

APPENDIX A: DETAILED METHODOLOGY

The purpose of this report was to better understand the special education landscape in both charter and traditional public schools in the nation. Using the CRDC data from 2013-14, key variables such as total enrollment, enrollment by student disability, category by type of school, provision of special education and related services, discipline information, and school specialization were examined. The following details the methodology used to assess the findings in this report.

Overall Enrollment of Students with Disabilities

Using the 2013-14 Civil Rights Data Collection (CRDC) 95,507 public schools from across the US were included in this analysis. Of those schools, 6,129 were charter schools (see **table A1** for the population of schools included in CRDC).

Table A1. Population of Schools in CRDC

School type	Number of schools, by type	Percent of schools, by type
Non-charter, alternative, special education, magnet	79,603	83.3%
Charter	6,129	6.4%
Alternative	4,519	4.7%
Magnet	3,749	3.9%
Special Education	2,196	2.3%
<i>Total*</i>	<i>96,196</i>	<i>100.6%*</i>

* Total number of schools and total percent of schools by type is greater than the number of schools in the CRDC because school types are not mutually exclusive.

Decisions Related to Privacy-protected Values, Missing Values, and Not Applicable Values

In analyzing the CRDC, it was necessary to make a number of decisions regarding how to clean and analyze the data. Perhaps the most important decision was how to deal with masked values. Three types of masked values were observed in the dataset:

- **Privacy-protected values**, which are values of 2 or below, were masked with a “-2” value
- **Missing values** were marked with a “-5” value
- **Not applicable values** were marked with a “-9” value

Missing and not applicable values within the CRDC were observed for both IDEA and section 504 enrollment variables. However, privacy-protected values were only observed for IDEA enrollment variables. IDEA enrollment within the CRDC was disaggregated by gender and had to be combined to form an aggregate IDEA total enrollment. Thus, any schools with privacy protected values for either gender were dropped from the analysis.

Incorrect Charter School Identification

The cleaning methodology (presented below) entailed identifying and reclassifying schools that erroneously identified themselves as “charter schools.” A school’s charter identification was considered erroneous if it self-identified as a charter school despite the fact that the school’s state did not have any charter schools or did not have charter school legislation in 2013-14. Ten states (Alabama, Kentucky, Mississippi, Montana, North Dakota, Nebraska, South Dakota, Vermont, Washington, and West Virginia)

did not have charter schools or charter school legislation as of 2013-14.¹ Any schools in these states that self-identified as charter were re-categorized to reflect their true identification. It is worth noting that because the CRDC is self-reported, there remains the possibility that other schools may be incorrectly coded in the dataset.

IDEA Enrollment Analysis

Data Cleaning

The CRDC population was cleaned for student enrollment by school type and for IDEA (Individuals with Disabilities Education Act) enrollment in the following eight steps (**Table A2**, at the end of step 8 summarizes the data cleaning for all stages):

Step 1. This step of data cleaning removed 12 schools. CRDC variable names used in this step included:

- tot_enr_m
- tot_enr_f

Eight schools were removed from the population because they were missing (-5) total enrollment values for male and female students; another four schools were taken out because they said they enrolled “0” male and female students.

Step 2. Re-categorized schools identified as charter schools in states without charter school laws. CRDC variable names used in this step included:

- lea_state
- sch_status_charter

Four states without charter school laws (Montana, North Dakota, Vermont, and Washington) had at least one school report that it was a charter school. These schools (eight in total) were all re-categorized as non-charter schools.

Step 3. Re-categorized schools with missing values (-5) for school type. CRDC variable names included:

- sch_status_sped
- sch_status_magnet
- sch_status_charter
- sch_status_alt

One state, Wisconsin, had 10 schools incorrectly categorized. Based on information gathered through the National Center for Education Statistics (NCES) Search for Public Schools and each school’s website, the schools were re-categorized and retained in the sample. Six of the schools were re-categorized as alternative schools, three as special education schools, and one as an alternative and special education school.

Step 4. Schools with privacy protected values (-2) for both male and female IDEA enrollment were removed from the analysis. CRDC variable names for this step included:

- sch_enr_idea_m
- sch_enr_idea_f

In total, 5,922 schools had privacy protected values for both male and female IDEA enrollment and were removed from the sample.

¹ Of the ten states, Mississippi and Washington had charter school legislation but had not opened any charter and Alabama has since passed charter school legislation.

Step 5. Schools that reported having more students with disabilities than the total number of students were removed from the analysis. CRDC variable names for this step included:

- sch_enr_idea_m
- sch_enr_idea_f
- tot_enr_m
- tot_enr_f

285 schools were removed from the sample.

Step 6. If a school reported having 0 total enrollment of a specific gender, and had privacy protected value for that same gender, the school was flagged as a possible all male or female school. 469 possible all boy schools and 132 possible all girl schools were flagged. CEP contacted each school to check if the school enrolled only one gender. In all, 526 schools were confirmed as enrolling only one gender. The IDEA enrollment data for these schools were re-categorized to “0” depending on whether they were in all male or female school so that they could be retained in the sample. Seventy-five schools flagged schools enrolled both boys and girls and were removed from the enrollment analysis.

CRDC variable names included:

- sch_enr_idea_m
- sch_enr_idea_f
- tot_enr_m
- tot_enr_f

Step 7. Removed schools with missing values (-5) for IDEA enrollment. CRDC variable names used for this step included:

- sch_enr_idea_m
- sch_enr_idea_f

Five schools were removed from the analysis in this step.

Step 8. Removed schools with privacy protected values (-2) for either male IDEA or female IDEA enrollment. CRDC variable names included:

- sch_enr_idea_m
- sch_enr_idea_f

394 schools were removed because of privacy protected values for male IDEA enrollment and 3,823 were removed because of privacy protected values for female IDEA enrollment.

Table A2. Total Number of Schools Re-categorized or Removed in Steps 1-8

	Number of schools re-categorized	Number of schools removed from the sample	Number of unduplicated deleted schools
Step 1	-	12	12
Step 2	8	-	12
Step 3	10	-	12
Step 4	-	5,922	5,934
Step 5	-	285	6,219
Step 6	526	75	6,294
Step 7	-	5	6,299
Step 8	-	4,217	10,516
<i>Total</i>	<i>544</i>	<i>10,516</i>	<i>10,516</i>

Descriptive Statistics for Schools Included and Excluded in the Analysis

In all, 84,991 schools were included in the analysis. Of those schools, 4,871 were charters and 80,120 were traditional public school (see **tables A3, A4, and A5** for summary statistics of the removed schools and the schools that remained in the analysis by school type). The IDEA enrollment analysis contained 89.64% of all CRDC traditional public schools and 79.47% of all CRDC charters. According to the National Alliance for Public Charter Schools, there were 6,440 charter schools operating during 2013-14 academic year.² This would mean that the IDEA enrollment analysis captured 75.64% of all charter schools in the country. Because the CRDC disaggregated total enrollment variables by gender, CEP combined the gender counts to create a total enrollment (for IDEA enrollment, Section 504 enrollment, and overall total enrollment).

