

U.S. Department of Education
Institute of Education Sciences
NCES 2004-037

The Summer After Kindergarten: Children's Activities and Library Use by Household Socioeconomic Status

Children enter kindergarten showing wide achievement gaps by family socioeconomic status (SES) (Coley 2002; Lee and Burkam 2002).¹ A number of studies suggest that achievement gaps grow during the summer months when children are away from school (Heyns 1978; Cooper et al. 1996; Alexander, Entwisle, and Olson 2001). This finding may be related to a number of factors, including differences in children's summer activities; children may differ by SES group in the extent to which they have the opportunity to engage in activities that reinforce school learning or broaden knowledge more generally—activities such as reading, attending library programs, or visiting museums. However, we know relatively little about the extent to which children actually differ by SES group in their engagement in these kinds of activities during the summer months.

This Issue Brief provides a description of children's participation in various activities during the summer after kindergarten. Children's participation in activities is compared across a measure of SES. This Brief also takes a closer look at one summer activity in particular—children's library use. The Issue Brief draws on data from the Early Childhood Longitudinal Study, Kindergarten Class of 1998–99 (ECLS-K), which provide nationally representative information regarding the approximately 3.9 million children enrolled in kindergarten during the 1998–99 school year. The ECLS-K included a parent interview in fall 1999 that asked parents about their children's participation in activities during the summer of 1999.²

The categorical measure of household SES used in this Issue Brief is based on a continuous, composite variable derived from parental education, parental occupation, and household income in spring 1999.³ Findings are reported separately for children in households with low, middle, and high SES. Low SES signifies the bottom 20 percent of the variable's distribution, middle SES the middle 60 percent, and high SES the top 20 percent. All findings presented in this Issue Brief are descriptive in nature and based on parent reports.⁴

Participation in Activities During the Summer

Children in households with low SES were the least likely to participate in each of the nine activities listed in table 1 during the summer after their kindergarten year, while children in households with high SES were the most likely to do so. For example, 20 percent of low SES children went to art, science, or discovery museums over the summer compared to 38 percent of middle SES children and 62 percent of high SES children. Forty-five percent of low SES children went to a zoo, aquarium, or petting farm while 64 percent of middle SES children and 71 percent of high SES children did so. Some 46 percent of low SES children went to a library over the course of the summer compared to 66 percent of middle SES children and 80 percent of high SES children.

The ECLS-K asked parents a series of additional questions concerning children's library participation, including the num-

Table 1. Percentage of children who participated in various activities during the summer after kindergarten, by socioeconomic status (SES): 1999

Household SES	Library	Bookstore	State or national parks	Art, science, or discovery museums	Zoo, aquarium, or petting farm	Historic sites	Concerts or plays	Vacation	Day or overnight camp
Total	64.8	53.0	55.1	38.9	61.2	39.9	24.4	75.2	20.4
Low SES	46.4	30.7	43.6	19.5	45.0	21.1	13.6	53.7	5.4
Middle SES	66.2	52.8	57.1	38.0	63.7	41.4	23.3	76.9	18.4
High SES	80.2	77.3	61.3	62.4	70.6	54.8	39.3	93.1	42.5

NOTE: All estimates are based on parental reports. Sample sizes may differ by column because cases with missing data were excluded. Household SES is a composite variable based on parental education, parental occupation, and household income in spring 1999. Low SES signifies the bottom 20 percent of the variable's distribution, middle SES the middle 60 percent, and high SES the top 20 percent. Not all apparent differences in this table are statistically significant. Standard errors are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2004037>.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 1998–99 (ECLS-K), spring and fall 1999.

ber of visits children made to libraries over the summer, whether or not the children participated in story time at the library, and whether or not the children had a neighborhood library. Because library visits were so common for all groups of children, and because of this activity's potential for academic enrichment (Heyns 1978), this Issue Brief explores children's library usage in greater depth.

Library Use by SES and Neighborhood Library Availability

Table 2 provides more detailed information on the extent and nature of children's library use in the summer after kindergarten, in terms of average number of visits and participation in story time. While table 1 shows that low SES children were the least likely to visit a library at all over the summer and high SES children were the most likely to do so, table 2 shows that—of those children that visited a library—low SES library visitors went, on average, less often (4 times) than middle or high SES visitors (7 times each). However, among those children who visited a library over the summer, low SES and middle SES library visitors were more likely to attend story time at a library than high SES library visitors (27 percent and 26 percent compared to 20 percent).

