

Participation in Out-of-School Settings and Student Academic and Behavioral Outcomes¹
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Objectives

In the past decade, federal and state policymakers have directed increasing attention and funding to out-of-school (OOS) activities that have the potential to support educational achievement and set young people on a positive trajectory toward adulthood (Eccles & Gootman, 2002). Research attention to OOS settings has increased concomitantly. One strand of research has focused on after-school programs, especially those provided for low-income children as a means of improving academic performance. Program participation is reported to be associated with improved academic, socioemotional, and behavioral outcomes for children and adolescents (Huang, Gribbons, Kim, Lee, & Baker, 2000; Mahoney, Lord, & Carryl, 2005; Posner & Vandell, 1994; Riggs, Bohnert, Guzman, & Davidson, 2010). However, other investigators have reported either no or negative associations between program participation and student outcomes (James-Burdumy et al., 2005; Pettit, Laird, Bates, & Dodge, 1997). These discrepant findings may be due to differences in program quality.

Another strand of OOS research has focused on structured activities such as extracurricular clubs and sports at school and community-based enrichment activities and lessons. In general, participation in structured activities has been found to be associated with gains in grades, academic achievement, work habits, and self-concept, and reductions in externalizing behaviors (Bohnert & Garber, 2007; Denault, Poulin, & Pedersen, 2009; Jordan & Nettles, 2000; Marsh & Kleitman, 2002; Ripke, Casey, & Houston, 2006).

A third area of research on OOS contexts focuses on unsupervised time with peers, widely reported as associated with negative developmental outcomes such as externalizing behaviors and substance use (Borawski, Ievers-Landis, Lovegreen, & Trapl, 2003; Colwell, Pettit, Meece, Bates, & Dodge, 2001; Greene & Banerjee, 2009; Pettit, Bates, Dodge, & Meece, 1999).

Research to date provides insights into the benefits and drawbacks of participation in different types of OOS contexts, although it often has failed to capture the full experience of students, many of whom are involved in a variety of settings (Carver & Iruka, 2006). In the current study, we examine the intensity or amount of low-income students' participation in multiple OOS contexts—high-quality programs, structured activities, and unsupervised time with peers—and associations with student academic and behavioral outcomes, controlling for prior adjustment and student and family characteristics.

Theoretical Framework

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This study is grounded in a developmental affordances model (Busseri & Rose-Krasnor, 2009), in which programs and structured activities are viewed as affording positive development by offering opportunities to learn new skills, enjoy supportive relationships with adults, and build friendships with peers. Time and sustained involvement in the setting is necessary for students to obtain optimal benefit from the opportunities and experiences provided. Therefore, we focus on **intensity** of participation in OOS contexts. We expect that more time in high-quality programs and in structured activities will be associated with positive developmental outcomes (better work habits and GPA, greater self-efficacy, and fewer school absences and less misconduct), whereas more unsupervised time with peers will be associated with the outcomes in the opposite direction.

Data Source and Methods

This report uses data from a prospective longitudinal study that examined effects of enrollment in high-quality after-school programs on student development outcomes. The study was conducted in 35 schools (19 elementary, 16 middle) in 14 communities in 8 states. The schools primarily served low-income children of color and were affiliated with high-quality after-school programs. The recruitment sample ($N = 2,914$) comprised students in Grades 3, 4, 6, and 7: 47% boys; 79% received free or reduced-price lunch; and 66% Hispanic, 20% White, 10% Black, 4% Asian/other.

The study was conducted in two phases. Phase 1 followed the students for two years and involved multiple data collections (baseline, end of Years 1 and 2). Phase 2 was conducted four years later and involved one data collection at the end of the school year.

The analysis sample for this paper included 435 students who provided Phase 2 data (Grades 8, 9, 11, 12). The students were enrolled at 45 schools in Phase 2, located in 11 of the original 14 communities. The analysis sample was similar to the recruitment sample demographically, except that students in the analysis sample were more likely to be White, $\chi^2(1, N = 2914) = 7.26, p = .007$, and less likely to be Black $\chi^2(1, N = 2914) = 9.53, p = .002$.

Out-of-School (OOS) Time Use Measures

Program participation. Individual students' daily attendance records were obtained from the high-quality after-school programs affiliated with the participating schools in Phase 1. We averaged the number of days of participation in Year 1 and in Year 2 to create a mean Phase 1 program dosage score.

Other OOS activities and unsupervised time with peers. Students reported participation in other structured activities three times in Phase 1 (baseline, end of Year 1, end of Year 2): (a) organized sports teams; (b) school-based activities (e.g., band, yearbook, cheer); (c) lessons in music, art, dance, sports; (d) Scouts, Girls Inc., 4-H Club, etc.; (e) other club or organization; and (f) religious classes and services. They also were asked how often they "hung out with friends without an adult there." Responses were made on a 4-point scale (1 = *not at all/once or twice*, 4 = *4 or more days a week*). We calculated mean scores across the six structured activity items at each time point and averaged the mean scores to create an overall Phase 1 structured activity intensity score. We calculated overall Phase 1 unsupervised with

peers as the mean of the item scores at the three administrations.

