

Initial Tables From the 2015 Computer Access and Familiarity Study

George W. Bohrnstedt
American Institutes for Research

Sami T. Kitmitto
American Institutes for Research

B. Jasmine Park
American Institutes for Research

September 2017
Commissioned by the NAEP Validity Studies (NVS) Panel

The NAEP Validity Studies Panel was formed by the American Institutes for Research under contract with the National Center for Education Statistics. Points of view or opinions expressed in this paper do not necessarily represent the official positions of the U.S. Department of Education or the American Institutes for Research.

The NAEP Validity Studies (NVS) Panel was formed in 1995 to provide a technical review of NAEP plans and products and to identify technical concerns and promising techniques worthy of further study and research. The members of the panel have been charged with writing focused studies and issue papers on the most salient of the identified issues.

Panel Members:

Peter Behuniak
University of Connecticut

Ina V.S. Mullis
Boston College

George W. Bohrnstedt
American Institutes for Research

Scott Norton
Council of Chief State School Officers

James R. Chromy
Research Triangle Institute

James Pellegrino
University of Illinois at Chicago

Phil Daro
University of California, Berkeley

Gary Phillips
American Institutes for Research

Richard P. Durán
University of California, Santa Barbara

Lorrie Shepard
University of Colorado at Boulder

David Grissmer
University of Virginia

David Thissen
University of North Carolina, Chapel Hill

Larry Hedges
Northwestern University

Gerald Tindal
University of Oregon

Gerunda Hughes
Howard University

Sheila Valencia
University of Washington-Seattle

Project Director:

Frances B. Stancavage
American Institutes for Research

Project Officer:

Grady Wilburn
National Center for Education Statistics

For Information:

NAEP Validity Studies (NVS)
American Institutes for Research
2800 Campus Drive, Suite 200
San Mateo, CA 94403
Phone: 650/376-6363

Table 1. Percentage of 4th-, 8th-, and 12th-grade public school students with their own or a shared digital device at home, by selected student and school characteristics: 2015

Selected student or school characteristic	4th graders		8th graders		12th graders	
	Estimate	SE	Estimate	SE	Estimate	SE
Total	95.0	0.33	98.3	0.18	98.0	0.20
Sex						
Male	94.2	0.51	98.0	0.27	97.8	0.30
Female	95.9	0.43	98.7	0.23	98.3	0.27
Race/ethnicity						
White	96.5	0.43	98.8	0.22	98.6	0.25
Black	93.1	0.84	98.0	0.46	96.7	0.56
Hispanic	93.6	0.72	97.9	0.37	98.1	0.41
Asian	99.0	0.72	99.3	0.52	98.4	0.79
Pacific Islander	‡	†	‡	†	95.5	1.96
American Indian/Alaska Native	‡	†	‡	†	‡	†
Two or more races	93.0	2.38	95.4	1.83	99.1	0.87
English language learner (ELL) status						
ELL	90.8	1.34	97.0	0.90	96.3	1.48
Non-ELL	95.6	0.34	98.4	0.18	98.1	0.20
Disability status\1\						
Identified as student with disability (SD)	91.8	1.28	95.9	0.85	97.4	0.81
Not identified as SD	95.4	0.34	98.6	0.17	98.1	0.21
Eligibility for free or reduced-price lunch						
Eligible	93.0	0.51	97.7	0.27	97.4	0.35
Not eligible	97.8	0.36	99.1	0.20	98.5	0.23
Information not available	‡	†	98.1	1.32	‡	†
School locale						
City	93.9	0.66	97.8	0.39	97.9	0.33
Suburb	95.8	0.48	98.4	0.26	98.2	0.32
Town	94.3	1.11	98.1	0.60	97.6	0.96
Rural	95.6	0.75	98.9	0.32	98.1	0.47

†Not applicable.

‡Reporting standards not met (too few cases for a reliable estimate).

\1\The SD variable used in this table includes students who have a 504 plan, even if they do not have an individualized education program.

NOTE: SE=standard error. Digital devices include desktop computers, laptop computers, tablets, and smartphones. Race categories exclude persons of Hispanic ethnicity.

