Engagement in After-School Programs as a Predictor of Social Competence and Academic Performance

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Abstract Using the experience sampling method, this study examined two questions related to outcomes associated with after-school programming. First, does the quality of experience in after-school programs mediate the effect of program participation on social competence and academic performance? Second, among program participants, is the difference in quality of experience when in programs versus other settings after school related to higher social competence and academic performance? Middle school students (N = 196) attending eight programs in three Midwestern states reported a total of 4,970 randomly sampled experiences in and out of after-school programs during 1 week in the fall and spring of the 2001-2002 academic year. Engagement during after-school hours partially mediated the relationship between participation in after-school programs and social competence. In addition, relative perceptions of engagement, challenge, and importance when in after-school programs compared to elsewhere after school predicted higher English and math grades. Results suggest that the quality of experiences in after-school programs may be a more important factor than quantity of experiences (i.e., dosage) in predicting positive academic outcomes.

Introduction

Adolescents report a higher quality of experience in structured after-school programs, including greater engagement and more positive emotions, than in less structured and supervised activities after school (Vandell et al. 2005). Research also links participation in after-school programs and extracurricular activities to improved social competence (Durlak and Weissberg 2007; Fredricks and Eccles 2006a, b; Larson and Brown 2007) and academic achievement (Darling 2005; Durlak and Weissberg 2007; Fredricks and Eccles 2006b; Mahoney et al. 2005). Few studies, however, have examined whether engagement and related experiential factors in after-school programs account for positive social and academic outcomes. The present study addresses this gap in the literature by investigating two models that provide different perspectives on how quality of experience after school relates to the development of social competence and academic performance. First, a mediational model was based on the expectation that that greater program participation contributes to a higher quality of students’ experiences after school, and that those enhanced experiences, in turn, are associated with greater social competence and better academic performance. Second, a differential effects model suggests that the effect of participation may differ among program participants based on the quality of their experience while in programs versus elsewhere. In this model, it is the quality of these experiences, not quantity, that is linked with social competence and academic performance.

Researchers have argued that the benefits of after-school programs on youth cannot be meaningfully understood without considering program quality (Eccles and Gootman 2002; Mahoney et al. 2005). Viewed from the perspective of participants, this line of reasoning suggests that it is not
only participation in after-school programs, but also the quality of students’ experiences in them, that drives developmental and academic benefits associated with program participation. Unfortunately, outcome studies often treat after-school programs like a black box, without examining engagement in activities as an essential ingredient influencing positive outcomes. In this study, the experience sampling method (ESM; see Hektner et al. 2007) was used to track youth’s experiences during participation in after-school programs, allowing us to peer inside this black box to assess participants’ quality of experience while immersed in program activities.

Associations between After-School Activities and Social and Academic Outcomes

Researchers have linked out-of-school environments and engagement in free time activities with enhanced personal confidence and social competencies, including learning to work well with others (Bohnert et al. 2007; Dubas and Snider 1993; McHale et al. 2001). During extracurricular and community-based activities, youth have reported learning cooperation and teamwork (Hansen et al. 2003; Jarrett 1998; Rogoff et al. 1995) and experiencing increased empathy and understanding essential to perspective taking (Dworkin et al. 2003). Participants in school-based extracurricular activities and after-school programs in particular have exhibited better psychosocial adjustment and social skills than nonparticipants (Darling et al. 2005). Engagement in organized after-school programs fosters enhanced relations between peers and adults (Dur Lak and Weissberg 2007; Eccles and Gootman 2002) and improved social competence among participants (Mahoney et al. 2007).

Results from studies examining the relationship between after-school program participation and academic achievement are more mixed. A national evaluation of 21st century community learning centers (21st CCLCs), a major federally-funded initiative supporting after-school programs in the US, found that program participation had little or no impact on academic performance and homework completion (James-Burdumy et al. 2007). This evaluation, however, was methodologically flawed. Specifically, the sample was not representative of the population of schools receiving 21st CCLC funding, program quality was ignored, and the conclusions drawn were not warranted in the absence of appropriate baseline data (Mahoney et al. 2005). Other studies have found that children attending after-school programs or other structured activities earn higher grades and achievement test scores than nonparticipants (e.g., Cooper et al. 1999; Darling 2005; Fredricks and Eccles 2006b). Dur Lak and Weissberg’s (2007) meta-analysis including studies of outcomes associated with 73 after-school programs provided a recent update on the state of the evidence, and concluded that students attending after-school programs achieved higher grades and test scores than nonparticipants.