In Phase 2, students reported their after-school and weekend participation in seven types of structured activities: (a) organized sports; (b) music, dance, drama, or art activities (e.g., band, drama club); (c) academic clubs (e.g., debate, chess); (d) nonacademic clubs (e.g., pep club, career); (e) programs (e.g., Scouts, 4-H, Boys & Girls Club); (f) volunteer or community service work; and (g) religious services, classes, or groups. Participation frequency was rated on a 4-point scale (0 = *not at all*, 3 = *3 or more days a week*). We calculated overall Phase 2 activity intensity as the mean of the seven items.

The Phase 2 measure included two questions about unsupervised time with peers: (a) “During a typical week, how many weekdays do you spend at least 30 minutes in the afternoon or evening after school with other kids such as friends or neighbors (not your brothers or sisters) without an adult around?” (0 = *none*, 5 = *5 days per week*); and (b) “During a typical weekend (Saturday and Sunday), how much time do you spend with other kids such as friends or neighbors (not your brothers or sisters) without an adult around?” (0 = *none at all*, 5 = *more than 7 hours*). We standardized the scores on the two items and averaged them to obtain a Phase 2 unsupervised with peers score.

Student Outcome Measures

Work habits. Students completed an adaptation of the six-item Work Habits scale from the Mock Report Card (Pierce, Hamm, & Vandell, 1999) in Phases 1 and 2. Items were reworded for student self-report and the response scale was modified (1 = *not at all true*, 4 = *really true*). An overall work habits score was computed as the mean of the item scores ($\alpha = .74$). We use baseline and Phase 2 data in our analyses.

Self-efficacy. Students completed a seven-item modification of the Self-Efficacy Scale (Walker & Arbretton, 2004) using a 4-point response scale (1 = *not at all true*, 4 = *really true*) in Phase 2. Negatively worded items were reverse coded prior to scoring and a self-efficacy score was computed as the mean of the item scores ($\alpha = .71$). Classroom teachers completed a teacher version of the measure at baseline ($\alpha = .93$) to assess student efficacy, which we use as the prior adjustment control for self-efficacy.

Misconduct. In Phases 1 and 2, students completed the 11-item Misconduct Scale, an adaptation of the Self-Reported Behavior Index (Brown, Clasen, & Eicher, 1986), about their engagement in minor misconduct (0 = *never*, 4 = *4 or more times a week*). An overall misconduct score was computed as the mean of the item scores ($\alpha = .78$). We use baseline and Phase 2 data in our analyses.

Grade point average. Schools reported cumulative grade point average (GPA) at the end of the Phase 2 school year. Teachers reported students’ academic performance on the Mock Report Card at baseline. Elementary teachers reported performance in reading, oral and written language, math, social studies, science; middle school English teachers reported performance in reading and oral and written language (1 = *below grade level*, 5 = *beyond grade level*). Overall academic performance was computed as the mean of the item scores ($\alpha = .95$), which we use as the prior adjustment control for GPA.

School absences. Schools reported the number of days students were present and absent during the year prior to the start of the study (baseline), and for the Phase 2 school year. We summed days present and absent to obtain number of days of enrollment and computed the proportion of enrolled days that the students were absent from school.

Covariates

Covariates include student sex and race/ethnicity (collected from school records); and household structure, family income, and maternal education, collected from parents in Phase 1 (baseline, end of Year 2).

Results

Table 1 provides descriptive statistics for the analysis sample's demographic characteristics, out-of-school time use, and student outcomes. Phase 1 participation in the high-quality after-school programs ranged from 0-182.5 days annually. Average participation in other structured activities and in unsupervised contexts was between not at all and once per week. In Phase 2, structured activity participation intensity was, on average, rated between not at all and once in a while. During a typical week in Phase 2, students spent at least 30 minutes unsupervised with peers on more than two weekdays and for about three hours during weekends.

Table 2 shows the intercorrelations of program dosage, structured activity participation intensity, and unsupervised time with peers.

Multiple regression analyses examined associations of program dosage, structured activity participation, and unsupervised time with peers with student academic and behavioral outcomes at Phase 2, controlling for student and family characteristics and prior adjustment. In order to account for the nesting of students in schools, the Huber-White correction was used (Rogers, 1993). Multiple imputation was used to address missing data. Ten imputed data sets were created in which different samples were selected for missing observations. Regression estimates were combined across the multiple data sets using Rubin's (1987) rules for combination.