Table 2a. Percentage distribution of 4th-grade public school students, by when student first used a laptop or desktop computer and selected student and school characteristics: 2015

Selected student or school characteristic	4th graders, by first use of computer									
	In kindergarten or before		In 1st, 2nd, or 3rd grade		In 4th grade		Never used		In kindergarten or before	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Total	41.1	0.77	44.0	0.77	10.6	0.48	4.3	0.31	34.8	0.66
Sex										
Male	39.4	1.07	44.8	1.09	10.7	0.68	5.0	0.48	32.6	0.90
Female	42.8	1.09	43.1	1.09	10.5	0.68	3.5	0.41	37.2	0.97
Race/ethnicity										
White	46.0	1.17	43.7	1.16	7.8	0.63	2.5	0.37	40.0	1.01
Black	40.4	1.67	39.1	1.66	14.1	1.18	6.5	0.83	34.8	1.57
Hispanic	33.2	1.41	46.7	1.49	13.8	1.03	6.3	0.73	27.3	1.15
Asian	41.3	3.53	50.5	3.58	6.6	1.78	‡	†	31.1	2.82
Pacific Islander	‡	†	‡	†	‡	†	‡	†	‡	†
American Indian/Alaska Native	‡	†	‡	†	‡	†	‡	†	‡	†
Two or more races	43.4	4.68	49.6	4.72	5.3	! 2.12	‡	†	35.9	4.26
English language learner (ELL) status										
ELL	31.0	2.17	41.3	2.31	17.4	1.78	10.3	1.43	18.0	2.04
Non-ELL	42.4	0.81	44.3	0.82	9.8	0.49	3.5	0.30	36.1	0.69
Disability status\1										
Identified as student with disability (SD)	35.6	2.27	38.5	2.30	18.3	1.83	7.6	1.26	29.1	1.97
Not identified as SD	41.8	0.81	44.7	0.82	9.7	0.49	3.9	0.32	35.5	0.70
Eligibility for free or reduced-price lunch										
Eligible	36.5	0.98	44.6	1.01	13.1	0.69	5.7	0.47	30.5	0.85
Not eligible	47.7	1.21	43.2	1.20	7.0	0.62	2.2	0.36	40.8	1.05
Information not available	‡	†	‡	†	‡	†	‡	†	31.4	4.55
School locale										
City	36.9	1.34	44.7	1.38	13.2	0.94	5.3	0.62	32.1	1.25
Suburb	45.6	1.22	41.9	1.21	8.8	0.69	3.7	0.46	36.8	1.02
Town	35.3	2.31	48.8	2.41	12.1	1.57	3.7	0.91	35.3	2.10
Rural	41.8	1.81	44.7	1.83	9.3	1.07	4.2	0.74	33.9	1.47

†Not applicable.

!Interpret data with caution. The coefficient of variation (CV) for this estimate is between 30 and 50 percent.

‡Reporting standards not met. Either there are too few cases for a reliable estimate or the CV is 50 percent or greater.

\1\The SD variable used in this table includes students who have a 504 plan, even if they do not have an individualized education program.

NOTE: SE=standard error. Race categories exclude persons of Hispanic ethnicity. Detail may not sum to totals because of rounding.

Table 2b. Percentage distribution of 8th-grade public school students, by when student first used a laptop or desktop computer and selected student and school characteristics: 2015

