participation has on adjustment. In their review, Feldman and Matjasko (2005) recommend weighing each activity based on factors such as the frequency of participation, type of activity, level of leadership, the extent to which youth identify with an activity, or the value they place on activity. For example, Marsh and Kleitman (2002) created an index of the total number of school-based organized activities, differentially weighing whether the participant was a member or in a leadership position (0 = nonparticipant, 1 = participating as member, 2 = participating as an officer or leader).

Conclusion

To summarize, this literature review seeks to provide a foundation for the field about the most appropriate ways to assess the various dimensions of organized activity involvement. The current article has attempted to clarify which dimensions of involvement are the most important to measure, how researchers can best capture these dimensions using questionnaires or interviews, which additional dimensions of involvement should be examined in future work, and how researchers can think more carefully about potential measurement issues as they assess organized activity involvement. As illustrated by the review, there are many complex issues to consider when assessing activity involvement. A central aim of this article was to establish a "best practices" approach to assessing the most theoretically and empirically relevant dimensions of activity involvement. Researchers should be mindful, however, that the "best" way to assess activity involvement varies depending on study aims and age of the sample. Given the distinctions both in terms of theory and outcomes between these dimensions, we strongly endorse assessing multiple dimensions of involvement that tap overlapping but unique aspects of youth's experience in organized activities. By critically evaluating theoretical, methodological, and practical issues of assessing organized activity involvement, the current article seeks to develop consensus and inform the direction of future research in order to maximize its potential impact for the development of tomorrow's youth.

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