As shown in Table 3, each of the composite measures of participation intensity in OOS contexts was associated with student outcomes at Phase 2. Higher program dosage was associated with gains in self-efficacy and reductions in school absences relative to baseline. Greater participation intensity in structured activities at Phase 2 was associated with gains in work habits, self-efficacy, and GPA. More unsupervised time with peers in Phase 1 was associated with lower GPA and more school absences; in Phase 2, with reductions in work habits and self-efficacy, and greater misconduct.

Significance

Our results demonstrate the importance of considering the multiple OOS contexts that students participate in, rather than a single context, in examinations of associations between participation and student outcomes. Participation in all three contexts we examined was

associated with the outcomes in expected directions in this low-income sample. In accord with the developmental affordances model, students who participated in high-quality after-school programs and in other structured activities, settings likely to offer opportunities for skill building and supportive relationships with adults and peers that afford positive development, for greater amounts of time experienced greater academic and behavioral benefits. Furthermore, the differential associations of intensity of participation in the programs and in other structured activities with student outcomes suggest that these settings may provide different types of developmental affordances. Our findings of negative developmental outcomes associated with unsupervised time with peers underscore the importance of youth spending time in positive development settings.

References

- Bohnert, A. M., & Garber, J. (2007). Prospective relations between organized activity participation and psychopathology during adolescence. *Journal of Abnormal Child Psychology, 35*, 1021-1033.
- Borawski, E. A., Ievers-Landis, C. E., Lovegreen, L. D., & Trapl, E. S. (2003). Parental monitoring, negotiated unsupervised time, and parental trust: The role of perceived parenting practices in adolescent health risk behaviors. *Journal of Adolescent Health, 33*, 60-70.
- Brown, B. B., Clasen, D. R., & Eicher, S. A. (1986). Perceptions of peer pressure, peer conformity, dispositions, and self-reported behavior among adolescents. *Developmental Psychology, 22*, 521-530.
- Busseri, M. A., & Rose-Krasnor, L. (2009). Breadth and intensity: Salient, separable, and developmentally significant dimensions of structured youth activity involvement. *British Journal of Developmental Psychology, 27*, 907-933.
- Carver, P. R., & Iruka, I. U. (2006). *After-school programs and activities: 2005* (National Center for Education Statistics Rep. No. 2006-076). Washington, DC: U.S. Department of Education.
- Colwell, M. J., Pettit, G. S., Meece, D., Bates, J. E., & Dodge, K. A. (2001). Cumulative risk and continuity in nonparental care from infancy to early adolescence. *Merrill-Palmer Quarterly, 47*, 207-234.
- Denault, A., Poulin, F., & Pedersen, S. (2009). Intensity of participation in organized youth activities during the high school years: Longitudinal associations with adjustment. *Applied Developmental Science, 13*, 74-87.
- Eccles, J. S. & Gootman, J. A. (Eds.). (2002). *Community programs to promote youth development*. Washington, DC: National Academies Press.
- Greene, K., & Banerjee, S. C. (2009). Examining unsupervised time with peers and the role of association with delinquent peers on adolescent smoking. *Nicotine & Tobacco Research, 11*, 371-380.
- Huang, D., Gribbons, B., Kim, K. S., Lee, C., & Baker, E. L. (2000). *A decade of results: The impact of the LA's BEST after school enrichment program on subsequent student achievement and performance*. Los Angeles, CA: UCLA Center for the Study of Evaluation.
- James-Burdumy, S., Dynarski, M., Moore, M., Deke, J., Mansfield, W., & Pistorino, C. (2005). *When schools stay open late: The national evaluation of the 21st Century Community Learning Centers Program. Final report*. Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and

Regional Assistance.

- Jordan, W. J., & Nettles, S. M. (2000). How students invest their time outside of school: Effects on school-related outcomes. *Social Psychology of Education, 3*, 217-243.
- Mahoney, J. L., Lord, H., & Carryl, E. (2005). An ecological analysis of after-school program participation and the development of academic performance and motivational attributes for disadvantaged children. *Child Development, 76*, 811-825.
- Marsh, H. W., & Kleitman, S. (2002). Extracurricular school activities: The good, the bad, and the non-linear. *Harvard Educational Review, 72*, 464-514.
- Pettit, G. S., Bates, J. E., Dodge, K. A., & Meece, D. W. (1999). The impact of after-school peer contact on early adolescent externalizing problems is moderated by parental monitoring, perceived neighborhood safety, and prior adjustment. *Child Development, 70*, 768-778.
- Pettit, G. S., Laird, R. D., Bates, J. E., & Dodge, K. A. (1997). Patterns of after-school care in middle childhood: Risk factors and developmental outcomes. *Merrill-Palmer Quarterly, 43*, 515-538.
- Pierce, K. M., Hamm, J. V., & Vandell, D. L. (1999). Experiences in after-school programs and children's adjustment in first-grade classrooms. *Child Development, 70*, 756-767.
- Posner, J. K., & Vandell, D. L., (1994). Low-income children's after-school care: Are there beneficial effects of after-school programs? *Child Development, 65*, 440-456.
- Riggs, N. R., Bohnert, A. M., Guzman, M. D., & Davidson, D. (2010). Examining the potential of community-based after-school programs for Latino youth. *American Journal of Community Psychology, 45*, 417-429.
- Ripke, M. N., Huston, A. C., & Casey, D. M. (2006). Low-income children's activity participation as a predictor of psychosocial and academic outcomes in middle childhood and adolescence. In A. C. Huston & M. N. Ripke (Eds.), *Developmental contexts in middle childhood: Bridges to adolescence and adulthood* (pp. 260-282). New York: Cambridge University Press.
- Rogers, W. H. (1993). Regression standard errors in clustered samples. *Stata Technical Bulletin, 13*, 19-23.
- Rubin, D. B. (1987). *Multiple imputation for nonresponse in surveys*. New York: Wiley.
- Walker, K. E., & Arbreton, A. J. A. (2004). *After-school pursuits: An examination of outcomes in the San Francisco Beacon initiative*. Philadelphia: Public/Private Ventures.