Selected student or school characteristic	8th graders, by first use of computer										
	In 1st, 2nd, or 3rd grade		In 4th or 5th grade		In 6th, 7th, or 8th grade		Never used		In kindergarten or before		
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	
Total	41.7	0.68	15.8	0.51	7.0	0.35	0.7	0.11		28.9	0.66
Sex											
Male	42.6	0.95	16.7	0.72	7.2	0.50	1.0	0.19		29.3	0.94
Female	40.7	0.98	15.0	0.71	6.8	0.50	0.3	!	0.11	28.6	0.94
Race/ethnicity											
White	40.7	1.01	13.1	0.70	5.7	0.48	0.5	!	0.14	33.6	1.02
Black	41.0	1.62	14.2	1.15	8.8	0.93	1.3		0.37	28.6	1.44
Hispanic	43.2	1.28	20.7	1.05	8.3	0.71	0.5	!	0.19	20.4	1.22
Asian	45.6	3.04	18.1	2.35	5.2	1.35	#		†	26.9	2.82
Pacific Islander	‡	†	‡	†	‡	†	‡		†	21.6	3.93
American Indian/Alaska Native	‡	†	‡	†	‡	†	‡		†	‡	†
Two or more races	41.4	4.37	14.8	3.15	6.3	!	2.15		‡	37.2	4.57
English language learner (ELL) status											
ELL	41.0	2.61	27.8	2.38	11.8	1.71	1.4	!	0.62	12.3	2.58
Non-ELL	41.7	0.71	15.0	0.51	6.6	0.36	0.6		0.11	29.5	0.68
Disability status\1\											
Identified as student with disability (SD)	36.2	2.09	19.2	1.71	13.0	1.46	2.5		0.67	26.1	2.25
Not identified as SD	42.3	0.72	15.5	0.53	6.3	0.36	0.4		0.10	29.2	0.69
Eligibility for free or reduced-price lunch											
Eligible	42.2	0.91	17.7	0.71	8.5	0.52	1.0		0.18	22.2	0.92
Not eligible	40.5	1.05	13.4	0.73	5.1	0.47	0.2	!	0.10	34.2	0.93
Information not available	50.5	4.90	14.3	3.43	3.8	!	1.88		#	‡	†
School locale											
City	42.9	1.33	17.1	1.01	7.2	0.69	0.7	!	0.23	28.4	1.06
Suburb	41.1	1.04	14.3	0.74	7.0	0.54	0.8		0.19	28.1	1.07
Town	39.3	2.15	19.1	1.73	6.2	1.06	‡		†	32.1	2.95
Rural	42.6	1.54	16.1	1.14	7.0	0.79	0.5	!	0.22	31.0	1.58

†Not applicable.

#Rounds to zero.

!Interpret data with caution. The coefficient of variation (CV) for this estimate is between 30 and 50 percent.

‡Reporting standards not met. Either there are too few cases for a reliable estimate or the CV is 50 percent or greater.

\1\The SD variable used in this table includes students who have a 504 plan, even if they do not have an individualized education program.

NOTE: SE=standard error. Race categories exclude persons of Hispanic ethnicity. Detail may not sum to totals because of rounding.

Table 2c. Percentage distribution of 12th-grade public school students, by when student first used a laptop or desktop computer and selected student and school characteristics: 2015

Selected student or school characteristic	12th graders, by first use of computer										
	In 1st, 2nd, or 3rd grade		In 4th or 5th grade		In 6th, 7th, or 8th grade		In high school		Never used		
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	
Total	35.1	0.70	17.0	0.55	15.0	0.52	3.5	0.27	0.5	0.10	
Sex											
Male	35.2	0.98	17.0	0.77	14.1	0.72	3.8	0.39	0.7	0.17	
Female	35.0	0.99	16.9	0.78	16.0	0.76	3.2	0.37	0.3	!	0.11
Race/ethnicity											
White	34.3	1.03	16.2	0.80	12.7	0.72	2.8	0.36	0.4	!	0.14
Black	35.9	1.53	15.7	1.16	15.7	1.16	3.4	0.58	0.7	!	0.27
Hispanic	36.0	1.46	20.5	1.22	18.0	1.17	4.4	0.62	0.6	!	0.24
Asian	35.7	3.04	12.4	2.10	19.3	2.50	5.2	1.41	‡	†	
Pacific Islander	34.2	4.52	18.9	3.73	18.0	3.66	7.2	!	2.47	#	†
American Indian/Alaska Native	‡	†	‡	†	‡	†	‡	†	‡	†	†
Two or more races	33.6	4.46	16.8	3.53	11.5	3.01	‡	†	#	†	
English language learner (ELL) status											
ELL	23.9	3.35	21.5	3.23	29.4	3.58	9.8	2.34	3.1	!	1.35
Non-ELL	35.5	0.71	16.8	0.56	14.5	0.52	3.3	0.26	0.4		0.10
Disability status\1											
Identified as student with disability (SD)	27.6	2.30	20.3	2.06	18.7	2.00	6.8	1.30	‡	†	
Not identified as SD	35.7	0.73	16.7	0.57	14.7	0.54	3.2	0.27	0.5		0.11
Eligibility for free or reduced-price lunch											
Eligible	36.3	1.06	18.4	0.86	18.1	0.85	4.1	0.44	0.8		0.20
Not eligible	34.1	0.93	15.8	0.72	12.7	0.65	3.0	0.33	0.3	!	0.10
Information not available	‡	†	‡	†	‡	†	‡	†	‡		†
School locale											
City	34.6	1.12	17.2	0.89	15.5	0.85	3.7	0.45	0.6	!	0.18
Suburb	35.9	1.14	17.1	0.90	15.6	0.86	3.1	0.41	0.3	!	0.14
Town	30.6	2.91	14.3	2.21	17.9	2.42	5.2	1.40	#		†
Rural	35.7	1.64	16.9	1.28	12.1	1.11	3.5	0.63	0.8	!	0.31