Associations between After-School Activities and Quality of Experiences

A number of studies suggest that extracurricular or structured activities during discretionary time provide a unique developmental context for adolescents to experience positive phenomenological states including heightened engagement, enjoyment, intrinsic motivation, personal satisfaction, flow, and initiative (e.g., Csikszentmihalyi and Kleiber 1991; Csikszentmihalyi and Larson 1984; Hansen et al. 2003; Vandell et al. 2005), and reductions in negative emotions such as alienation (Bohnert et al. 2008) and depressed mood (Mahoney et al. 2002). The few studies that have examined participants’ quality of experience in after-school programs specifically have found that programs provide a positive affective and emotional environment for youth (Kaline et al. 2001; Vandell et al. 2005). Vandell et al. (2005) contrasted middle school students’ experiences while in after-school programs with their experiences in other settings during weekday, after-school hours. Adolescent participants reported higher quality of experience (e.g., feeling more challenged, utilizing more skills, and having more positive mood states) when in after-school programs compared to other settings after school.

Associations between Quality of Experiences and Social and Academic Outcomes

Research suggests that positive emotions and experiences broaden an individual’s behavioral repertoires, and in the process build their personal resources and social competencies (Fredrickson 2006). Specifically, positive mood has been found to be an important mediator of healthy social relations and interactions (Salovey et al. 2000). Furthermore, the ability to experience and manage emotions has been related to forming positive interactions and relations with others (Grewal and Salovey 2006). Emotions have also been shown to play a key role in preventative interventions that enhance the social competence of youth, including building perspective-taking skills and prosocial behavior (Izard 2002). In sum, a variety of studies suggest that positive subjective experience and emotions are integral to the formation of social competence.

A number of studies have related the quality of experience during skill-building activities to academic performance, many of them focusing on the experience of flow as a state of emergent motivation. Flow is a state of deep absorption in an activity that is intrinsically enjoyable, as
when artists or athletes are focused on their performance. The experience is all-encompassing, such that there is no psychic energy left for distractions. Flow has been related to the demonstration of talent development, creative accomplishment, and school performance (Csikszentmihalyi et al. 1993; Nakamura 1988). For example, Csikszentmihalyi, Rathunde, and Whalen found that adolescents who developed superior academic and artistic abilities experienced flow more frequently when working in their area of talent when compared to less creative peers. Shernoff and Hoogstra (2001) found that high school students reporting higher flow-like engagement in high school math and science classes were more likely to report higher grades in college. Because structured activities solicit heightened flow and engagement experiences more than any other activity type (Schmidt et al. 2007), and such engagement is related to talent development and academic performance, quality of experience may mediate positive outcomes associated with after-school program participation due to the predominance of structured activities during program time.

Differential Effects Model

Researchers have stressed that programmatic quality may be a critical variable when examining outcomes associated with program participation. Specifically, the effect of program participation on outcomes may be greater for students who report a higher quality of experience in the programs relative to outside of them. For example, programs that are flexible, successfully engage youth in constructive activities, and promote relationships with caring adults have led to positive social and academic outcomes (Mahoney et al. 2005; Pierce et al. 1999); whereas participation in those which were punitive and restrictive has been negatively correlated with outcomes, including the adjustment of attendees (Vandell and Shumow 1999; Vandell et al. 2005). Mahoney et al. (2007) recently found that program-level differences in engagement predicted social competence specifically. The differential effects model therefore proposes that variations in engagement and quality of experiences encountered among program participants may influence the outcomes of those participants. In this study, the quality of students' experiences in programs relative to outside of them was tested as a predictor of social competence and academic performance.

The Current Study

Prior research supports the proposition that students have more positive experiences and emotions in structured, voluntary activities, including when in after-school programs, and that after-school program participation is associated with social competence and enhanced academic performance. No study to date, however, has systematically examined the role that quality of experience plays in the relationship between after-school program participation and positive social and academic outcomes. In this study, program participation was conceptualized two ways. First, program status was the categorical distinction between program participants and nonparticipants. Second, dosage was the relative amount of time students spent in after-school programs. Although studies rarely focus on dosage effects, those that have done so have found that spending a greater amount of time in structured activities after school is associated with more positive developmental experiences and outcomes (Hansen and Larson 2007).