Table A3. Summary Statistics of Total Enrollment, by School Type

Statistics	All Schools in Analysis	Charter School in Enrollment Analysis	Traditional Public School in Enrollment Analysis
Number of schools	84,991	4,871	80,120
Average enrollment of students	571.5719	478.6498	577.2212
Median enrollment of students	482	361	489
Total enrollment of students	48,578,468	2,331,503	46,246,965
Enrollment of students (1st quartile)	312	208	320
Enrollment of students (3rd quartile)	696	571	702
Standard deviation of enrollment	442.9074	610.6891	429.9621

Table A4. Summary Statistics of Total Enrollment, Charter Schools Only

Statistics	All Charter Schools³	Removed Charter Schools	Charter Schools in Enrollment Analysis
Number of schools	6,119	1,248	4,871
Average enrollment of students	418.389	183.1883	478.6498
Median enrollment of Students	309	123	361
Total enrollment of students	2,560,122	228,619	2,331,503
Enrollment of students (1st quartile)	158	62	208
Enrollment of students (3rd quartile)	514	236	571
Standard deviation of enrollment	566.3430	218.1865	610.6891

Table A5. Summary Statistics of Total Enrollment, Traditional Public Schools Only

² National Alliance for Public Charter Schools. (2014). Estimated Number of Public Charter Schools & Students, 2013-2014. Retrieved from <http://www.publiccharters.org/wp-content/uploads/2014/02/New-and-Closed-Report-February-20141.pdf>.

³ Tables A4 and A5 exclude the 12 schools (10 charters and 2 traditional public schools) that were removed from the population because they were either missing total enrollment values for male and female students or reported enrolling "0" male and female students. Including the 12 schools in the summary statistics would bias the summary statistics since their values were either "-5" or "-2".

Statistics	All Traditional Public Schools	Removed Traditional Public Schools	Traditional Schools in Enrollment Analysis
Number of schools	89,376	9,256	80,120
Average enrollment of students	531.1898	132.7419	577.2212
Median enrollment of students	456	60	489
Total enrollment of students	47,475,624	1,228,659	46,246,965
Enrollment of students (1st quartile)	265	22	320
Enrollment of students (3rd quartile)	671	163	702
Standard deviation of enrollment	433.3755	190.3266	429.9621

Table A6 shows the summary of IDEA enrollment and total student enrollment by type of school for each state in the US.

Table A6. Summary of Student Enrollment Data and Number of Schools by State 2013-14

State	Traditional Public Schools-Total IDEA Students	Charter Schools-Total IDEA Enrollment	Traditional Public Schools-All Students	Charter Schools-All Students	Total IDEA Enrollment	Total Enrollment	Number of Traditional Public Schools	Number of Charter Schools
AK	15,324	560	116,592	5,963	15,884	122,555	330	25
AL	90,345	--	706,138	--	90,345	706,138	1,276	--
AR	49,203	1,238	439,997	12,566	50,441	452,563	933	31
AZ	109,088	16,973	901,450	168,024	126,061	1,069,474	1,250	411
CA	589,380	37,754	5,637,138	434,746	627,134	6,071,884	7,726	788
CO	80,507	5,922	764,879	87,742	86,429	852,621	1,440	163
CT	65,240	492	528,667	5,516	65,732	534,183	1,041	18
DC	6,777	3,592	45,049	26,589	10,369	71,638	107	76
DE	18,878	848	124,648	8,343	19,726	132,991	201	16
FL	317,272	19,460	2,473,038	209,959	336,732	2,682,997	3,015	472
GA	184,355	7,728	1,633,527	78,871	192,083	1,712,398	2,174	95
HI	18,435	706	175,299	8,628	19,141	183,927	246	23
IA	58,113	71	474,586	286	58,184	474,872	1,260	1
ID	23,418	1,172	247,442	14,477	24,590	261,919	519	31
IL	257,777	7,226	1,917,190	55,579	265,003	1,972,769	3,636	57
IN	143,275	3,562	972,764	26,473	146,837	999,237	1,719	46
KS	64,151	194	476,665	1,872	64,345	478,537	1,259	4
KY	96,085	--	679,531	--	96,085	679,531	1,285	--
LA	68,467	4,699	640,644	47,545	73,166	688,189	1,182	88
MA	149,136	5,177	892,960	36,141	154,313	929,101	1,686	82
MD	79,644	17,975	726,142	149,822	97,619	875,964	1,156	231
ME	27,959	40	167,371	158	27,999	167,529	497	2
MI	175,791	12,975	1,351,714	122,402	188,766	1,474,116	2,764	268
MN	111,378	5,338	792,904	37,924	116,716	830,828	1,586	136
MO	114,043	1,359	861,496	16,489	115,402	877,985	2,002	45
MS	55,076	--	463,918	--	55,076	463,918	840	--
MT	14,111	--	125,106	--	14,111	125,106	391	--

NC	175,164	5,356	1,452,822	55,190	180,520	1,508,012	2,328	107
ND	12,555	--	95,685	--	12,555	95,685	327	--
NE	44,063	--	287,663	--	44,063	287,663	832	--
NH	28,380	93	181,370	439	28,473	181,809	423	3
NJ	189,874	2,874	1,256,833	28,380	192,748	1,285,213	2,191	66
NM	43,018	2,198	306,668	16,504	45,216	323,172	661	64
NV	49,641	2,204	424,337	23,605	51,845	447,942	540	37
NY	396,505	11,205	2,585,658	80,740	407,710	2,666,398	4,471	204
OH	231,870	16,793	1,635,129	104,979	248,663	1,740,108	3,189	275
OK	101,999	1,278	648,634	11,355	103,277	659,989	1,602	18
OR	67,194	3,087	525,401	25,970	70,281	551,371	1,061	90
PA	249,753	18,514	1,595,608	116,096	268,267	1,711,704	2,781	150
RI	19,792	715	133,569	5,147	20,507	138,716	268	17
SC	90,238	2,048	706,378	21,859	92,286	728,237	1,092	43
SD	16,189	--	121,318	--	16,189	121,318	408	--
TN	128,066	1,870	945,757	16,198	129,936	961,955	1,607	61
TX	424,054	12,684	4,869,434	177,533	436,738	5,046,967	7,133	413
UT	74,309	7,074	570,866	55,577	81,383	626,443	826	93
VA	156,530	83	1,262,974	461	156,613	1,263,435	1,861	4
VT	11,163	--	75,053	--	11,163	75,053	237	--
WA	132,369	--	1,045,217	--	132,369	1,045,217	1,956	--
WI	112,788	4,480	817,615	35,176	117,268	852,791	1,869	116
WV	40,784	--	276,267	--	40,784	276,267	666	--
WY	12,609	14	89,854	179	12,623	90,033	270	1
Nation	5,792,135	247,631	46,246,965	2,331,503	6,039,766	48,578,468	80,120	4,871

Table A7 depicts the percentages of students with disabilities in traditional public schools and in charter schools. The table also presents the difference between enrollment percentage of students with disabilities in traditional public schools and charter schools.

