

NAEP 2006 NONRESPONSE BIAS ANALYSIS REPORT

Authors:

Sarah Henry
Jennifer Kali
Valerie Hsu
Leslie Wallace

August 18, 2006

Prepared by:

WESTAT
1650 Research Boulevard
Rockville, Maryland 20850

Contract No.
Deliverable for NCES

TABLE OF CONTENTS

<u>Chapter</u>		<u>Page</u>
1	SCHOOL NONRESPONSE BIAS ANALYSIS	1-1
2	STUDENT NONRESPONSE BIAS ANALYSIS	2-1
	REFERENCES	R-1

List of Appendices

<u>Appendix</u>		
A	SCHOOL TABLES	A-1
B	STUDENT TABLES	B-1

List of Tables

<u>Table</u>		
1	SCHOOL RESPONSE RATES	1-1
2	HI GRADE 4 PRIVATE.....	1-2
3	OP GRADE 4 PRIVATE.....	1-2
4	HI GRADE 8 PRIVATE.....	1-2
5	OP GRADE 8 PRIVATE.....	1-3
6	HI GRADE 12 PRIVATE.....	1-3
7	OP GRADE 12 PRIVATE.....	1-3
8	HI GRADE 12 PUBLIC	1-3
9	OP GRADE 12 PUBLIC	1-3
10	STUDENT RESPONSE RATES.....	2-1
11	HI GRADE 12 PUBLIC	2-2
12	OP GRADE 12 PUBLIC	2-2

1. SCHOOL NONRESPONSE BIAS ANALYSIS

Weighted school response rates for 2006 NAEP indicate that school response rates fall below 85 percent for all private schools and grade 12 public schools. Public school response rates for grades 4 and 8 were above 85 percent for the nation. Response rates are shown in Table 1 below. Thus, NCES statistical standards call for nonresponse bias analyses to be conducted for the samples with response rates below 85 percent. This report provides nonresponse bias analysis results for private schools at all three grade levels (by session type) and grade 12 public schools (by session type).

Table 1. School Response Rates

Grade	Session	Subject	Public	Private
4	OP	Civics	95.43	61.35
	HI	History	93.35	69.97
8	OP	Civics	95.48	62.36
	HI	History	93.53	63.10
12	OP	Civics	83.19	40.94
	OP	Economics	83.19	40.94
	HI	History	83.23	45.99

The school analysis for 2006 NAEP was conducted in three parts. First, the distribution of the responding original school sample was compared with that of the entire eligible original school sample. In each case schools were weighted by their school base weights and their enrollment. The original sample is the sample before substitution. Various characteristics of the schools were considered. Second, the distribution of the responding sample, including participating substitutes was compared to the full sample (but in this case, substitutes were included in place of those nonrespondents that they replaced). Again, school base weights were used for both the full sample and the respondents. Third, the same sets of schools were compared as in the second analysis, but this time when analyzing the responding schools alone, school nonresponse adjustments were applied to the weights. Thus, the first analysis indicates the potential for nonresponse bias that was introduced through school nonresponse. The second analysis suggests the remaining potential for nonresponse bias after the mitigating effects of substitution have been accounted for. The third analysis indicates the potential for bias after accounting for the mitigating effects of both substitution and nonresponse weight adjustments. Both the second and third analyses, however, may provide an overly optimistic scenario, since even though substitution and nonresponse adjustments may correct somewhat for deficiencies in the few characteristics examined here, there is no guarantee that they are equally as effective for other characteristics, and in particular for student achievement.

Each of these analyses compared schools on the distributions of schools by Census region, type of private school, type of location, and school size, where size was treated as three categories. The size category boundaries were set so as to place about one-third of the sampled schools for the grade in each category. For these analyses chi-square tests of the association between school response status and the particular variable under consideration were conducted. These tests were carried out using procedures that appropriately account for the complex sample design used in NAEP, and the weighting procedures. The p-values for these chi-square tests are presented in the tables. In addition we considered weighted mean values of race/ethnicity enrollment percentages for responding and nonresponding schools, as well as mean size of enrollment in the respective grades. Differences between the means for the respondents and full sample were tested using t-tests. These tests also took account of the complex sample design, as well as the fact that of course the respondents are a subset of the full sample (thus in that sense the first two sets of comparisons, using only school base weights, are equivalent to testing whether the mean for respondents is significantly different from the mean for nonrespondents). The p-values of these t-tests are reported in the accompanying tables.

The results of these analyses are presented and summarized below.