Engagement was conceptualized using flow theory (Csikszentmihalyi 1990). Schmidt et al. (2007) distinguished between the conditions for flow, and the phenomenological experience of flow. The primary conditions for flow consist of (a) a high level of challenge presented by an activity in pursuit of those goals, (b) high skills to meet that challenge, and (c) the activity is regarded as relevant or important. When these conditions are met, according to flow theory, individuals are theorized to experience a high degree of engagement. Engagement in the present study was conceptualized as the concurrent experience of (a) concentration, (b) interest and (c) enjoyment (Shernoff et al. 2003). All three of these components are integral to the flow experience and have been related to learning and achievement outcomes in previous research (e.g., Csikszentmihalyi et al. 1993). In this study, several experiential variables were tested as potential predictors of outcomes, including engaging or flow-inducing conditions (i.e., perceptions of skills, challenge, and importance), as well as the experience of engagement (i.e., simultaneous experience of concentration, interest, and enjoyment). While the selection of these predictors was based on theory, other aspects of students' subjective experience were also considered as potential predictors of outcomes based on factor analysis of BSM items after the data had been collected, including positive affect and negative affect.

The following research questions were investigated:

1. Mediation model. Is the effect of after-school program participation on social competence and academic performance mediated by the quality of experiences during after-school time in terms of engaging conditions (i.e., skills, challenge, and importance), engagement, positive affect, and negative affect?

2. Differential effects model. Among program participants, does the experiential difference in engaging conditions (i.e., skills, challenge, and importance), engagement, positive affect, and negative affect when in programs versus elsewhere after school predict social competence and academic performance?
Method

Participants

Data were collected in two medium sized cities and one small town in three Midwestern states. A total of eight middle schools participated in the study; three schools each from two communities and two schools from the remaining community. The sample consisted of middle school youth (N = 196). Fifty-three percent of the sample (n = 104) was female. Thirty-eight percent (n = 73) was White; 29% (n = 57) was African American; 19% (n = 38) was Latino; and 14% (n = 22) was another ethnicity including Asian (1%), Native American (2%) or multiple ethnicities (11%). The sample was economically diverse: 30% (n = 53) had household incomes less than $19,999; 30% (n = 53) reported incomes between $20,000 and $39,999; 20% (n = 38) reported incomes between $40,000 and $59,999; and 20% (n = 38) reported household incomes over $60,000. With respect to mother's highest level of education, 24% (n = 43) had less than a high school degree; 22% (n = 42) were high school graduates; 33% (n = 61) had completed some college or vocational school; and 21% (n = 39) attained a four-year college degree or more. Thirty-three percent (n = 56) of the sample participants lived in single-parent households.

All participating middle schools sponsored school-based after-school programs. While attending those programs, students participated in the following activities: (a) organized sports and other physical activities (34%), (b) arts enrichment (13%), (c) socializing (12%), (d) homework completion (8%), (e) academic enrichment (5%), (f) sit-down games (4%), (g) organized interests or clubs (4%), (h) video games (3%), and (l) other, miscellaneous activities (17%). Only experiences in which respondents indicated that they were attending their schools' after-school program were coded as program experiences. Extracurricular activities occurring outside of those programs were not coded as program experiences.

Procedure

Measure of social competence and academic performance were collected at the beginning (baseline) and at the end (outcome) of the 2001–2002 academic school year. In between these two endpoints of the school year, ESM data were collected during 1 week in the fall (Wave 1) and 1 week in the spring (Wave 2) of the same school year. Participants wore digital wristwatches pre-programmed to randomly signal, or beep, five times daily during nonschool hours (i.e., 3:30 p.m. – 8:30 p.m. on weekdays and 10:00 a.m. – 8:30 p.m. on weekends). They recorded their experiences in daily logbooks at every beep. Participants responded, on average, to 33 of the 35 signals (94% response rate) in the 2 weeks of data collection during Wave 1 and Wave 2, and they earned $1.00 for each logbook entry completed.

Just prior to Wave 1, participants completed a 45-min ESM training session conducted by two members of the research team prior to participation. Field staff met daily with participants to check logbooks for accuracy and missing data, clarify errors, answer questions, and distribute the next day's logbooks. Any logbook items that appeared to be completed erroneously were immediately corrected in consultation with the student. With little exception, participants adhered to data collection procedures consistently, demonstrating that they had been adequately trained.

When a logbook was only partially completed, data for the completed items was entered while data for incomplete items was regarded as missing at the signal level. Each variable was then aggregated across all signals by participant to create person-level variables. Missing data at the signal level was listwise deleted for the creation of the aggregated, person-level variables utilized in the analyses. However, missing data at the signal level did not result in any missing data at the person level.

