Reading Data Available from the Early Childhood Longitudinal Studies (ECLS)

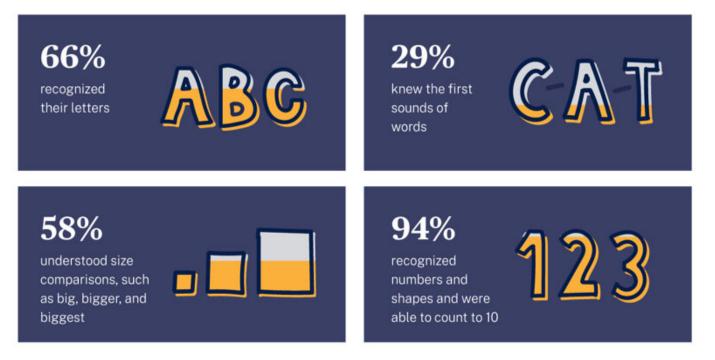
Jill Carlivati McCarroll Study Director, ECLS



The Early Childhood Longitudinal Studies

What kinds of things do kindergartners know?

The previous ECLS studies worked with kindergartners to learn about their knowledge and skills.



SOURCE: West, J., Denton, K., and Germino-Hausken, E. (2000). America's Kindergartners (NCES 2000-070). Retrieved July 31, 2020, from https://nces.ed.gov/pubs2000/2000070.pdf.

Goals of the Early Childhood Longitudinal Studies

- Collect data that can be used to study:
 - The ways children are prepared for school at home, and in their early care and education settings
 - Cognitive, social, emotional, and physical development
 - The association of background characteristics and early educational experiences with child outcomes over time



Early Childhood Longitudinal Study, Birth Cohort (ECLS-B)

- Nationally representative study of children born in the United States in 2001
- More than 10,000 children and their parents participated in the first data collection
- Data are available for multiple points in the child's life:
 - Birth (information from the birth certificate)
 - At about 9 months of age
 - At about 2 years of age
 - Preschool age (about age 4)
 - Kindergarten



Early Childhood Longitudinal Study, Birth Cohort (ECLS-B)

- Data were collected from:
 - Sampled children
 - Their families (both mothers and fathers)
 - Their nonparental care providers
 - Their kindergarten teachers



Early Childhood Longitudinal Study, Birth Cohort (ECLS-B)

- Available reading-related data include:
 - Direct child cognitive assessments: Language and communication development (9 months and 2 years); Reading knowledge and skills (preschool and kindergarten)
 - Parent reports of child and family demographics, home activities (e.g., how often family read books to the child, told stories to the child, talked about books read to the child)
 - Care/education provider reports on characteristics of the child's development, the learning environment, and teaching practices
 - Kindergarten teacher reports on the child's development, school programs, and educational goals and objectives



Findings from the ECLS-B: Early cognitive skills

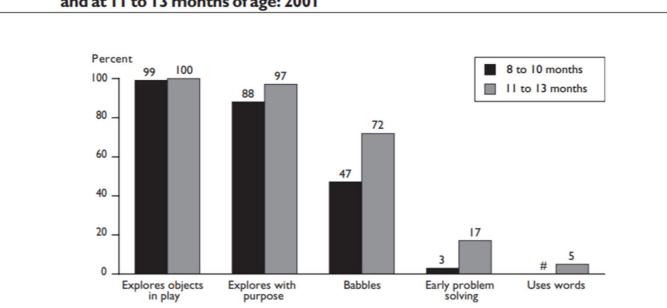


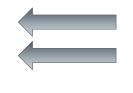
Figure 4. Percentage of children demonstrating certain mental skills at 8 to 10 months of age and at 11 to 13 months of age: 2001

Less than .5 percent.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Birth Cohort, Restricted-Use File (NCES 2004–093).

Source: Flanagan, K., and West, J. (2004). *Children Born in 2001: First Results From the Base Year of the Early Childhood Longitudinal Study, Birth Cohort (ECLS–B)* (NCES 2005–036). U.S. Department of Education, Washington, DC: National Center for Education Statistics.