Library use also varied by parental report of neighborhood library availability. Compared to children whose parents reported having no neighborhood library, children whose parents reported a neighborhood library were more likely to visit a library at least once over the summer (70 percent compared to 47 percent). In addition, children who visited the library over the summer went more frequently if their parents reported having a neighborhood library (7 times on average compared to 5 times on average). These two relationships held for low and middle SES children. Parental report of neighborhood library availability varied by SES; low SES parents (64 percent) were less likely than middle SES parents (81 percent) to report having a neighborhood library, and both groups were less likely than high SES parents (91 percent) to do so.

Another way to examine the data in table 2 is to look at how children's library use varies by household SES while taking into account parental reports of neighborhood library availability. Among children whose parents reported no neighborhood library, low SES children were the least likely to visit the library (31 percent) while high SES children were the most likely to do so (72 percent). In addition, when no neighborhood library was reported, low SES library visitors went less frequently, on average, than middle or high SES library visitors (4 times compared to 5 and 6 times, respectively). These relationships also held among children whose parents reported having a neighborhood library. However, the difference between the percentage of low and high SES children who visited the library was smaller in neighborhoods with a library than in those without one (26 percentage point gap compared to 41 percentage point gap). Among children whose parents reported no neighborhood library, low SES library visitors attended story time at higher levels than high SES library visitors (28 percent compared to 15 percent).

Conclusion

In summary, the broad picture of children's involvement in activities during the summer after their kindergarten year shows substantial differences in participation by socioeconomic status (SES). Low SES children were the least likely SES group to participate in the summer activities investigated in this Issue Brief; high SES children were the most likely to participate in these same activities.

Looking more closely at children's summer library use reveals a more complicated picture. Low SES children were the least likely SES group to go to the library, and if they did go, they went less frequently than children in the other SES groups. However, low SES library visitors attended story time at levels as high as or higher than library visitors from other SES groups. The gap between the percentage of low and high SES children who visited the library was smaller for those children whose parents reported having a neighborhood library than for those children whose parents reported no neighborhood library.

Table 2. Children's library usage during the summer after kindergarten, according to neighborhood library availability, by socioeconomic status (SES): 1999

	All children				Children with library in neighborhood			Children with no library in neighborhood		
	Percent with library in neighborhood	Library visitors		Percent attended story time at library	Percent visited library	Library visitors		Percent visited library	Library visitors	
		Percent visited library	Mean number of visits to library			Mean number of visits to library	Percent attended story time at library		Mean number of visits to library	Percent attended story time at library
Total	79.1	64.8	6.5	24.5	69.9	6.8	25.0	46.7	5.0	21.3
Low SES	64.3	46.4	4.5	27.3	55.6	4.7	26.8	30.8	3.7	28.2
Middle SES	80.5	66.2	6.8	25.6	69.7	7.1	26.5	52.8	5.2	20.1
High SES	90.7	80.2	6.9	20.0	81.1	7.0	20.5	71.8	6.0	14.9

NOTE: All estimates are based on parental reports. Sample sizes may differ by column because cases with missing data were excluded. Household SES is a composite variable based on parental education, parental occupation, and household income in spring 1999. Low SES signifies the bottom 20 percent of the variable's distribution, middle SES the middle 60 percent, and high SES the top 20 percent. Not all apparent differences in this table are statistically significant. Standard errors are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2004037>.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 1998–99 (ECLS-K), spring and fall 1999.

The list of summer activities investigated in this Issue Brief is by no means comprehensive, and further research could expand the list. Future research based on the Early Childhood Longitudinal Study could improve our understanding of the linkages between summer activities, socioeconomic status, and academic achievement.

Footnotes

¹Socioeconomic status is one's standing relative to others with respect to social and economic factors (such as education, occupation, and income).

²Analysis in this Issue Brief is based on data from 4,861 cases in the ECLS-K fall first grade subsample. When these cases are weighted using the C23PW0 weighting variable, estimates are representative of the total population of children enrolled in kindergarten during the 1998–99 school year.

³More information on the SES variable is available in chapter 7 (section 7.4.2) of the *ECLS-K Base Year Public-Use Data Files and Electronic Codebook User's Manual* (NCES 2001–029), available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2001029>.

⁴All differences discussed are statistically significant at the .05 level as measured by two-tailed Student's *t* tests. In addition to the requirement of statistical significance, percentage point differences are only discussed if they are greater than 5 percentage points.

