

Early Enrichment Opportunities: Participation and Cognitive Benefits in Kindergarten

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Children's out-of-school time in elementary school can include after-school programs, informal child care, extracurricular activities, and experiences and activities with family in the home and community. This paper focuses on kindergartners' extracurricular activities and use of community resources and impact of participation on spring achievement.

Data Source

The *Early Childhood Longitudinal Study, Kindergarten Class of 1998-99 (ECLS-K)*

- sponsored by the U.S. Department of Education
- followed a nationally representative sample of children from kindergarten through fifth grade

Analytic Sample

- 15,688 children during their kindergarten year, in 2,932 classes within 943 schools
- 51% boys and 49% girls
- 60% white, 17% black, 16% Hispanic, 3% Asian-Pacific Islander, and 4% other
- 37% urban, 42% suburban, and 21% rural

Measures

- Key independent variables
 - Extracurricular activities. Outside of school hours in each of the following: sports, scouts, music lessons, art lessons, dance lessons, organized performances (e.g., choir), craft classes, and non-English language lessons. Total count and type (i.e., sports, scouts, and at least one arts)
 - Community resources. Participation in the past month in each of the following: visiting a library, attending a play or concert, visiting a museum or historical site, going to a zoo or aquarium, and attending a sporting event. Also, regular use of the local YMCA and park or recreation center in the past year. Total count and type (i.e., cognitive-cultural and sports-related)
- Covariates
 - Child-level. child age at assessment, child sex, child race, child disability, preschool participation, kindergarten repeater, after-school care, home literacy environment, parent education, two-parent family, perceived neighborhood disorder
 - Class-level. kindergarten program type
 - School-level. school type, school urbanicity
- Dependent variables: language and literacy, mathematics, general knowledge(science/social studies)

Results

Participation

Not all children spend their out-of-school time engaged in extracurricular activities or using community resources on a regular basis. Kindergartners' participation in enrichment opportunities varies by child and family characteristics.¹ For example,

- Child sex. Extracurricular arts participation and scouts are seen more in girls than boys (47% girls vs 24% boys in arts; 21% vs 9% scouts). Sports participation is greater for boys than girls (56% vs 42%). No practical differences appear for community resources by gender.

¹ ANOVA for total counts, chi-square independence tests for types. Data weighted. Any differences reported are significant at $p < .05$, practical significance of difference minimum 0.5 in total count or 5% for type.

- Child race. White children are more likely to engage in sports and scouts as compared to black, Hispanics, and Asians (e.g., 60%, 30%, 33%, 32%, respectively in sports). Hispanics are less likely than other racial-ethnic groups to engage in arts activities. Whites use cognitive community resources more than blacks; Asians are more likely to use these resources than blacks or Hispanics. Whites are more likely than all groups to utilize sport community resources, and black and Hispanics use them more than Asians (81% whites, 73% blacks, 76% Hispanics, 68% Asians).
- After-school care. Children in relative or nonrelative nonparental care are less likely to engage in sports than their counterparts not receiving such care. Children at centers after-school are more likely to participate in arts and sports than children not in center-based care (40% vs 34% respectively in arts; 56% vs 47% in sports).

Cognitive Benefits

Given the clustered nature of the ECLS-K data (i.e., children within classrooms within schools), we examine the relationship between enrichment opportunities and cognitive outcomes employing a 3-level model. In brief,

- In terms of how much enrichment is necessary, a curvilinear relationship was found between number of activities and kindergarten achievement. An initial positive impact on reading, math, and general knowledge skills was true for extracurricular activities and to a lesser extent for community resource use as well. The shift from none to 1 appears key; a difference of 0.8 to 1 point was found for children engaging in at least one extracurricular activity as compared to those in none. The relationship, however, weakens as the number of activities increases and levels off after about 4 total activities for extracurricular and after 2 to 4 resources for community resources.
- The type of extracurricular activity has varying effects on achievement. In terms of extracurricular activities, arts and sports appear to provide benefits in all 3 cognitive domains. Participating in organized clubs like scouts imparts positive effects for math and general knowledge, but not reading. The relationship between enrichment and achievement appears strongest for arts, followed by sports, and to a lesser extent scouts. In particular, the relationship of sports and scouts with general knowledge appears moderated by income, with greater benefits for poorer children.
- The type of community resource also has varying impact. Cognitive-cultural community resources have a positive benefit for reading, math, and general knowledge. Sport community resources have a positive benefit for only general knowledge, depending on family income.
- Preliminary investigations considering fall entry skills demonstrate that children with the weakest entry skills benefit the most. Children in the lowest quartile in the fall who participate in extracurricular activities or community resources demonstrate higher gains than children in the lowest quartile who do not participate. Children in the highest quartile do not differ in achievement gains by participation.

Conclusions

As early as kindergarten, children's early enrichment opportunities can impact achievement. Thus, the structure of children's out-of-school time during early childhood could potentially provide an early basis for supporting current learning and setting a path for later involvement, when children and adolescents choose how to spend their time. Participation, however, differs by child sex and race, parent education, and income, with one-third of kindergartners not involved in any extracurricular activities. Equity of access and promotion of use may be needed. As budget cuts are removing art, music, and physical education from schools, support for enrichment opportunities in the community and schools is warranted.