Table A7. Percent of Students with Disabilities, by School Type and State (2013-14)

State	Students with Disabilities % (Traditional Public Schools)	Students with Disabilities % (Charters)	Difference*
AK	13.14%	9.39%	3.75%
AL	12.79%	--	--
AR	11.18%	9.85%	1.33%
AZ	12.10%	10.10%	2.00%
CA	10.46%	8.68%	1.77%
CO	10.53%	6.75%	3.78%
CT	12.34%	8.92%	3.42%
DC	15.04%	13.51%	1.53%
DE	15.15%	10.16%	4.98%
FL	12.83%	9.27%	3.56%
GA	11.29%	9.80%	1.49%
HI	10.52%	8.18%	2.33%
IA	12.24%	24.83%	-12.58%
ID	9.46%	8.10%	1.37%
IL	13.45%	13.00%	0.44%
IN	14.73%	13.46%	1.27%

KS	13.46%	10.36%	3.10%
KY	14.14%	--	--
LA	10.69%	9.88%	0.80%
MA	16.70%	14.32%	2.38%
MD	10.97%	12.00%	-1.03%
ME	16.70%	25.32%	-8.61%
MI	13.01%	10.60%	2.40%
MN	14.05%	14.08%	-0.03%
MO	13.24%	8.24%	5.00%
MS	11.87%	--	--
MT	11.28%	--	--
NC	12.06%	9.70%	2.35%
ND	13.12%	--	--
NE	15.32%	--	--
NH	15.65%	21.18%	-5.54%
NJ	15.11%	10.13%	4.98%
NM	14.03%	13.32%	0.71%
NV	11.70%	9.34%	2.36%
NY	15.33%	13.88%	1.46%
OH	14.18%	16.00%	-1.82%
OK	15.73%	11.25%	4.47%
OR	12.79%	11.89%	0.90%
PA	15.65%	15.95%	-0.29%
RI	14.82%	13.89%	0.93%
SC	12.77%	9.37%	3.41%
SD	13.34%	--	--
TN	13.54%	11.54%	2.00%
TX	8.71%	7.14%	1.56%
UT	13.02%	12.73%	0.29%
VA	12.39%	18.00%	-5.61%
VT	14.87%	--	--
WA	12.66%	--	--
WI	13.79%	12.74%	1.06%
WV	14.76%	--	--
WY	14.03%	7.82%	6.21%
Nation	12.52%	10.62%	1.90%

* Because not all states in the country have charter schools, the national percentages presented in the final row may overstate the percentage difference between the two school types. As a result, a separate analysis was conducted to compute a national percentage for students with disabilities using only states that had charter laws. The percentage of students with disabilities in traditional public schools dropped from 12.52% to 12.46% and the difference between traditional public schools and charter schools dropped from 1.90% to 1.84%.

Hypothesis Testing for Removed Schools

Hypothesis testing was conducted to determine if there was a significant difference between the sampled schools in the IDEA enrollment analysis and the schools removed via the cleaning process. Because the exact number of students with disabilities at the removed schools was unknown due to instances of

masked values, total enrollment formed the basis of the test. A Welch’s t-test was used since the two groups did not have equal variances and the sample sizes were unequal. The results of the hypothesis test, which are presented in **Table A8**, revealed a very significant difference (a p-value of less than 0.01). Thus, the null hypothesis that the sample of included schools and excluded schools had the same total enrollment mean was rejected. In other words, the total enrollment means are statistically different from one another. The rejection of the null hypothesis was expected since the schools removed from the analysis were identified as problematic (for example, some schools reported enrolling a greater number of students with disabilities than the total number of students enrolled in the school and other schools reported that they did not enroll any students).

Table A8. Hypothesis Testing for Schools Included and Excluded from IDEA Enrollment Analysis

School Type	Mean Enrollment of Included Schools	Mean Enrollment of Excluded Schools	t-value	Degrees of Freedom ⁴	p-value
Traditional Public	577.22	132.74	178.21	22,482	<0.01
Charter	478.65	183.19	27.59	5,550	<0.01
All Samples Schools	571.57	138.74	178.04	26,908	<0.01

Section 504 Enrollment

Data Cleaning

The CRDC database population was cleaned for student enrollment by school type and for Section 504 enrollment in four steps. The cleaning process for Section 504 enrollment required fewer steps than the IDEA enrollment cleaning because the Section 504 enrollment variables did not have privacy protected values (-2). As a result, more schools were included in the Section 504 analysis compared to the IDEA enrollment analysis.

Step 1. This step of data cleaning removed 12 schools. CRDC variable names used in this step included:

- tot_enr_m
- tot_enr_f

Eight schools were removed from the population because they were missing (-5) total enrollment values for male and female students; another four schools were taken out because they said they enrolled “0” male and female students. (**Table A9**, at the end of step 4 summarizes the data cleaning for all stages.)

Step 2. Re-categorized schools identified as charter schools in states without charter school laws. CRDC variable names used in this step included:

- lea_state
- sch_status_charter

Four states without charter school laws (Montana, North Dakota, Vermont, and Washington) had at least one school reporting it was a charter school. These schools (eight in total) were all re-categorized as non-charter schools.

Step 3. Re-categorized schools with missing values (-5) for school type. CRDC variable names included:

⁴ Satterthwaite's degrees of freedom was calculated.

- sch_status_sped
- sch_status_magnet
- sch_status_charter
- sch_status_alt

One state, Wisconsin, had 10 schools incorrectly categorized. Based on information gathered through the National Center for Education Statistics (NCES) Search for Public Schools and each school’s website, the schools were re-categorized and retained in the sample. Six of the schools were re-categorized as alternative schools, three as special education schools, and one as an alternative and special education school.

Step 4. Removed schools with missing values (-5) for 504 enrollment. CRDC variable names used for this step included:

- sch_enr_504_m
- sch_enr_504_f

Thirteen schools were removed from the analysis in this step.

Table A9. Total Number of Schools Re-categorized or Removed in Steps 1-5

	Number of schools re-categorized	Number of schools removed from the sample	Number of unduplicated deleted schools
Step 1	-	12	12
Step 2	8	-	12
Step 3	10	-	12
Step 4	-	13	25
<i>Total</i>	<i>18</i>	<i>13</i>	<i>25</i>

Descriptive Statistics for Schools Included in the Analysis

In all 95,482 schools were included in the Section 504 analysis. Of those schools, 6,110 were charters and 89,372 were traditional public school (see **tables A10, A11, and A12** for summary statistics of the removed schools and the schools that remained in the analysis by school type). The Section 504 enrollment analysis contained approximately 100% of all CRDC traditional public schools and 99.85% of all CRDC charters. If 6,440 charter schools were operating during 2013-14 academic year (according to the National Alliance for Public Charter Schools, 2014), this would mean that the Section 504 enrollment analysis captured 94.88% of all charter schools in the country.