Measures

Program Participation

Two different measures of program participation were utilized in this study. First, a grouping variable (0 = nonparticipant, 1 = participant) identified students as program participants or nonparticipants, herein referred to as program status. Program participants were defined as students who reported being in an after-school program at least once when signaled, and program nonparticipants reported no experiences in an after-school program. Eighty-four percent of the sample (n = 165) was identified as program participants and 16% (n = 31) were program nonparticipants. The second measure of program participation indicated the amount of time spent in programs, or dosage. Dosage was calculated as the number of self-reports each respondent provided while attending their school-based after-school program, divided by the total number of reports provided.

Quality of Experience Variables

Participants rated two sets of items in their logbooks using a four-point scale ranging from Not at all to Very much. The first set of items relating to engaging conditions included: (a) Skills: “Were you using your skills?” (b) Challenge: “Was it challenging?” and (c) Importance: “How important was this activity to you?” The second set of
items assessed the experience of engagement, and comprised the engagement composite variable: (d) Concentration: “How hard were you concentrating?” (e) Interest: “Was it interesting?” and (f) Enjoyment: “Did you enjoy what you were doing?”

Participants also responded to 11 logbook questions measuring affect and emotions; “How were you feeling when you were signaled?” e.g., lonely, happy, angry, stressed, excited, bored, scared, sad, relaxed, proud and worried, using a four-point scale ranging from Not at all to Very much. A factor analysis of these items yielded three factors with eigenvalues over one. The first factor, labeled Positive Affect, consisted of high loadings for proud (l1 = .82), excited (l1 = .80), happy (l1 = .72), and relaxed (l1 = .68). The second factor was labeled, Negative Affect, and included loadings for scared (l2 = .80), worried (l2 = .79), sad (l2 = .73), angry (l2 = .59), and stressed (l2 = .50). The third factor was labeled, Disengagement, and included loadings for bored (l3 = .85) and lonely (l3 = .61). The top loading items were averaged to form composite variables of each factor. Positive affect and negative affect reached satisfactory levels of reliability (i.e., $\alpha \geq .75$), and were used as independent variables in the analyses; however, disengagement did not reach a satisfactory level of reliability ($\alpha = .43$), and was therefore dropped from subsequent analyses. All ESM variables were collapsed across Wave 1 and Wave 2 creating an average for each respondent.

**Experiential Difference Variables**

In order to test the differential effects model, experiential difference variables were calculated as each participant’s experiential variable average when in programs minus the same variable average when elsewhere after school (e.g., home or public). Cohen’s $d$ was used to capture the standardized mean difference of ratings recorded when in programs and elsewhere after school (see Table 1). Using Cohen’s (1988) standards for effect size, the standardized mean difference was large for challenge ($d = 0.93$) and skills ($d = 0.93$), moderate for importance ($d = 0.57$) and engagement ($d = 0.59$), and small to moderate for the remaining variables.

**Social Competence**

Participants were asked to rate their skills (1 = Poor to 4 = Excellent) on seven items assessing multiple dimensions of social competencies. These dimensions included (a) goal setting and planning (e.g., “planning for the things I need to do in the future”), (b) conflict resolution (e.g., “working out conflicts or disagreements I may have with others”), (c) non-conformity (e.g., “sticking to what I believe in, even if my friends do not agree”), (d) teamwork (e.g., “working with others on a team or group project”), and (e) perspective-taking (e.g., “feeling bad for other people when they are having a hard time”). A total of seven items comprised a scale of social competence with acceptable factorial validity and internal consistency. Factor analysis yielded a single underlying factor represented by the seven items (eigenvalue = 4.05) which explained 58% of the variance in the items. Factor loadings of the items ranged from .70 to .85. Internal consistency of the items was within acceptable limits ($\alpha = .79$ in Wave 1 and $\alpha = .85$ in Wave 2).

**Academic Performance**

Academic performance outcomes were assessed using course grades for the academic year collected at the end of
the academic year (outcome). Participating schools provided English and math grades to represent two core academic subjects while minimizing the response burden for schools. Baseline measures of academic performance were assessed as self-reported English and math grades collected at the beginning of the academic year prior to Wave 1.

Results

Distribution of ESM Responses

Means, standard deviations and reliabilities for all dependent and predictor variables are provided in Table 1. Following preliminary factor and descriptive analyses indicating that the data collected in the two waves were comparable, reports from both waves were combined for a total of 12,433 self-reports. Of these, the 4,970 self-reports occurring after school on weekdays, between the time school was dismissed and 6 p.m., were selected for analysis in the study. Program participants responded to 4,211 signals, 1,079 when attending after-school programs, and 3,132 while elsewhere after school. Nonparticipants responded to 759 signals, which by definition occurred when students were not at a program.