- Nationally representative study of children in kindergarten in the United States in the 1998-99 school year
- More than 21,000 children attending more than 1,200 public and private schools participated in the first year
- Data were collected at multiple points in time:
 - Fall 1998 and Spring 1999: Kindergarten
 - Fall 1999 and Spring 2000: First Grade
 - Spring 2002: Third Grade
 - Spring 2004: Fifth grade
 - Spring 2007: Eighth grade



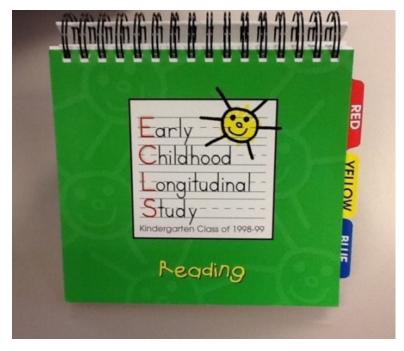
Data allow for the analysis of summer learning



- Data were collected from:
 - Sampled children
 - Their families
 - Their teachers
 - Their school administrators

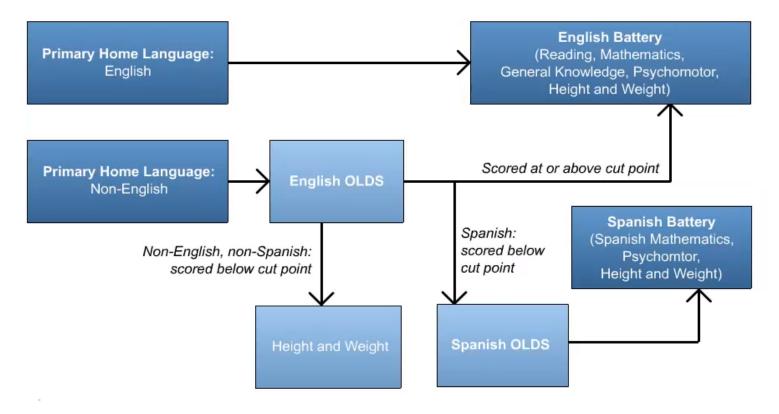


- Available reading-related data include:
 - Direct child cognitive assessments in reading at all study rounds





• Reading-related data include direct cognitive assessments in reading at all study rounds



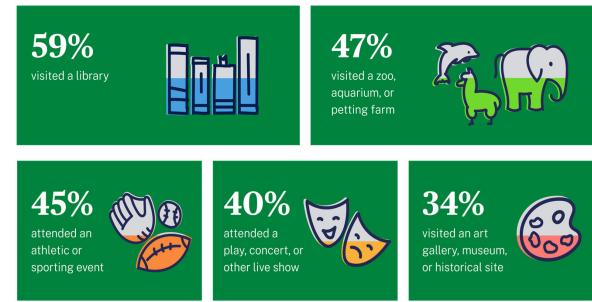
- Available reading-related data include:
 - Direct child cognitive assessments in reading at all study rounds
 - Parent reports of child characteristics (e.g., disabilities), home activities (e.g., how often family read books to the child, told stories to the child, talked about books read to the child) and home environment (e.g., number of books in the home)
 - Teacher reports at both the child (e.g., child's perceived interest and competence in reading, child's approaches to learning) and classroom (e.g., reading instructional practices) levels
 - Special education teacher reports were also collected when applicable

Early Childhood Longitudinal Study, Kindergarten Class of 2010-11 (ECLS-K:2011) What kinds of activities do parents do with their kindergarten

Nationally representative study of children in kindergarten in the United States in the 2010-11 school year

children at least once a month?

Parents reported on activities family members did with their kindergartners in the last ECLS.



SOURCE: U.S. Department of Education, National Center for Education Statistics. (2020). Early Childhood Longitudinal Study, Kindergarten Class of 2010-11 (ECLS-K:2011) Data retrieved July 31, 2020, from Table B2a, https://nces.ed.gov/ecls/tables.asp.