Table A10. Summary Statistics of Total Enrollment, by School Type

Statistics	All Schools in Analysis	Charter School in Enrollment Analysis	Traditional Public School in Enrollment Analysis
Number of schools	95,482	6,110	89,372
Average enrollment of students	523.9641	418.5817	531.1687
Median enrollment of students	446	309	456
Total enrollment of students	50,029,140	2,557,534	47,471,609
Enrollment of students (1st quartile)	254	158	265
Enrollment of students (3rd quartile)	664	515	671
Standard deviation of enrollment	443.9207	566.7056	433.3295

Table A11. Summary Statistics of Total Enrollment, Charter Schools Only

Statistics	All Charter Schools⁵	Removed Charter Schools	Charter Schools in Enrollment Analysis
Number of schools	6,119	9	6,110
Average enrollment of students	418.389	287.5556	418.5817
Median enrollment of students	309	312	309
Total enrollment of students	2,560,122	2,588	2,557,534
Enrollment of students (1st quartile)	158	117	158
Enrollment of students (3rd quartile)	514	453	515
Standard deviation of enrollment	566.3430	166.8825	566.7056

Table A12. Summary Statistics of Total Enrollment, Traditional Public Schools Only

Statistics	All Traditional Public Schools	Removed Traditional Public Schools	Traditional Schools in Enrollment Analysis
Number of schools	89,376	4	89,372
Average enrollment of students	531.1898	1004.25	531.1687
Median enrollment of students	456	952.5	456
Total enrollment of students	47,475,624	4,017	47,471,609
Enrollment of students (1st quartile)	265	92	265
Enrollment of students (3rd quartile)	671	1,916.5	671
Standard deviation of enrollment	433.3755	1,067.69	433.3295

Determining Charter LEA Status

Charter schools can be categorized by their legal status and can either be (1) an independent entity serving as their own local education agency (LEA), or (2) part of another LEA. Unfortunately, the CRDC does not contain any information pertaining to charter legal status. As a result, CEP used three variables from the 2013-14 Common Core of Data (CCD) Local Education Agency Universe file to determine a charter's legal status. The variables, along with the possible response options, are provided below:

- Education Agency Type Code (TYPE): This is the NCES code for type of agency.
 - 1 = Regular, local school district that is not a component of a supervisory union.
 - 2 = Regular, local school district component of a supervisory union sharing a superintendent and administrative services with other local school districts.
 - 3 = Supervisory union administrative center, or a county superintendent serving the same purpose.
 - 4 = Regional education services agency, or a county superintendent serving the same purpose.

⁵Tables 11, and 12 exclude the 12 schools (10 charters and 2 traditional public schools) that were removed from the population because they were either missing total enrollment values for male and female students or reported enrolling "0" male and female students. Including the 12 schools in the summary statistics would bias the summary statistics since their values were either "-5" or "-2".

- 5 = State-operated institution charged, at least in part, with providing elementary and/or secondary instruction or services to a special-needs population.
- 6 = Federally operated institution charged, at least in part, with providing elementary and/or secondary instruction or services to a special-needs population.
- 7 = Agencies for which all associated schools are charter schools.
- 8 = Other education agencies that do not fit into the first seven categories.
- Agency Charter Code (AGCHRT). This code is an indicator of charter schools served by the agency.
 - 1 = All associated schools are charter schools.
 - 2 = Some associated schools are charter schools and some are non-charter schools.
 - 3 = All associated schools are non-charter schools.
- LEA Charter Status (CHRTLEASTAT). This code indicates the status of a charter LEA for purposes of federal programs.
 - ‘N’ – State does not have charters or state does not permit charter LEAs
 - ‘NOTCHR’ - Not a charter district – State has charter LEAs but this LEA is not a charter LEA.
 - ‘CHRTIDEAESEA’ – Charter district which is an LEA for programs authorized under IDEA, ESEA and Perkins
 - ‘CHRTESEA’ – Charter district which is an LEA for programs authorized under ESEA and Perkins but not under IDEA
 - ‘CHRTIDEA’ – Charter district which is an LEA for programs authorized under IDEA but not under ESEA and Perkins
 - ‘CHRTNOTLEA’ – Charter district which is not an LEA for any federal program
 - ‘M’ – missing

A charter school was considered its own LEA if its administrative district met the criteria listed below. If the charter school did not meet the criteria, it was considered part of an LEA. Table 13 shows the breakdown of charter legal status by state.

1. An “Education Agency Type Code” of 7 (Agencies for which all associated schools are charter schools).
2. An “Agency Charter Code” of 1 (All associated schools are charter schools)
3. An “LEA Charter Status” of ‘CHRTIDEAESEA’ (Charter district which is an LEA for programs authorized under IDEA, ESEA and Perkins), ‘CHRTESEA’ (Charter district which is an LEA for programs authorized under ESEA and Perkins but not under IDEA), or ‘CHRTIDEA’ (Charter district which is an LEA for programs authorized under IDEA but not under ESEA and Perkins).

Table A13. Charter Legal Status by State

State	Total Number of Charters in Enrollment analysis by State	Total Number of Charters Classified as being Part of an LEA	Total Number of Charters Classified as being their Own LEA
AK	25	25	0
AR	31	11	20
AZ	411	58	353
CA	788	750	38
CO	163	145	18

CT	18	0	18
DC	76	0	76
DE	16	0	16
FL	472	472	0
GA	95	82	13
HI	23	23	0
IA	1	1	0
ID	31	5	26
IL	57	55	2
IN	46	0	46
KS	4	4	0
LA	88	26	62
MA	82	11	71
MD	231	231	0
ME	2	0	2
MI	268	0	268
MN	136	0	136
MO	45	0	45
NC	107	0	107
NH	3	0	3
NJ	66	1	65
NM	64	29	35
NV	37	23	14
NY	204	2	202
OH	275	2	273
OK	18	0	18
OR	90	77	13
PA	150	0	150
RI	17	3	14
SC	43	25	18
TN	61	61	0
TX	413	32	381
UT	93	2	91
VA	4	4	0
WI	116	92	24
WY	1	1	0
Total	4,871	2,253	2,618

Enrollment by Disability Category and Educational Placement

When the 2013-14 Civil Rights Data Collection (CRDC) was released, the Department of Education’s Office for Civil Rights (OCR) provided 17 EDFacts⁶ appended data files. Because the appended files contained pertinent information for some analyses presented in this report not found within the CRDC, it was necessary to combine the two datasets. The following section of this appendix describes the merging process.

⁶ EDFacts is a U.S. Department of Education initiative that centralizes performance data supplied by K–12 state education agencies with other data assets, such as financial grant information, within the Department to enable better analysis and use in policy development, planning, and management (see www2.ed.gov/edfacts).