Table 1

Descriptive Statistics for Student and Family Characteristics, Time Use, and Student Outcomes

Variable	<i>n</i>	<i>M</i> or %	<i>SD</i>	Range	
				Potential	Actual
Student female	435	56.55%			
Student race/ethnicity	435				
Asian/other		5.75%			
Black, non-Hispanic		5.98%			
Hispanic		64.14%			
White, non-Hispanic		24.14%			
Family income	401	6.15	2.86	1-11	1-11
Two-parent household	412				
At both Phase 1 time points		68.45%			
At one Phase 1 time point		8.98%			
No in Phase 1		22.57%			
Maternal education	409	3.15	1.61	1-6	1-6
Phase 1 program dosage	435	30.15	46.57	0-185	0-182.5
Phase 1 structured activity intensity	435	1.62	0.45	1-4	1-3.25
Phase 1 unsupervised with peers	435	1.60	0.81	1-4	1-4
Phase 2 structured activity intensity	435	0.89	0.59	0-3	0-2.71
Phase 2 unsupervised with peers					
Weekdays	423	2.26	1.81	0-5	0-5
Weekend hours	424	2.12	1.68	0-5	0-5
Baseline work habits	427	3.41	0.56	1-4	1.33-4
Baseline efficacy	399	3.06	0.70	1-4	1-4
Baseline misconduct	428	0.44	0.53	0-4	0-2.80
Baseline academic performance	396	2.90	1.15	1-5	1-5
Baseline school absences (proportion)	377	.04	.05	0-1	0-.70
Phase 2 work habits	435	3.26	0.48	1-4	1.83-4
Phase 2 self-efficacy	435	3.28	0.50	1-4	1.29-4
Phase 2 misconduct	434	0.50	0.44	0-4	0-3.64
Phase 2 cumulative GPA	417	2.80	0.77	0-4	0.33-4
Phase 2 school absences (proportion)	419	.05	.06	0-1	0-.33

Table 2

Intercorrelations of Time Use Variables

	1	2	3	4
1. Phase 1 program dosage				
2. Phase 1 structured activity intensity	.18 ^{***}			
3. Phase 1 unsupervised with peers	-.07	.18 ^{***}		
4. Phase 2 structured activity intensity	.03	.26 ^{***}	-.00	
5. Phase 2 unsupervised with peers	-.00	.09	.26 ^{***}	.17 ^{***}

Note. $N = 435$ except that $N = 429$ for correlations with the Phase 2 unsupervised with peers variable.

^{***} $p < .001$.

Table 3

Summary of Multiple Regression Analyses Predicting Student Outcomes from Time Use in Phases 1 and 2

Predictor	Work habits β	Self- efficacy β	Misconduct β	GPA β	School absences β
Phase 1 program dosage	-.01	.08**	-.03	.02	-.14***
Phase 1 structured activity intensity	-.09	.04	.07	-.09	.07
Phase 1 unsupervised with peers	-.09	-.03	.10	-.16**	.13*
Phase 2 structured activity intensity	.19***	.16***	-.03	.10*	-.07
Phase 2 unsupervised with peers	-.13*	-.17**	.22***	-.04	.05
R^2	.15	.11	.09	.25	.16
F	18.19***	7.00***	9.85***	8.69***	3.88***

Note. $N = 435$. Missing data were handled with multiple imputation. Covariates in all analyses included student sex and race/ethnicity, cumulative Phase 1 family income, cumulative Phase 1 two-parent household, maternal education, Phase 2 grade in school, and adjustment at baseline. Analyses were clustered on the schools the students were enrolled in at Phase 2 to account for the nesting of students in schools.

* $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.