- More than 18,000 children attending more than 900 public and private schools participated in the first year
- Data were collected at multiple points in time:
 - Fall 2010 and Spring 2011: Kindergarten
 - Fall 2011 and Spring 2012: First Grade
 - Fall 2012 and Spring 2013: Second Grade
 - Spring 2014: Third Grade
 - Spring 2015: Fourth Grade
 - Spring 2016: Fifth Grade



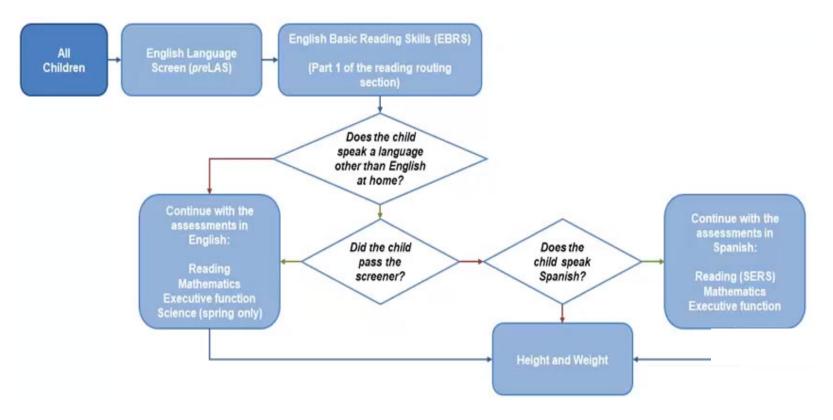
Data allow for the analysis of summer learning



- Data were collected from:
 - Sampled children
 - Their families
 - Their teachers
 - Their school administrators
 - Their before- and after-school care providers (in kindergarten only)



• Reading-related data include direct cognitive assessments in reading at all study rounds

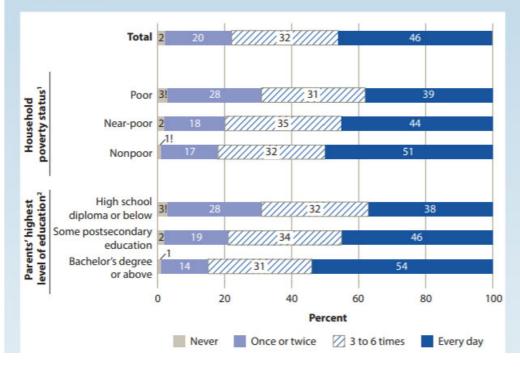


- Available reading-related data include:
 - Direct child cognitive assessments in reading at all study rounds
 - Parent reports of child characteristics (e.g., disabilities), home activities (e.g., how often family read books to the child, told stories to the child, talked about books read to the child) and home environment (e.g., number of books in the home)
 - Teacher reports at both the child (e.g., child's perceived interest and competence in reading, child's approaches to learning) and classroom (e.g., reading instructional practices) levels
 - Special education teacher reports were also collected when applicable

Research Resources: Statistics in Brief

FIGURE 7.

Percentage distribution of students in the kindergarten class of 2010–11, by household poverty status, parents' highest level of education, and frequency with which family members read books to child during a typical week in the summer: Summer 2011



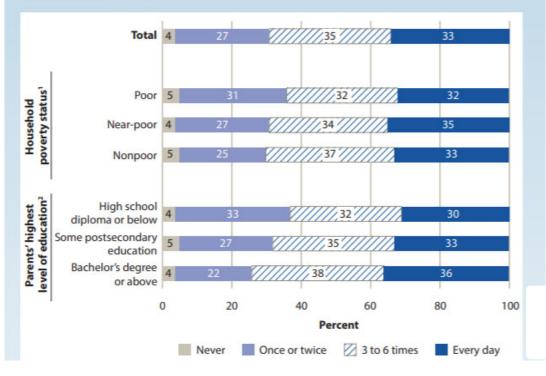
 Redford, J., Burns, S., and Hall, L.J. (2018). *The Summer after Kindergarten: Children's Experiences by Socioeconomic Characteristics. Stats in Brief.* (NCES 2018-160). U.S. Department of Education. Washington, DC: National Center for Education Statistics. Retrieved May 21, 2021 from https://nces.ed.gov/pubs2018/2018160. pdf.