Controls for Pre-existing Differences and Baseline Factors

The potential for pre-existing differences between program participants and nonparticipants has been identified as a common threat to the internal validity of research on outcomes associated with after-school programs (Fredricks and Eccles 2006b; Larson 2000). Therefore, it was of interest to assess whether program participants and nonparticipants differed on any of the study background variables. Demographic variables including gender, race/ethnicity, household income, and mother’s education were collected via student survey. Analyses indicated that there were a higher percentage of African-American and Caucasian youth among program participants, and a higher percentage of Latino youth among nonparticipants, at baseline \[
\chi^2(3, N = 171) = 19.09, p < .001. \]
Mother’s education was higher among program participants \[
\chi^2(4, N = 171) = 20.01, p < .001. \]
Thus, race/ethnicity, and mother’s education were selected as control variables for subsequent analyses. Though program participation was not significantly different for boys and girls, gender was also included as a control based on the prominence in the literature of gender effects on academic performance (Novell and Hedges 1998) and socialization (Eagly 1997).

In controlled regression analyses to test the hypotheses, the effect of the predictor variable(s) on the outcome variable was assessed after controlling for race/ethnicity, mother’s education, and gender. Next, the baseline measure of the outcome variable was added to the model in order to examine change of the outcome variable from baseline to outcome after controlling for the background characteristics. Controlling for prior measures of the outcome variable may yield particularly conservative estimates, however, especially given the time span of only one academic year for change to occur. The baseline measure for the outcome was added in a separate model because observing significant cross-sectional influences of the predictor variables was desirable even if significant change in the outcome variables was not observed.

Hypothesis 1: Test of Mediational Model

To establish mediation, four conditions must be satisfied (Baron and Kenny 1986). First, the direct effect of the predictor variable (i.e., program participation) on the outcome variable (i.e., social competence or academic performance) should be significant. Second, the effect of the predictor variable on the mediating variable (i.e., quality of experience after school) should be significant. Third, the effect of the mediating variable on the outcome variable should be significant. Fourth, the predictor variable → outcome variable total effect should drop significantly when the mediating variable is in the model.

The first condition was tested using regression analyses in order to determine if either measure of program participation (i.e., program status and dosage) had a significant direct effect on any of the outcome variables (i.e., social competence, English grades, and math grades). Results revealed that social competence was significantly higher for program participants than nonparticipants after controlling for background characteristics, \( F(1, 173) = 7.73, p < .01, \eta^2 = .042, \) but not after additionally controlling for the baseline measure of social competence, \( F(1, 173) = 1.49, n.s., \eta^2 = .007. \) English grades were significantly higher for program participants after controlling for both background and baseline factors, \( F(1, 173) = 4.26, p < .05, \eta^2 = .018. \) No other direct effects of program participation on outcomes were significant. Using Cohen’s (1988) effect size conventions for \( \eta^2 \) (i.e., .01 = small effect, .06 = moderate effect, and .14 = large effect), the significant effects were small to moderate.

Due to considering multiple predictor, mediator, and outcome variables, the most parsimonious way to observe the second and third conditions necessary for mediation was to examine the intercorrelations among all of these variables. The correlation matrix presented in Table 2 was especially useful because the mediational hypothesis could be eliminated where conditions two and three were not satisfied. Specifically, neither English nor math grades were significantly related to any of the quality of experience variables,
Table 2  Intercorrelations for outcome variables, program participation variables and quality of experience variables

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<td>5. Importance</td>
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<td>6. Engagement</td>
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<td>7. Positive affect</td>
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<td>8. Negative affect</td>
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<td>9. Social competence</td>
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<td>10. English grades</td>
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<td>11. Math grades</td>
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<td>.08</td>
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* p < .05.  ** p < .01.  *** p < .001

and therefore no additional mediational analyses predicting these variables were conducted. Social competence, on the other hand, was significantly related to all quality of experience variables except negative affect (i.e., condition three). With respect to condition two, program status was significantly associated with perceptions of challenge, skills, importance, and engagement; and dosage was significantly associated with challenge, skills, and positive affect.