†Not applicable.

#Rounds to zero.

!Interpret data with caution. The coefficient of variation (CV) for this estimate is between 30 and 50 percent.

‡Reporting standards not met. Either there are too few cases for a reliable estimate or the CV is 50 percent or greater.

\1\The SD variable used in this table includes students who have a 504 plan, even if they do not have an individualized education program.

NOTE: SE=standard error. Race categories exclude persons of Hispanic ethnicity. Detail may not sum to totals because of rounding.

Table 3. Percentage distribution of 8th-grade public school students, by number of hours they spend using a laptop or desktop computer for schoolwork on a weekday and selected student and school characteristics: 2015

Selected student or school characteristic	None		Less than 1 hour		1 to 2 hours		2 to 3 hours		More than 3 hours	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Total	19.9	0.55	28.6	0.63	29.0	0.63	11.0	0.43	11.5	0.44
Sex										
Male	21.4	0.79	28.3	0.87	28.4	0.87	10.5	0.59	11.4	0.61
Female	18.3	0.77	29.0	0.91	29.6	0.91	11.4	0.63	11.6	0.64
Race/ethnicity										
White	18.0	0.79	34.1	0.98	28.8	0.93	9.1	0.59	9.9	0.62
Black	21.6	1.35	22.2	1.36	27.3	1.46	12.8	1.10	16.1	1.21
Hispanic	23.8	1.10	24.2	1.11	29.9	1.18	11.7	0.83	10.4	0.79
Asian	10.8	1.89	26.8	2.70	32.3	2.86	16.4	2.26	13.8	2.10
Pacific Islander	‡	†	‡	†	‡	†	‡	†	‡	†
American Indian/Alaska Native	‡	†	‡	†	‡	†	‡	†	‡	†
Two or more races	16.3	3.26	29.5	4.03	27.9	3.96	13.2	2.99	13.2	2.99
English language learner (ELL) status										
ELL	23.2	2.24	22.7	2.22	27.7	2.37	13.4	1.81	12.9	1.78
Non-ELL	19.7	0.57	29.1	0.65	29.1	0.65	10.8	0.45	11.4	0.46
Disability status\1										
Identified as student with disability (SD)	25.4	1.88	25.6	1.89	24.4	1.86	12.7	1.44	11.9	1.40
Not identified as SD	19.3	0.58	29.0	0.66	29.5	0.67	10.8	0.45	11.4	0.47
Eligibility for free or reduced-price lunch										
Eligible	24.5	0.79	23.9	0.79	28.4	0.83	11.3	0.58	12.0	0.60
Not eligible	13.6	0.74	34.4	1.02	30.1	0.98	10.9	0.67	11.0	0.67
Information not available	22.6	4.08	42.5	4.82	24.5	4.20	3.8	1.86	6.6	2.42
School locale										
City	22.3	1.12	25.9	1.18	29.5	1.22	11.0	0.84	11.5	0.86
Suburb	18.0	0.81	29.0	0.95	29.7	0.96	11.0	0.66	12.4	0.69
Town	17.0	1.65	29.1	1.99	30.5	2.02	11.9	1.42	11.5	1.40
Rural	22.4	1.30	31.3	1.44	26.1	1.37	10.5	0.96	9.6	0.92

†Not applicable.

‡Reporting standards not met (too few cases for a reliable estimate).

\1\The SD variable used in this table includes students who have a 504 plan, even if they do not have an individualized education program.

NOTE: SE=standard error. Race categories exclude persons of Hispanic ethnicity. Detail may not sum to totals because of rounding.