Interpret data with caution. The coefficient of variation for this estimate is between 30 and 50 percent.
¹ Household poverty status is based on preliminary U.S. Census thresholds for 2010, which identify incomes determined to meet household needs, given the household size. Poor households are those with incomes below 100 percent of the federal poverty level (\$22,113 in 2010 for a family of four with two children); near-poor households are those with incomes between 100 and 199 percent of the federal poverty level (greater than or equal to \$22,113 in 2010 for a family of four with two children, but less than \$44,226); and nonpoor households are those with incomes at or above 200 percent of the federal poverty level (greater than or equal to \$42,216); and nonpoor households are those with incomes at or above 200 percent of the federal poverty level (greater than or equal to \$44,226 in 2010 for a family of four with two children).
² Parents' highest level of education is the highest level of education achieved by either of the parents or guardians in a two-parent household or by the only parent or guardian in a single-parent household. "Some postsecondary education. NOTE: In the parent guestionnaire, the term "family" refers to any person who lives in the child's household and any relative of the child's household. But on summer vacation characteristics in summer 2011 were collected in fall 2011. Estimates weighted by W3CF3P_30. Detail may not sum to total due to rounding and/or missing data.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), Kindergarten-Second Grade Restricted-Use Data File.

Research Resources: Statistics in Brief

FIGURE 8.

Percentage distribution of students in the kindergarten class of 2010–11, by household poverty status, parents' highest level of education, and frequency with which child looked at or read books on his/her own during a typical week in the summer: Summer 2011



Redford, J., Burns, S., and Hall, L.J.
(2018). *The Summer after Kindergarten: Children's Experiences by Socioeconomic Characteristics. Stats in Brief.* (NCES 2018-160). U.S.
Department of Education. Washington, DC: National Center for Education
Statistics. Retrieved May 21, 2021 from https://nces.ed.gov/pubs2018/2018160.
pdf.

¹ Household poverty status is based on preliminary U.S. Census thresholds for 2010, which identify incomes determined to meet household needs, given the household size. Poor households are those with incomes below 100 percent of the federal poverty level (\$22,113 in 2010 for a family of four with two children); near-poor households are those with incomes between 100 and 199 percent of the federal poverty level (greater than or equal to \$22,113 in 2010 for a family of four with two children); near-poor households are those with incomes at or above 200 percent of the federal poverty level (greater than or equal to \$44,226); and nonpoor households are those with incomes at or above 200 percent of the federal poverty level (greater than or equal to \$44,226 in 2010 for a family of four with two children).
² Parents' highest level of education is the highest level of education achieved by either of the parents or guardians in a two-parent household or by the only parent or guardian in a single-parent household. "Some postsecondary education" includes parents whose highest level of education is some college, an associate's degree, or career/technical education. NOTE: Data on summer vacation characteristics in summer 2011 were collected in fall 2011. Estimates weighted by W3CF3P_30. Detail may not sum to total due to rounding and/or missing data.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), Kindergarten-Second Grade Restricted-Use Data File.

More Information on NCES Early Childhood Data



Research Resources: NCES Publications & Products

• NCES publications and products website: nces.ed.gov/pubsearch/

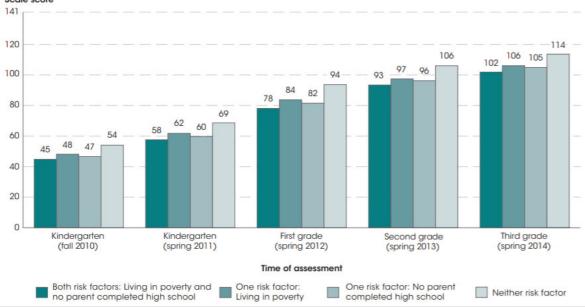
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 Description Subject 	\bigcirc Before \bigcirc During \bigcirc After	Survey/Program Area		_
○ Author		Early Childhood Longitudinal Study		$\overline{}$
⊖ Pub#		Visit the IES Publications & Products Search to query all IES	publications and products.	



Research Resources: The Condition of Education

McFarland, J., Hussar, B., de Brey, C., Snyder, T., Wang, X., Wilkinson-Flicker, S., Gebrekristos, S., Zhang, J., Rathbun, A., Barmer, A., Bullock Mann, F., and Hinz, S. (2017). The Condition of Education 2017 (NCES 2017-144). U.S. Department of Education. Washington, DC: National Center for Education Statistics. Retrieved May 21, 2021 from https://nces.ed.gov/pubsearch/ pubsinfo.asp?pubid=2017144.