References

- Alexander, K.L., Entwisle, D.R., and Olson, L.S. (2001). Schools, Achievement, and Inequality: A Seasonal Perspective. *Educational Evaluation and Policy Analysis*, 23(2): 171–191.
- Coley, R.J. (2002). *An Uneven Start: Indicators of Inequality in School Readiness*. Princeton, NJ: Educational Testing Service. Available: <http://www.ets.org/research/pic/Unevenstart.pdf>.
- Cooper, H., Nye, B., Charlton, K., Lindsay, J., and Greathouse, S. (1996). The Effects of Summer Vacation on Achievement Test Scores: A Narrative and Meta-Analytic Review. *Review of Educational Research*, 66(3): 227–268.
- Heyns, B. (1978). *Summer Learning and the Effects of Schooling*. New York: Academic Press.
- Lee, V.E., and Burkam, D.T. (2002). *Inequality at the Starting Gate: Social Background Differences in Achievement as Children Begin School*. Washington, DC: Economic Policy Institute.

The *Issue Brief* series presents information on education topics of current interest. All estimates shown are based on samples and are subject to sampling variability. All differences are statistically significant at the .05 level. In the design, conduct, and data processing of National Center for Education Statistics (NCES) surveys, efforts are made to minimize the effects of nonsampling errors, such as item nonresponse, measurement error, data processing error, or other systematic error. For more information on the Early Childhood Longitudinal Study, visit <http://nces.ed.gov/ecls>.

This *Issue Brief* was prepared by David Meyer, Daniel Princiotta, and Lawrence Lanahan of the Education Statistics Services Institute (ESSI). This *Issue Brief* was desktopped by Carol Rohr of Pinkerton Computer Consultants, Inc. For further information, contact Edith McArthur, NCES, at (202) 502-7393 or Edith.McArthur@ed.gov. To order additional copies of this *Issue Brief* or other NCES publications, call 1 (877) 4ED-Pubs or visit <http://www.edpubs.org>. NCES publications are also available on the Internet at <http://nces.ed.gov/>.

The Issue Brief series presents information on education topics of current interest.

NCES 2004-037

The Summer After Kindergarten: Children's Activities and
Library Use by Household Socioeconomic Status

Issue
Brief

U.S. Department of Education
ED Pubs
8242-B Sandy Court
Jessup, MD 20794-1398

Official Business
Penalty for Private Use, \$300



Postage and Fees Paid
U.S. Department of Education
Permit No. G-17



Table A1. Standard errors for Table 1: Percentage of children who participated in various activities during the summer after kindergarten, by socioeconomic status (SES): 1999

Household SES	Library	Bookstore	State or national parks	Art, science, or discovery museums	Zoo, aquarium, or petting farm	Historic sites	Concerts or plays	Vacation	Day or overnight camp
Total	1.43	1.20	1.10	1.36	1.26	1.10	0.96	1.26	1.44
Low SES	2.31	2.22	2.22	1.88	2.72	1.88	1.37	2.25	0.89
Middle SES	1.53	1.42	1.44	1.36	1.43	0.95	1.07	1.53	1.59
High SES	1.58	1.36	1.56	2.16	2.19	2.15	1.69	0.73	2.46

NOTE: All estimates are based on parental reports. Sample sizes may differ by column because cases with missing data were excluded. Household SES is a composite variable based on parental education, parental occupation, and household income in spring 1999. Low SES signifies the bottom 20 percent of the variable's distribution, middle SES the middle 60 percent, and high SES the top 20 percent. SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 1998-99 (ECLS-K), spring and fall 1999.

Table A2. Standard errors for Table 2: Children's library usage during the summer after kindergarten, according to neighborhood library availability, by socioeconomic status (SES): 1999

Household SES	All children				Children with library in neighborhood			Children with no library in neighborhood		
	Percent with library in neighborhood	Library visitors		Percent attended story time at library	Percent visited library	Library visitors		Percent visited library	Library visitors	
		Percent visited library	Mean number of visits to library			Mean number of visits to library	Percent attended story time at library		Mean number of visits to library	Percent attended story time at library
Total	1.54	1.43	0.13	1.25	1.32	0.15	1.31	2.14	0.29	2.29
Low SES	2.06	2.31	0.26	2.41	2.50	0.35	2.90	3.63	0.31	4.45
Middle SES	1.68	1.53	0.20	1.41	1.43	0.22	1.44	2.63	0.43	3.03
High SES	1.35	1.58	0.24	1.78	1.52	0.24	1.81	5.13	0.57	3.72

NOTE: All estimates are based on parental reports. Sample sizes may differ by column because cases with missing data were excluded. Household SES is a composite variable based on parental education, parental occupation, and household income in spring 1999. Low SES signifies the bottom 20 percent of the variable's distribution, middle SES the middle 60 percent, and high SES the top 20 percent.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 1998-99 (ECLS-K), spring and fall 1999.