Further testing of mediated relationships predicting social competence was then conducted using hierarchical regressions. Specifically, the potential existed for program status → social competence to be mediated by perceptions of challenge, skills, importance, and engagement. In addition, dosage → social competence was potentially be mediated by perceptions of challenge, skills, and positive affect. A single mediator variable was selected for the program status → social competence relationship, as well as for the dosage → social competence relationship, in order to test for mediation as parsimoniously as possible. Frazier et al.'s (2004) recommendation for choosing mediator variables is that the mediator’s relationships to the predictor and outcome variable be similar in magnitude. For program status → social competence, the engagement composite was used as the mediator variable because it best satisfied this criterion, and because it was of primary theoretical interest. For dosage → social competence, the challenge, skills, and positive affect variables were all derived from single items with comparable associations to program status and social competence. Therefore, they were combined into a composite variable ($M = 2.20, SD = 0.50, a = .79$). The new variable was labeled, Flow, due to the strong match between this composite of variables and previous conceptualizations of flow as the combination of challenge and skills found to be associated with positive affect (Moneta and Csikszentmihalyi 1996). After selecting these mediator variables, the two mediational models to be tested were: Model 1 program status → engagement → social competence; and Model 2 dosage → flow → social competence.

For Model 1, all four conditions for mediation were satisfied using regression analyses controlling for background characteristics (see Fig. 1). The fourth condition was examined by testing the significance of the indirect

![Diagram](https://via.placeholder.com/150)

Fig. 1  Diagram of paths in a mediational model of the association between program status and social competence as mediated by engagement. Note: Mediational model for associations between program status during the school year and social competence measured at the end of the school year as mediated by average engagement after school during the school year. Values on paths are path coefficients (standardized βs). Path coefficients outside parentheses are zero-order correlations (r). Path coefficients in parenthesis are standardized partial regression coefficients from equations that include the other variable with a direct effect on social competence. Models included race/ethnicity, mother's education, and gender as control variables.
effect using Kenny et al. (Baron and Kenny 1986; Kenny et al. 1998) equation for the standard error of the indirect effect. Significant mediation was found (z = 2.29), with engagement accounting for 23% of the total effect of program status on social competence. When the same regression analyses additionally controlled for the baseline measure of social competence, only the third condition was met.

For Model 2, the first condition was not satisfied, but the second, third, and fourth conditions were satisfied (see Fig. 2). Upon testing condition four, significant mediation was found (z = 2.44), and the percentage of the total effect on social competence mediated by flow was 100%. Although the direct relationship between dosage and social competence was small and nonsignificant, the indirect effect as mediated by flow was significant, with the effect of flow accounting for all of the total effect on social competence. When the baseline measure of social competence was added as a control variable, however, only the second condition was satisfied. In sum, mediation was established both for Model 1 and Model 2 after accounting for background characteristics, but not after additionally accounting for the baseline measure of social competence.

Hypothesis 2: Test of Differential Effects Model

Table 3 presents the results of general linear models (GLM) analyses predicting social competence, English grades, and math grades (columns) with experiential difference variables (rows). Again, race/ethnicity, mother’s education, and gender were utilized as controls (Model 1), with the baseline measure of the outcome variable added in separately (Model 2). Separate GLM models were analyzed for each experiential difference predictor variable. For each model, the standardized coefficient (β, with asterisks denoting significant F-test results) and effect size (η²) for

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<th>Experiential difference</th>
<th>Social competence</th>
<th>English grades</th>
<th>Math grades</th>
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<td>β</td>
<td>η²</td>
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<tr>
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<tr>
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<td>.005</td>
<td>0.20*</td>
</tr>
<tr>
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<td>.003</td>
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<tr>
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</table>

Model 1 included race/ethnicity, mother’s education, and gender as control variables. Model 2 included these same background controls plus the baseline measure of the outcome variable. * p < .05. ** p < .01
the adjusted association of the predictor variable with each outcome variable is provided. In the first column, none of the variables tested predicted social competence. In the second column, higher levels of challenge, importance, and engagement, and negative affect predicted higher English grades after controlling for background characteristics (i.e., in Model 1), but only the effect of importance and negative affect remained significant after additionally controlling for baseline grades (i.e., in Model 2). In the third column, higher levels of challenge, importance, and engagement predicted higher math grades after controlling for background characteristics. These effects remained significant after additionally controlling for baseline grades with the exception of the engagement effect. No other effects were significant. In terms of effect sizes, the effect of importance on math grades was moderate, and all other significant effects were small to moderate. For all significant effects on grades, one standard deviation increase in the experimental difference variable predicted between .18 and .26 of a standard deviation increase in grades.