NOTE: Estimates weighted by W7C17P_7T170. Scores on the reading assessments reflect performance on questions measuring basic skills (print familiarity, letter recognition, beginning and ending sounds, rhyming words, and word recognition); vocabulary knowledge; and reading comprehension, including identifying information specifically stated in text (e.g., definitions, facts, and supporting details), making complex inferences from texts, and considering the text objectively and judging its appropriateness and quality. Possible scores for the reading assessment range from 0 to 141. Estimates pertain to a sample of children who were enrolled in kindergarten for the first time in the 2010-11 school year. Most of the children were in first grade in 2011-12, second grade in 2012-13, and third grade in 2013-14, but some of the children were in other grades. In 2013-14, for example, 6 percent of the children were not in third grade (e.g., were in second grade, fourth grade, or ungraded classrooms). Information on risk factors and student and family characteristics are based on data collected during the kindergarten year. Parents' highest level of education is the highest level of education achieved by either of the parents or guardians in a two-parent household, by the only parent in a single-parent household, or by any guardian in a household with no parents. Poverty status is based on preliminary U.S. Census income thresholds for 2010, which identify incomes determined to meet household needs, given family size and composition. For example, a family of three with one child was below the poverty threshold if its income was less than \$17,552 in 2010.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010-11 (ECLS-K:2011), Kindergarten-Third Grade Restricted-Use Data File. See Digest of Education Statistics 2016, table 220.40.



Research Resources: Digest of Education Statistics

Table 220.60. Fall 2010 kindergartners' reading, mathematics, science, and approaches to learning scale scores and standard deviations, by kindergarten entry status and time of assessment: Fall 2010 and spring 2011 through spring 2016

		[9]	Standard error	s appear in	parenthe	ses]						
			Mean score by									
					fall 2010 kindergarten entry status ²							
			Standar		Early	Early On-time			Delayed			
Type and time	Overa	all mean	of the overall		kindergarten		kindergarten		kindergarten		Kindergarten	
of assessment		score1	r	mean score		entrants	entrants		entrants		repeaters	
1		2		3	4		5		6		7	
Reading scale score ³												
Kindergarten												
Fall 2010	54.6	(0.24)	11.3	(0.18)	52.1	(1.09)	54.6	(0.25)	55.9	(0.65)	56.4	(0.86)
Spring 2011	69.3	(0.33)	14.4	(0.18)	64.5	(2.13)	69.6	(0.36)	70.5	(0.77)	68.0	(0.90)
First grade, spring 2012	94.9	(0.37)	17.8	(0.14)	87.7	(2.85)	95.7	(0.43)	97.6	(0.90)	89.1	(1.36)
Second grade, spring 2013	112.3	(0.34)	17.0	(0.16)	108.1	(2.22)	113.1	(0.40)	114.8	(0.91)	105.3	(1.52)
Third grade, spring 2014	120.9	(0.31)	15.3	(0.14)	116.4	(1.93)	121.7	(0.35)	123.1	(0.80)	114.4	(1.42)
Fourth grade, spring 2015	129.3	(0.27)	14.6	(0.15)	124.9	(2.02)	130.1	(0.30)	130.8	(0.84)	123.0	(1.42)
Fifth grade, spring 2016	136.3	(0.29)	15.3	(0.14)	132.9	(2.16)	137.1	(0.32)	137.7	(1.01)	129.1	(1.27)

 De Brey, C., Snyder, T.D., Zhang, A., and Dillow, S.A. (2021). *Digest of Education Statistics* 2019 (NCES 2021-009). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.