The Merging Procedure

Two of the main goals of this section were to analyze the enrollment of students with disabilities by (a) disability category and (b) educational placement. The information for these two analyses were found in the EDFACTS appended data file titled “ID 74 SCH – Educational placement by Gender by Disability.” CEP made the decision to not combine the appended EDFACTS data with the raw 2013-14 CRDC data file that contained the full population of public schools.⁷ Rather, it was combined with a cleaned version of the CRDC used for the National Center for Special Education in Charter Schools’ (NCSECS) report on IDEA enrollment by school type.⁸

A two-step process was used to merge the CRDC and EDFACTS datasets. The first step was to take advantage of the fact that both EDFACTS and the CRDC utilized the same “combokey”— a unique school level identifier developed by OCR. By using the combokey as the key matching variable, CEP was able to yield a match rate of 93.81%. In other words, 93.81% of all schools in the cleaned CRDC file were matched with schools in the EDFACTS file.

Whereas EDFACTS includes only one unique school identifier (the combokey), the CRDC includes two. In addition to the combokey, the CRDC provides a NCES School ID— a different unique school level identifier developed by the National Center for Education Statistics (NCES). In most cases, the combokey matched the NCES School ID. However, because there were instances where they differed⁹, CEP took the remaining CRDC schools that did not merge from step 1 and changed the matching criteria to the NCES School ID found within the CRDC. Merging the combokey from EDFACTS to the NCES School ID from the CRDC increased the match rate from 93.81% to 96.32%. **Table A14** shows the results of the merging process by school type and **table A15** shows the results by both state and school type.

Table A14. Merging Process Summary by School Type

	Traditional Public Schools	Charters	Total
Number of Schools in Cleaned CRDC File	80,120	4,871	84,991
Number of Schools in Disability Category Enrollment Analysis	77,565	4,296	81,861
Percentage of Schools in Enrollment Analysis Matched for Disability Category Enrollment Analysis	96.81%	88.20%	96.32%

⁷ A school with a privacy protected value for IDEA enrollment in the CRDC would also have privacy protected values when looking at student enrollment disaggregated by disability category. Thus, using the raw CRDC file would have led to the same number of schools included in the analysis. The advantage of using the cleaned CRDC file was that it simplified the process of cleaning masked values while also correcting erroneous charter school identification.

⁸ Refer to NCSECS’ (2017) report on IDEA enrollment for the cleaning process.

⁹ The CRDC recognizes that there are discrepancies between the combokey and NCES school ID due to differences in definitions and procedures between EDFACTS and the CRDC. For more information see the Public-use Data File User’s Manual for the 2013-14 CRDC located at <http://ocrdata.ed.gov/Downloads/CRDC%202013-14%20Public%20Use%20Data%20File%20Users%20Manual.pdf>.

Table A15. Merging Process Summary by School Type and State

State	Number of Traditional Public Schools from Cleaned CRDC File	Number of Traditional Public Schools from Cleaned CRDC File Matched with EDFacts	Number of Traditional Public Schools from Cleaned CRDC File not Matched with EDFacts	Number of Charter Schools from Cleaned CRDC File	Number of Charter Schools from Cleaned CRDC Matched with EDFacts	Number of Charter Schools from Cleaned CRDC not Matched with EDFacts
AK	330	326	4	25	25	0
AL	1,276	1,248	28			
AR	933	924	9	31	30	1
AZ	1,250	1,221	29	411	404	7
CA	7,726	7,464	262	788	529	259
CO	1,440	1,398	42	163	163	0
CT	1,041	965	76	18	13	5
DC	107	106	1	76	73	3
DE	201	191	10	16	16	0
FL	3,015	2,990	25	472	470	2
GA	2,174	2,118	56	95	94	1
HI	246	246	0	23	23	0
IA	1,260	1,231	29	1	1	0
ID	519	512	7	31	28	3
IL	3,636	3,404	232	57	25	32
IN	1,719	1,692	27	46	46	0
KS	1,259	1,235	24	4	4	0
KY	1,285	1,245	40			
LA	1,182	1,166	16	88	88	0
MA	1,686	1,624	62	82	77	5
MD	1,156	1,141	15	231	229	2
ME	497	490	7	2	2	0
MI	2,764	2,682	82	268	268	0
MN	1,586	1,516	70	136	136	0
MO	2,002	1,916	86	45	45	0
MS	840	821	19			
MT	391	391	0			
NC	2,328	2,311	17	107	106	1
ND	327	322	5			
NE	832	778	54			
NH	423	411	12	3	3	0
NJ	2,191	2,118	73	66	63	3
NM	661	638	23	64	64	0
NV	540	534	6	37	37	0

NY	4,471	4,283	188	204	1	203
OH	3,189	3,075	114	275	265	10
OK	1,602	1,559	43	18	18	0
OR	1,061	1,032	29	90	90	0
PA	2,781	2,673	108	150	138	12
RI	268	261	7	17	17	0
SC	1,092	1,067	25	43	42	1
SD	408	397	11			
TN	1,607	1,592	15	61	60	1
TX	7,133	7,032	101	413	397	16
UT	826	802	24	93	90	3
VA	1,861	1,799	62	4	4	0
VT	237	233	4			
WA	1,956	1,914	42			
WI	1,869	1,813	56	116	112	4
WV	666	658	8			
WY*	270		270	1		1
TOT AL	80,120	77,565	2,555	4,871	4,296	575

*All schools in WY were missing from the ED Facts data file.

Disability Category Enrollment Analysis

The ED Facts file disaggregated student enrollment and educational placement by disability category. The disability categories were as follows:

- **AUT**— Autism
- **DB**— Deaf-blindness
- **DD**— Developmental Delay
- **EMN**— Emotional Disturbance
- **HI**—Hearing Impairment
- **MR**— Intellectual Disability
- **MD**— Multiple Disabilities
- **OI**— Orthopedic Impairment
- **SLD**— Specific Learning Disability
- **SLI**— Speech or Language Impairment
- **TBI**— Traumatic Brain Injury
- **VI**— Visual Impairment
- **OHI**— Other Health Impairment

Also included was an additional disability category for missing data labeled “Missing.” CEP discovered that the Missing disability category contained data for all schools in the entire sample from the state of Iowa. Moreover, all Iowa schools in the merged sample provided data only for the missing disability category and no others. These schools, in addition to schools that provided privacy protected values, were

removed from the disability category enrollment analysis.¹⁰ **Table A16** shows the number traditional public schools and charter schools that reported non-privacy protected student enrollment values by disability category.