Discussion

In this study, middle school students who participated in school-based after-school programs for one academic year were found to have higher English grades than nonparticipants at the end of that year after controlling for background and baseline measures, and higher social competence after controlling for background factors only. The role that quality of experience plays in the relationship between program participation and positive social and academic outcomes was tested in two different models. The relationship between program status and social competence was found to be partially mediated by engagement after controlling for background factors but not after controlling for baseline measures. Even though the direct effect of program dosage on social competence was not significant, dosage predicted flow, and flow, in turn, predicted social competence after background controls. No other mediation effects were found, however, including for academic outcomes. The hypothesis that greater differences in the quality of experience when at programs versus elsewhere would predict outcomes among program students was supported with respect to academic outcomes, but not supported with respect to social competence. Higher perceptions of challenge predicted higher math grades, higher perceptions of negative affect predicted higher English grades, and higher perceptions of importance predicted both higher English and math grades after controlling for both background and baseline measures. In addition, higher challenge predicted higher English grades, and higher engagement predicted both higher math and English grades after controlling for background but not baseline variables.

Differences in Social and Academic Outcomes between Participants and Nonparticipants

The finding that after-school program participants reported higher social competence than nonparticipants is generally consistent with research suggesting that after-school programs may have multiple, simultaneous benefits contributing to social competence (Fredricks and Eccles 2006a, b; Hansen et al. 2003). Numerous studies have demonstrated that participating in structured enrichment activities affords greater opportunities to interact with positive role models (Jordan and Nettles 2000), strategize about long-term goals (Radziszewska and Rogoff 1991), and otherwise improve social skills and emotional self-understanding (Larson and Brown 2007). However, the association must be interpreted with caution due to the possibility of selection effects and uncertainty with respect to the causality and directionality. In addition, the association did not remain after controlling for the baseline measure of social competence, indicating that program participants did not make greater gains in social competence throughout the academic year (i.e., they reported higher social competence at both baseline and outcome).

Program participants also reported higher English grades than nonparticipants after controlling for both background and baseline factors, indicating that participants made greater gains in English performance during the year of program participation. Higher academic performance among program participants may be partially explained by the routine offering of homework completion or “homework help” sessions in most after-school programs (Miller 2003). Many studies have found a significant, positive relationships between the amount of time spent on homework and achievement outcomes, particularly for grades 6–12 (see recent meta-analysis by Cooper et al. 2006). Furthermore, completing homework with peers and adults can enhance achievement in comparison to completing homework alone (Leone and Richards 1989). Organized after-school programs are also unique in their offering of academic enrichment activities (e.g., hands-on science projects, discovery units, and educational computer use). It must be noted that significant group differences between program participants and nonparticipants were found for English grades but not math grades. It is possible that engagement in the many non-academic program activities influences English achievement more than math achievement by facilitating social and linguistic learning (Cooper et al. 1999).
Quality of Experience as a Mediator between Program Participation and Outcomes

The multiple associations between program participation and the quality of students' experiences is consistent with previous research findings that adolescents report higher levels of challenge, skills, and emotions during after-school programs compared to other settings after school (Vandell et al. 2005). The difference in quality of experience, when in programs versus elsewhere after school was sometimes large (as with perceptions of challenge and skills) or moderate (as with perceptions of engagement and importance). In this study, engagement and flow after school predicted higher social competence, an effect accounting for a significant portion of the positive association between program participation and social competence. This finding is consistent with Larson's (2000) conception of positive youth development; when youth combine concentrated focus with positive emotions in the task at hand, a combination represented in both the flow and engagement variables, conditions are optimal for developing social competencies such as teamwork and conflict resolution. Larson further asserted that such conditions are found most frequently for youth while involved in structured, voluntary programs such as school-based after-school programs.

Quality of Experience in Programs versus Elsewhere as Related to Outcomes

The differential effects hypothesis was not supported with respect to social competence, but was partially supported with respect to academic outcomes, even though the magnitude of the effects was small to moderate. Results suggested that relative perceptions of environmental challenge and meaningfulness during after-school programs are related to gains in academic achievement. The finding supports perspectives of situational challenge and relevance as integral to flow-producing, authentic engagement and achievement (Csikszentmihalyi 1990; Newmann 1992). Because high experiential difference scores are created as a function both of high challenge, importance, and engagement in programs as well as low challenge, importance, and engagement outside of them, results are suggestive that at-risk students, or those who are otherwise least engaged when left to their own devices after school, may have the most to gain from after-school programs in terms of attaining positive academic outcomes (McLaughlin et al. 1994). It may appear surprising that achievement in English was predicted by the experiential difference in negative affect. However, it is possible that the frustration, agitation, or even physical exhaustion that may accompany more demanding activities is just as predictive of positive academic outcomes as the challenge itself.