Research Resources: Digest of Education Statistics

Table 220.40. Fall 2010 first-time kindergartners' reading scale scores and standard deviations through spring of fifth grade, by selected child, family, and school characteristics during the kindergarten year: Fall 2010 and spring 2011 through spring 2016

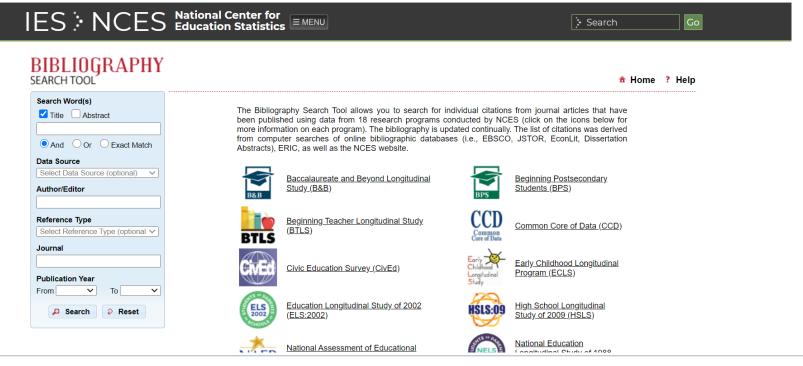
[Standard errors appear in parentheses]															
Selected child, family, or school characteristic		Kindergarten				First grade,		Second grade,		Third grade,		Fourth grade,		Fifth grade,	
during the kindergarten year	Fall 2010 Spring 2011		spring 2012		spring 2013		spring 2014		spring 2015		spring 2016				
1	2		3		4		5		6		7			8	
	Mean reading score ¹														
Total	54.5	(0.24)	69.3	(0.34)	95.3	(0.40)	112.8	(0.37)	121.4	(0.32)	129.7	(0.28)	136.8	(0.30)	
Sex of child															
Male	54.0	(0.30)	68.6	(0.41)	93.7	(0.45)	111.1	(0.44)	119.8	(0.40)	128.8	(0.34)	136.1	(0.36)	
Female	55.0	(0.26)	70.1	(0.39)	97.0	(0.48)	114.5	(0.42)	123.0	(0.37)	130.7	(0.32)	137.5	(0.36)	
Age of child at kindergarten entry, fall 2010															
Less than 5 years old	50.7	(0.62)	63.8	(0.96)	87.9	(1.40)	107.1	(1.22)	117.3	(1.02)	126.2	(0.98)	134.0	(1.07)	
5 years old to 5 1/2 years old	53.0	(0.32)	67.7	(0.41)	93.5	(0.48)	111.3	(0.40)	119.8	(0.38)	128.7	(0.35)	135.6	(0.37)	
More than 5 1/2 years old to 6 years old	55.5	(0.30)	70.6	(0.37)	96.9	(0.52)	114.1	(0.49)	122.6	(0.41)	130.6	(0.36)	137.8	(0.38)	
More than 6 years old	57.9	(0.45)	73.1	(0.63)	99.6	(0.74)	115.9	(0.74)	124.0	(0.61)	131.9	(0.68)	138.4	(0.74)	
Race/ethnicity of child															
White	56.1	(0.33)	71.4	(0.45)	98.6	(0.50)	116.1	(0.43)	124.8	(0.38)	132.8	(0.32)	140.0	(0.35)	
Black	53.0	(0.44)	66.5	(0.58)	91.0	(0.90)	107.7	(0.80)	115.3	(0.62)	123.8	(0.68)	130.5	(0.57)	
Hispanic	50.8	(0.32)	65.3	(0.33)	89.2	(0.52)	107.1	(0.61)	116.0	(0.56)	125.0	(0.56)	132.0	(0.53)	
Asian	59.2	(0.66)	74.4	(0.82)	100.4	(1.00)	117.1	(0.88)	125.2	(0.70)	134.3	(0.81)	141.3	(0.76)	
Pacific Islander	52.7	(2.00)	69.9	(2.96)	97.7	(2.87)	115.4	(2.82)	123.2	(2.61)	131.3	(1.87)	138.8	(2.09)	
American Indian/Alaska Native	50.3	(0.61)	64.2	(1.08)	91.3	(1.39)	107.5	(1.33)	117.6	(1.21)	126.7	(1.33)	134.0	(1.59)	
Two or more races	56.2	(0.74)	70.8	(1.01)	97.0	(1.12)	114.6	(1.08)	123.6	(0.82)	132.0	(0.84)	139.2	(0.82)	

• De Brey, C., Snyder, T.D., Zhang, A., and Dillow, S.A. (2021). *Digest of Education Statistics* 2019 (NCES 2021-009). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.