Table A16. Number of Schools without Privacy Protected Values Reporting Enrollment by Disability Category and School Type

	Traditional Public School Enrollment	Charter School Enrollment	All Schools
Autism	30,980	1,079	32,059
Deaf-blindness	10	1	11
Developmental Delay	9,611	216	9,827
Emotional Disturbance	18,707	768	19,475
Hearing Impairment	1,854	41	1,895
Intellectual Disability	23,141	559	23,700
Multiple Disabilities	5,789	131	5,920
Orthopedic Impairment	1,543	99	1,642
Specific Learning Disability	67,449	3,652	71,101
Speech or Language Impairment	53,569	2,449	56,018

Educational Placement Analysis

The educational placement analysis used the same cleaned sample as the disability category enrollment analysis. The same sample was used because this analysis examines the amount of time students with disabilities spend in general education classrooms (or education environment) by disability category (shown in **table A17**). Information on educational placement was found in the appended ED Facts data file and included several educational placement variables. The educational placement variables used for the analyses were as follows:

- **RC80_M/RC80_F**—the number of male/female students with disabilities in the general education classroom for 80% or more of the school day.
- **RC79TO40_M/ RC79TO40_F**—the number of male/female students with disabilities in the general education classroom from 40% to 79% of the school day.
- **RC39_M/RC39_F**—The number of male/female students with disabilities in the general education classroom for 39% or less of the school day

Another variable, *Total Membership*, provided a total for the number of students with disabilities by disability category. This variable only contained a privacy protected value when all of the educational placement variables had privacy protected values. When at least one the inclusion variables had a non-privacy protected value, the *Total Membership* equaled the number of students across the educational

¹⁰Unlike the CRDC which had three types of masked values (missing data, privacy protected data, and not applicable data), ED Facts only had one type of masked value. Any value that was less than or equal to 2 received a value of “-2”.

placement variables. In cases where *Total Membership* had a non-privacy protected value, the educational placement variables that had privacy protected values were set to zeroes.

Table A17. Educational placement by Disability Category and School Type

	Traditional Public Schools					Charter Schools					All
	39% or Less	Between 40% and 79%	80% or More	Other *	Total	39% or Less	Between 40% and 79%	80% or More	Other *	Total	
Autism	102,884	43,756	115,584	9,156	271,380	1,705	1,116	7,792	1,194	11,807	283,187
Deaf-blindness	4	0	4	39	47	4	0	0	0	4	51
Developmental Delay	11,955	12,875	60,902	234	85,966	246	204	1,055	4	1,509	87,475
Emotional Disturbance	36,754	29,303	87,045	17,457	170,559	572	523	6,761	441	8,297	178,856
Hearing Impairment	3,080	2,556	7,173	3,202	16,011	102	52	176	53	383	16,394
Intellectual Disability	147,439	58,184	26,640	12,390	244,653	2,183	985	2,324	477	5,969	250,622
Multiple Disabilities	25,971	7,349	5,734	7,108	46,162	389	90	541	170	1,190	47,352
Orthopedic Impairment	2,791	1,114	6,564	1,042	11,511	27	24	619	16	686	12,197
Specific Learning Disability	98,286	468,332	1,337,954	5,680	1,910,252	2,353	9,150	69,148	516	81,167	1,991,419
Speech or Language Impairment	27,053	27,790	771,789	4,029	830,661	137	316	30,595	124	31,172	861,833
Traumatic Brain Injury	460	902	4,213	65	5,640	0	27	240	27	294	5,934
Visual Impairment	232	147	886	918	2,183	0	12	67	0	79	2,262
Other Health Impairment	35,141	115,034	404,458	5,278	559,911	624	1,709	18,896	226	21,455	581,366
Total	492,050	767,342	2,828,946	66,598	4,154,936	8,342	14,208	138,214	3,248	164,012	4,318,948

*EDFacts includes five types of education environments that were merged to create the “other” environment in this analysis. Those five environments are correctional facility placements, homebound/hospital placements, parentally made placements in private schools, residential facility placements, and separate school placements.

Enrollment by Disability Category and Educational Placement by Charter Legal Status

To compare enrollment by disability category and educational placement for charters based on their legal status, the charter data from the overall IDEA enrollment analysis is used. However, the sample of charters in this section is smaller compared the sample of charters from the IDEA enrollment analysis. This is because the disaggregation of IDEA enrollment by disability category led to more instances of privacy protected values which had to be removed from the analysis. **Table A18** compares the charter legal status sample from the IDEA enrollment analysis to the disability category enrollment analysis and educational placement analyses by state.

Table A18. Comparison of Charter School Samples by Legal Status and State

State	IDEA Enrollment Analyses			Disability Category Enrollment and Educational placement Analyses			DIFFERENCE		
	Charters in Analysis	Part LEA	Own LEA	Charters in Analysis	Part of LEA	Own LEA	Number of Charters	Part of LEA	Own LEA
AK	25	25	0	25	25	0	0	0	0
AR	31	11	20	30	11	19	1	0	1
AZ	411	58	353	404	58	346	7	0	7
CA	788	750	38	529	510	19	259	240	19
CO	163	145	18	163	145	18	0	0	0
CT	18	0	18	13	0	13	5	0	5
DC	76	0	76	73	0	73	3	0	3
DE	16	0	16	16	0	16	0	0	0
FL	472	472	0	470	470	0	2	2	0
GA	95	82	13	94	81	13	1	1	0
HI	23	23	0	23	23	0	0	0	0
IA	1	1	0	1	1	0	0	0	0
ID	31	5	26	28	3	25	3	2	1
IL	57	55	2	25	23	2	32	32	0
IN	46	0	46	46		46	0	0	0
KS	4	4	0	4	4	0	0	0	0
LA	88	26	62	88	26	62	0	0	0
MA	82	11	71	77	7	70	5	4	1
MD	231	231	0	229	229	0	2	2	0
ME	2	0	2	2	0	2	0	0	0
MI	268	0	268	268	0	268	0	0	0
MN	136	0	136	136	0	136	0	0	0
MO	45	0	45	45	0	45	0	0	0
NC	107	0	107	106	0	106	1	0	1
NH	3	0	3	3	0	3	0	0	0
NJ	66	1	65	63	1	62	3	0	3
NM	64	29	35	64	29	35	0	0	0
NV	37	23	14	37	23	14	0	0	0

NY	204	2	202	1	1	0	203	1	202
OH	275	2	273	265	0	265	10	2	8
OK	18	0	18	18	0	18	0	0	0
OR	90	77	13	90	77	13	0	0	0
PA	150	0	150	138	0	138	12	0	12
RI	17	3	14	17	3	14	0	0	0
SC	43	25	18	42	24	18	1	1	0
TN	61	61	0	60	60	0	1	1	0
TX	413	32	381	397	31	366	16	1	15
UT	93	2	91	90	0	90	3	2	1
VA	4	4	0	4	4	0	0	0	0
WI	116	92	24	112	88	24	4	4	0
WY	1	1	0	0	0	0	1	1	0
Total	4,871	2,253	2,618	4,296	1,957	2,339	575	296	279

Discipline of Students

Each analysis presented in this section draws from a range of discipline related variables within the Civil Rights Data Collection (CRDC). Although discipline data was not affected by privacy protected values, there were instances of missing and not applicable values. As a result, the number of schools included in each analysis varied.