Findings suggest that programs which are demanding, and offer challenging, relevant activities have the best chance of helping participants obtain positive academic outcomes. It is important to note that subjective appraisals of challenge and importance are by no means confined only to academic activities. Using the same data set as the present study, Shernoff and Vandell (2007) reported that homework completion and academic enrichment activities comprise only 13% of time use in programs. Organized sports, which accounted for 32% of participants' time use, was reported to be the most challenging, important, and engaging activity among six activity types (i.e., sports, arts enrichment, socializing, homework, academic enrichment, and sit-down games). Participants reported that socializing, which accounted for 11% of time use, was the least challenging and important activity.

Limitations of the Study

The study sample, including students from eight schools in three Midwestern states, was regionally but not nationally representative. Another sampling limitation relates to the greater percentage of program youth (84%) compared to non-program youth (16%), which was advantageous for analyses focused only on program participants (i.e., differential effects model), but created imbalance in comparisons of outcomes between participants and nonparticipants (e.g., program status in the mediational model). A second set of limitations related to use of the ESM. While the ESM possesses numerous advantages, it can influence the very engagement in an activity that it seeks to study by interrupting it. Furthermore, this study relied heavily on self-report data, which are vulnerable to problems with hasty completion, exaggeration, and intentional falsification, especially with respect to student self-reported measures of grades (Kuncel et al. 2005), parental education, and household income. Future studies may benefit from collecting test score data to supplement grades as a measure of scholastic achievement. A third limitation relates to the analytic approach utilized. Because this study focused on individual outcomes, it made sense to conceptualize all analyses at the individual level; however these data contained dependencies, both of repeated measures within persons and of persons among schools and programs. Therefore, future studies may consider accounting for such dependencies with multi-level modeling, as well as examining the role of specific programmatic features on students' subjective perceptions. Finally, many significant results did not hold up after baseline variables were controlled. To provide a realistic opportunity for program participants to make significant social and academic gains over time, multi-year longitudinal designs are recommended.
Directions for Future Research

It has been observed that the impact of extracurricular activities on outcomes can be overestimated due to selection effects (Fredricks and Eccles 2006b; Larson 2000). Although the small to moderate effect sizes found in this study are consistent with this observation, findings from the present study also suggest that research may overlook the influence on developmental and academic outcomes resulting directly from program experiences as opposed to merely the decision to attend programs. Indeed, this study found that a significant indirect effect on outcomes (i.e., as mediated by quality of experience) can exist even when no direct effect between program participation and outcomes was found. According to Frazier et al. (2004), this type of result can occur when an intervention produces both positive and negative effects that cancel out a significant direct effect. The after-school program field would benefit from shifting a focus from average effects of program participation to explaining why some students may benefit from program participation more than others, with attention to specific skills and competencies acquired from program participation, and considering the contextual, personal, and programmatic factors involved. In this study, for example, the increase in various emotions that participants reported when in programs compared to elsewhere after school (i.e., as tested in the differential effects model) appeared to be a more proximal predictor of academic outcomes than those same emotions averaged during out-of-school time (i.e., as tested in the meditational model). Whereas the former reflects the quality of program experiences compared to alternative experiences after school, the latter may reflect students' general dispositions or psychological traits susceptible to a variety of confounding factors. Recent research demonstrates that organized youth activities lead to a variety of immediate, "real world" psychosocial competencies such as initiative, identity exploration, reflection, emotional self-regulation, leadership, and teamwork skills (Hansen et al. 2003; Larson and Brown 2007). Examining the effect of these proximal predictors on outcomes is worthy of further investigation.

Conclusions and Implications for Youth Development

The present study adds to the current literature connecting school-based extracurricular activities to positive outcomes using stringent methodological standards. Especially considering that dosage was not significantly associated with either social competence or academic performance in this study, results suggest that the relative quality of experience in programs may be stronger and more positive predictor of academic performance than the quantity of experience in programs. This conclusion extends recent findings that psychological engagement, rather than the number of hours invested, in community service activities predicted benefits of participation in terms of community belonging and social responsibility (McGuire and Gamble 2006).

Because the effects of after-school program participation on quality of experience, social competence, and academic performance were generally positive and suggest the importance of program quality, this study supports recommendations for increasing the opportunities of youth to participate in high-quality programs offering such activities (Eccles and Gootman 2002). Funding for sports, clubs, and after-school programs is vulnerable in times of fiscal constraint, especially when studies suggest the lack of a strong relationship between program participation and academic outcomes (James-Burduny et al. 2007). These findings suggest, however, that after-school programs can promote social competence and academic performance by providing challenging and meaningful opportunities for youth engagement (Hill 2008).

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References