Research Resources: ECLS Bibliography

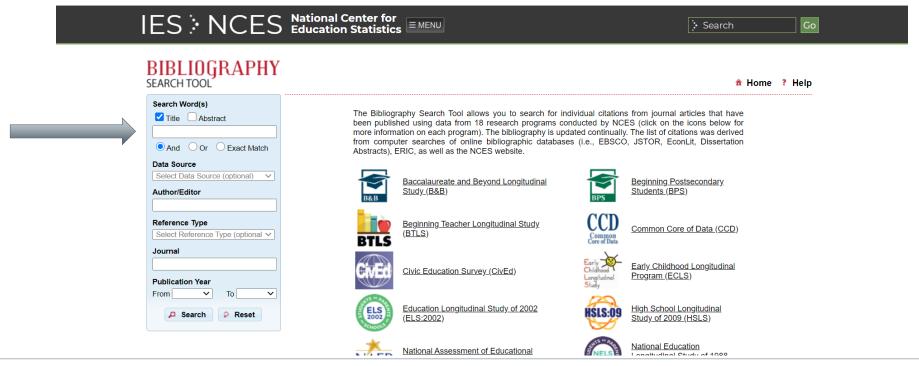
• NCES maintains an online bibliography search tool: https://nces.ed.gov/bibliography/





Research Resources: ECLS Bibliography

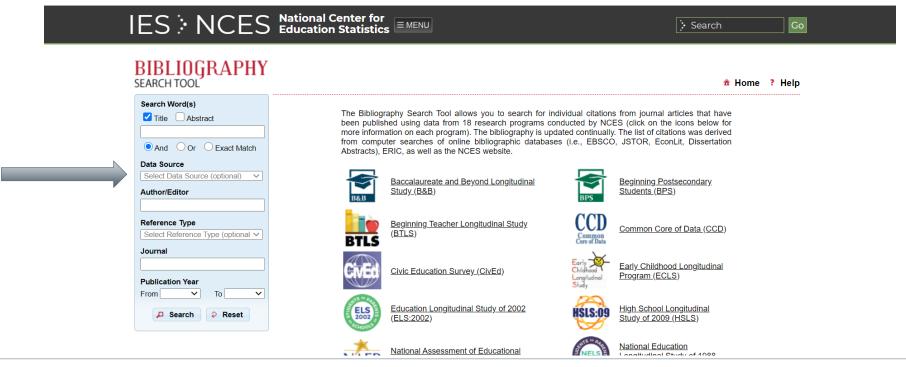
• NCES maintains an online bibliography search tool: https://nces.ed.gov/bibliography/





Research Resources: ECLS Bibliography

• NCES maintains an online bibliography search tool: https://nces.ed.gov/bibliography/





Research Resources: Example Citations on ECLS Reading

- Cameron, C.E., Grimm, K.J., Steele, J.S., Castro-Schilo, L., and Grissmer, D.W. (2015). Nonlinear Gompertz Curve Models of Achievement Gaps in Mathematics and Reading. *Journal of Educational Psychology*, *107*(3): 789-804.
- Chatterji, M. (2006). Reading Achievement Gaps, Correlates, and Moderators of Early Reading Achievement: Evidence From the Early Childhood Longitudinal Study (ECLS) Kindergarten to First Grade Sample. *Journal of Educational Psychology*, 98(3): 489-507.
- Curran, F.C., and Kitchin, J. (2019). Why Are the Early Elementary Race/Ethnicity Test Score Gaps in Science Larger Than Those in Reading or Mathematics? National Evidence on the Importance of Language and Immigration Context in Explaining the Gap-in-Gaps. *Science Education*, *103*: 477-502.