Suspensions and Expulsions

This section discusses the cleaning process for suspensions and expulsions as collected in the CRDC report. For all the analyses described here, the relevant CRDC variables were disaggregated by both disability status and gender. The gender variables were combined to form aggregate totals for students with disabilities and students without disabilities. Aggregate totals for each school were linked to the school’s enrollment data in order to generate a discipline rate by discipline category. For the discipline categories identified in this section, the following discipline rates were calculated:

- *Discipline rate of all students*—the result of all students disciplined divided by the total enrollment
- *Discipline rate of students without disabilities*—the result of all students with disabilities divided by the difference between total enrollment and IDEA enrollment
- *Suspension rate of students with disabilities*—the result of all students with disabilities divided by the IDEA enrollment.

Table 19 shows the variables used for the following analyses: suspensions and expulsions, **Table A20** provides the number of school included in each of the analyses, in addition to the number of schools removed due to missing or not applicable values.

Table A19. Variables for Discipline Analyses, excluding Harassment and Bullying

Analysis	CRDC Variables Used
Suspensions	<i>TOT_DISCWODIS_ISS_M/TOT_DISCWODIS_ISS_F</i> Total number of male/female students without disabilities who received one or more in-school suspensions.

	<i>TOT_DISCWDIS_ISS_IDEA_M/TOT_DISCWDIS_ISS_IDEA_F</i> Total number of male/female students with disabilities who received one or more in-school suspensions.
	<i>TOT_DISCWODIS_SINGOOS_M/TOT_DISCWODIS_SINGOOS_F</i> Total number of male/female students without disabilities who received only one out-of-school suspension.
	<i>TOT_DISCWDIS_SINGOOS_IDEA_M/TOT_DISCWDIS_SINGOOS_IDEA_F</i> Total number of male/female students with disabilities who received only one out-of-school suspension.
	<i>TOT_DISCWODIS_MULTOOS_M/TOT_DISCWODIS_MULTOOS_F</i> Total number of male/female students without disabilities who received more than one out-of-school suspension.
	<i>TOT_DISCWDIS_MULTOOS_IDEA_M/TOT_DISCWDIS_MULTOOS_IDEA_F</i> Total number of male/female students with disabilities who received more than one out-of-school suspension.
Expulsions	<i>TOT_DISCWODIS_EXPWE_M/TOT_DISCWODIS_EXPWE_F</i> Total number of male/female students without disabilities who received an expulsion with educational services.
	<i>TOT_DISCWDIS_EXPWE_IDEA_M/ TOT_DISCWDIS_EXPWE_IDEA_F</i> Total number of male/female students with disabilities who received an expulsion with educational services.
	<i>TOT_DISCWODIS_EXPWOE_M/ TOT_DISCWODIS_EXPWOE_F</i> Total number of male/female students without disabilities who received an expulsion without educational services.
	<i>TOT_DISCWDIS_EXPWOE_IDEA_M/TOT_DISCWDIS_EXPWOE_IDEA_F</i> Total number of male/female students with disabilities who received an expulsion without educational services.
	<i>TOT_DISCWODIS_EXPZT_M/ TOT_DISCWODIS_EXPZT_F</i> Total number of male/female students without disabilities who received an expulsion under zero tolerance policies.
	<i>TOT_DISCWDIS_EXPZT_IDEA_M/TOT_DISCWDIS_EXPZT_IDEA_F</i> Total number of male/female students with disabilities who received an expulsion under zero tolerance policies.

*Note: This variable indicated whether a school used corporal punishment to discipline students. Only schools that responded “YES” to the indicator were included in the corporal punishment analysis.

Table A20. CRDC Cleaning Discipline Analyses by School Type, excluding Harassment and Bullying, by School Type

Suspensions: One or More in-school Suspensions			
	Charter Schools	Traditional Public Schools	All Schools in Analysis
Number of Schools with Non Applicable Values for Students Without Disabilities	22	1,217	1,239
Number of Schools with Non Applicable Values for Students With Disabilities	17	1,161	1,178

Number of Schools with Missing Values for Students Without Disabilities	1	1	2
Number of Schools with Missing Values for Students with Disabilities	0	0	0
Total Number of Schools Included in Analysis for Students Without Disabilities	4,848	78,902	83,750
Total Number of Schools Included in Analysis for Students with Disabilities	4,854	78,959	83,813
Suspensions: Only One out-of-school Suspension			
	Charter Schools	Traditional Public Schools	All Schools in Analysis
Number of Schools with Non Applicable Values for Students Without Disabilities	17	942	959
Number of Schools with Non Applicable Values for Students With Disabilities	13	917	930
Number of Schools with Missing Values for Students Without Disabilities	1	2	3
Number of Schools with Missing Values for Students with Disabilities	0	0	0
Total Number of Schools Included in Analysis for Students Without Disabilities	4,853	79,176	84,029
Total Number of Schools Included in Analysis for Students with Disabilities	4,858	79,203	84,061
Suspensions: More than One out-of-school Suspension			
	Charter Schools	Traditional Public Schools	All Schools in Analysis
Number of Schools with Non Applicable Values for Students Without Disabilities	17	942	959
Number of Schools with Non Applicable Values for Students With Disabilities	13	917	930
Number of Schools with Missing Values for Students Without Disabilities	1	2	3
Number of Schools with Missing Values for Students with Disabilities	0	0	0
Total Number of Schools Included in Analysis for Students Without Disabilities	4,853	79,176	84,029
Total Number of Schools Included in Analysis for Students with Disabilities	4,858	79,203	84,061
Expulsions with Educational Services			
	Charter Schools	Traditional Public Schools	All Schools

			in Analysis
Number of Schools with Non Applicable Values for Students Without Disabilities	22	1,217	1,239
Number of Schools with Non Applicable Values for Students With Disabilities	17	1,161	1,178
Number of Schools with Missing Values for Students Without Disabilities	0	3	3
Number of Schools with Missing Values for Students with Disabilities	0	0	0
Total Number of Schools Included in Analysis for Students Without Disabilities	4,849	78,900	83,749
Total Number of Schools Included in Analysis for Students with Disabilities	4,854	78,959	83,813
Expulsions without Educational Services			
	Charter Schools	Traditional Public Schools	All Schools in Analysis
Number of Schools with Non Applicable Values for Students Without Disabilities	17	942	959
Number of Schools with Non Applicable Values for Students With Disabilities	13	917	930
Number of Schools with Missing Values for Students Without Disabilities	0	22	22
Number of Schools with Missing Values for Students with Disabilities	0	0	0
Total Number of Schools Included in Analysis for Students Without Disabilities	4,854	79,156	84,010
Total Number of Schools Included in Analysis for Students with Disabilities	4,858	79,203	84,061
Expulsions under Zero Tolerance Policies			
	Charter Schools	Traditional Public Schools	All Schools in Analysis
Number of Schools with Non Applicable Values for Students Without Disabilities	17	942	959
Number of Schools with Non Applicable Values for Students With Disabilities	13	917	930
Number of Schools with Missing Values for Students Without Disabilities	0	20	20
Number of Schools with Missing Values for Students with Disabilities	0	0	0
Total Number of Schools Included in Analysis for Students Without Disabilities	4,854	79,158	84,012