Research Resources: Example Citations on ECLS Reading

- Guarino, C.M, Hamilton, L.S., Lockwood, J.R., and Rathbun, A.H. (2006). *Teacher Qualifications, Instructional Practices, and Reading and Mathematics Gains of Kindergartners* (NCES 2006-031). U.S. Department of Education. Washington, DC: National Center for Education Statistics.
- Kang, H.S. (2013). Content-Focused Teacher Meetings as Effective Teacher Learning Opportunities: Do They Really Help Improve Overall Reading Achievement and Reduce the Achievement Gap in First Grade Classrooms? [Doctoral dissertation, The University of Wisconsin Madison]. ERIC. https://eric.ed.gov/?id=ED554177
- Mulligan, G.M., McCarroll, J.C., Flanagan, K.D., and McPhee, C. (2019). *Findings from the Fifth-Grade Round of the Early Childhood Longitudinal Study, Kindergarten Class of 2010-11* (*ECLS-K:2011*) (NCES 2019-130). U.S. Department of Education. Washington, DC: National Center for Education Statistics.



Research Resources: Example Citations on ECLS Reading

- Palardy, G.J. (2015). Classroom-Based Inequalities and Achievement Gaps in First Grade: The Role of Classroom Context and Access to Qualified and Effective Teachers. *Teachers College Record*, *117*(2): 1-48.
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- Robinson, J.P., and Lubienski, S.T. (2011.) The Development of Gender Achievement Gaps in Mathematics and Reading During Elementary and Middle School: Examining Direct Cognitive Assessments and Teacher Ratings. *American Educational Research Journal*, *48*(2): 268-302.



Research Resources: Example Citations on ECLS Summer Learning

- Burkam, D.T., Ready, D.D., Lee, V.E., and LoGerfo, L.F. (2004). Social-Class Differences in Summer Learning Between Kindergarten and First Grade: Model Specification and Estimation. *Sociology of Education*, 77(1): 1-31.
- Coley, R.L., Kruzik, C., and Votruba-Drzal, E. (2020). Do Family Investments Explain Growing Socioeconomic Disparities in Children's Reading, Math, and Science Achievement During School Versus Summer Months? *Journal of Educational Psychology*, *112*(6): 1183-1196.
- Quinn, D.M. (2015). Black-White Summer Learning Gaps: Interpreting the Variability of Estimates Across Representations. *Educational Evaluation and Policy Analysis*, *37*(1): 50-69.



Research Resources: Example Citations on ECLS Summer Learning

- Quinn, D.M., Cooc, N., McIntyre, J., and Gomez, C.J. (2016). Seasonal Dynamics of Academic Achievement Inequality by Socioeconomic Status and Race/Ethnicity: Updating and Extending Past Research With New National Data. *Educational Researcher*, *45*(8): 443-453.
- U.S. Department of Education, National Center for Education Statistics. (2004). *The Summer After Kindergarten: Children's Activities and Library Use by Household Socioeconomic Status* (NCES 2004-037). Washington, DC: Author.
- Von Hippel, P.T., and Hamrock, C. (2019). Do Test Score Gaps Grow Before, During, or Between the School Years? Measurement Artifacts and What We Can Know in Spite of Them. *Sociological Science*, *6*(3): 43-80.



Research Resources: ECLS Questionnaires

- ECLS questionnaires
 - ECLS-B: https://nces.ed.gov/ecls/birthinstruments.asp
 - ECLS-K: https://nces.ed.gov/ecls/kinderinstruments.asp
 - ECLS-K:2011: https://nces.ed.gov/ecls/instruments2011.asp
 - ECLS User's Manuals and Psychometric Reports (under "Technical/Methodological"): https://nces.ed.gov/pubsearch/getpubcats.asp?sid=024



Research Resources: ECLS Datafiles

- NCES data are available in two formats
 - Restricted-use files (RUFs): Visit <u>https://nces.ed.gov/statprog/instruct.asp</u> for information
 - Public-use files (PUFs): Visit study websites for information



Research Resources: ECLS Datafiles Training

- Training on NCES data is available through NCES's Distance Learning Data Training (DLDT)
 - Online, interactive tool for learning about NCES data: https://nces.ed.gov/training/datauser/
 - Modules introduce users to NCES studies and datasets, including considerations to facilitate successful analyses
 - Appropriate for use by researchers, students, policy specialists, education professionals, and others



For More Information

Contact NCES Staff

Jill McCarroll, Study Director, Early Childhood Longitudinal Studies

- ►Jill.McCarroll@ed.gov
- ▶202-304-2920
- General ECLS mailbox
 - ► <u>ECLS@ed.gov</u>

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