Total Number of Schools Included in Analysis for Students with Disabilities	4,858	79,203	84,061
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Hypothesis Testing for Analyzed CRDC Data

After analysis, hypothesis testing ($\alpha = 0.05$) was done to check whether the differences in the data were significant or not. In particular, the following data were compared:

- Total IDEA enrollment in charter schools as compared to traditional public schools
- Total enrollment under Section 504 in charter schools as compared to traditional public schools
- Total IDEA enrollment of charter schools that are part of an LEA as compared to charter schools that are their own LEA
- IDEA enrollment in charters as compared to traditional public schools for each disability category
- IDEA enrollment in charters that are a part of an LEA as compared to charters that are their own LEA for each disability category
- Overall expulsions and suspensions for charter schools as compared to traditional public schools
- Overall expulsions and suspensions for SWDs as compared to non-SWDs in charter schools
- Overall expulsions and suspensions for SWDs in charters that are part of an LEA as compared to charters that are their own LEA
- Total enrollment under IDEA and Section 504 in both charter schools and traditional public schools for 2011-12 CRDC data as compared to 2013-14 CRDC data
- Total enrollment under IDEA and Section 504 in traditional public schools for 2011-12 CRDC data as compared to 2013-14 CRDC data
- Total enrollment under IDEA and Section 504 in charter schools for 2011-12 CRDC data as compared to 2013-14 CRDC data
- Overall expulsions and suspensions in charter schools for 2011-12 CRDC data as compared to 2013-14 CRDC data
- Overall expulsions and suspensions in traditional public schools for 2011-12 CRDC data as compared to 2013-14 CRDC data

Specialized Charter Schools

A specialized school is one that primarily or entirely focuses on serving students with either a particular disability or any disability. In order to identify schools that could be considered specialized, the following steps were used (**Table A21**).

Step 1. From the CRDC data, a subset of all schools that reported $\geq 25\%$ enrollment of students with disabilities was obtained.¹¹

Step 2. Of these data, schools that had self-identified as specialized were included in the list.

Step 3. Schools that did not self-identify as specialized but enrolled $\geq 50\%$ students with disabilities were cross-checked with other databases and NCSECS's own research. Comparisons were made to the 2011-12 CRDC data, the Wisconsin Charter School Yearbook of 2016-17, and a list compiled by Julie Mead¹² in 2008 for a federally funded research study. Further, these schools were opportunistically identified through tracking in Google News Alerts, website searches and email and phone correspondence

¹¹ The 25% figure came from choosing a number that was more than twice the national average enrollment of students with disabilities for charter schools (10.62%)

¹² Mead, J. F. (2008, January). *Charter Schools Designed for Children with Disabilities: An Initial Examination of Issues and Questions Raised*. Retrieved from <http://nasdse.org/Portals/0/Web%20copy%20of%20Mead%20report-Jan%202008.pdf> (accessed July 31, 2015)

with school representatives. Adjustments were made based on whether or not the status of schools had changed (e.g., a closure, verified as not specialized etc.).

Step 4. Schools that were included in the final list were further categorized by state and disability focus.

Table A21. Compiling a list of Specialized Charter Schools

<i>Analysis</i>	<i>Schools</i>
Schools reporting $\geq 25\%$ enrollment of students with disabilities	308
Schools that were confirmed as specialized schools after cross-checking other databases	125
Schools confirmed as specialized after NCSECS research and follow-up	12
Schools that were confirmed to be closed or not specialized as per NCSECS follow-up	33
Schools that could not be confirmed as specialized even though enrollment of students with disabilities was $\geq 25\%$	140
Total number of schools used for analysis	137

Limitations

The analyses presented in this report have several limitations that must be acknowledged as follows:

1. The CRDC is self-reported and while CEP conducted a number of data validity checks, it did not comprehensively test the validity of all charter and traditional public school data. As a result, there remains a possibility that schools may have been incorrectly coded within the CRDC. Moreover, CEP observed instances of duplicate observations, in addition to instances where a single school categorized themselves as two separate entities (e.g. an elementary and middle school) when other sources (such as NCES) classified them as a single entity.
2. Missing data observed during the enrollment cleaning process was handled via complete case analysis.¹³ Although complete case analysis is a standard method of dealing with missing data, where all observations with incomplete data are removed, it has two significant drawbacks:
 - The cleaned sample may yield biased results to the extent that missing data are not missing completely at random (MCAR). It is assumed that missing data is not MCAR because the CRDC is self-reported. Thus, it is unknown whether there exists a systematic pattern of missing data.
 - Requiring complete cases can result in removing a large percentage of the sample. Estimates may be biased if the complete observations used in the analyses differ systematically to the incomplete observations. This issue becomes compounded as more observations are removed from the population.

Even though complete case analysis deletion often results in a significant decrease in the sample size available for the analyses, it can still be useful in estimating population parameters. If the number of missing cases is negligible, then it is reasonable to assume that the data could be MCAR. But, there is no way of discerning the relationship between the number of missing cases and whether they are MCAR. It is important to acknowledge that although over 89% of the original sample was maintained for each enrollment analyses, some degree of bias may have been introduced.

¹³ Pigott, T.D. (2001). A Review of Method for Missing Data. Educational Research and Evaluation, 7, 353-383.

3. The CRDC did not contain any data identifying a charter school's legal status. As a result, CEP used several variables from the Common Core of Data (CCD) Local Education Agency Universe file to establish a criterion for determining legal status. It is important to note that determining charter legal status is difficult because of within-state and across state nuances. For instance, In California a charter school can be considered an independent LEA for fiscal purposes (all non-special education funding), but part of an LEA for special education purposes. It could also be an independent LEA for both purposes. Because a charter's legal status may differ depending on the criteria used, CEP's criteria to assign legal status may not account for how states define charter legal status.
4. It is possible that the discipline rates provided in this report are biased. The sample of schools used for each discipline analyses vary as a result of differences in the amount of missing and/or not applicable values for each discipline category. CEP did not compare the enrollment characteristics of schools removed from each discipline analyses to the schools that remained. Because privacy protected data denote values of two or below, it is possible that the discipline rates are inflated if the schools removed from the analyses due to privacy protected values had larger enrollments relative to the schools remaining in the analysis.
5. Hypothesis testing was conducted to check the significance of the differences observed for most statistics reported in the paper. However, not all data was statistically tested given the non-availability of raw data for certain variables. In particular, we were unable to calculate the significance of the differences seen in the 2013-14 data for enrollment by educational placement. We were also not able to calculate the significance of the differences among the 2011-12 and 2013-14 data for enrollment by educational placement and overall expulsions and suspensions.
6. Finally, the development of the list of specialized charter schools is cumulative in nature in that we are drawing from prior research and expanding and verifying the list based on schools that self-identify or enroll a disproportionately large percentage of students with disabilities (i.e., 50%) relative to the national average of 12%. Further limiting the development of the list is the practical reality that many of the schools do not maintain up to date or information rich websites that facilitate ready verification of the schools existence or details regarding its mission.