Table 2. HI Grade 4 Private

Analysis	Characteristics with p-values less than 0.05
Original Sample	Census Region, Private School Reporting Subgroup, Race/Ethnicity
Sample with Substitutes	Census Region, Private School Reporting Subgroup, Race/Ethnicity
Nonresponse Adjusted	Private School Reporting Subgroup

Table 3. OP Grade 4 Private

Analysis	Characteristics with p-values less than 0.05
Original Sample	Census Region, Private School Reporting Subgroup, Race/Ethnicity
Sample with Substitutes	Census Region, Private School Reporting Subgroup, Size, Race/Ethnicity
Nonresponse Adjusted	Size, Race/Ethnicity

Table 4. HI Grade 8 Private

Analysis	Characteristics with p-values less than 0.05
Original Sample	Private School Reporting Subgroup, Estimated Grade Enrollment, Race/Ethnicity
Sample with Substitutes	Census Region, Private School Reporting Subgroup, Race/Ethnicity
Nonresponse Adjusted	None

Table 5. OP Grade 8 Private

Analysis	Characteristics with p-values less than 0.05
Original Sample	Private School Reporting Subgroup, Size, Estimated Grade Enrollment
Sample with Substitutes	Census Region, Private School Reporting Subgroup, Race/Ethnicity
Nonresponse Adjusted	None

Table 6. HI Grade 12 Private

Analysis	Characteristics with p-values less than 0.05
Original Sample	Private School Reporting Subgroup
Sample with Substitutes	Private School Reporting Subgroup, Race/Ethnicity
Nonresponse Adjusted	Race/Ethnicity

Table 7. OP Grade 12 Private

Analysis	Characteristics with p-values less than 0.05
Original Sample	Private School Reporting Subgroup
Sample with Substitutes	Private School Reporting Subgroup, Race/Ethnicity
Nonresponse Adjusted	Race/Ethnicity

Table 8. HI Grade 12 Public

Analysis	Characteristics with p-values less than 0.05
Original Sample	Census Region, Type of Location, Size, Estimated Grade Enrollment, Race/Ethnicity
Sample with Substitutes	Census Region, Estimated Grade Enrollment, Race/Ethnicity
Nonresponse Adjusted	None

Table 9. OP Grade 12 Public

Analysis	Characteristics with p-values less than 0.05
Original Sample	Census Region, Size, Estimated Grade Enrollment, Race/Ethnicity
Sample with Substitutes	Census Region, Estimated Grade Enrollment, Race/Ethnicity
Nonresponse Adjusted	None

Overall, nonresponse adjustments decreased the number of variables with significant differences. For grade 8 private and grade 12 public, substitution and nonresponse adjustment appear to have been at least partially effective in reducing the nonresponse bias, as there are no significant results for these samples after substitution and nonresponse adjustment. For grade 12 private, the significant race/ethnicity results are for the percent Hispanic estimates. The absolute biases are small—2-3 percent on estimates of about 7 percent—but the relative biases are large.

For HI (history) grade 4 private, reporting subgroup (Catholic/nonCatholic) remains significant. The original sample estimates about 46 percent of the students attend Catholic schools, while after substitution and nonresponse adjustment, this estimate is 58 percent. Using the original sample respondents, the estimate is 67 percent. Thus it seems that Catholic schools respond at a higher rate than nonCatholic schools, and this discrepancy is not entirely accounted for by substitution and nonresponse adjustment. These results are based on 36 cooperating schools for HI grade 4 private.

For OP grade 4 private, school size and race/ethnicity (percent White, not Hispanic) remain significant. Regarding the size result, the original sample estimates about 53 percent of students attend large schools (with more than 30 grade 4 students) and 20 percent attend small schools (with less than 20 students). After substitution and nonresponse adjustment, these estimates are 43 percent (for large schools) and 26 percent (for small schools). Regarding the race/ethnicity result, the original sample estimates about 75 percent of the students are White (not Hispanic), while after substitution and nonresponse adjustment, this estimate is 69 percent.

2. STUDENT NONRESPONSE BIAS ANALYSIS

Weighted student response rates for 2006 NAEP indicate that response rates for students in grade 12 public schools fall below 85 percent within participating schools. The respective response rates are shown in Table 1 below. Thus, NCES statistical standards call for nonresponse bias analyses to be conducted for this group. This report provides nonresponse bias analysis results for these grade 12 students (by session).

Table 10 Student Response Rates

Grade	Session	Subject	Public	Private
4	OP	Civics	94.42	97.21
	HI	History	95.26	96.26
8	OP	Civics	91.51	94.42
	HI	History	92.11	96.33
12	OP	Civics	71.51	85.51
	OP	Economics	71.94	86.96
	HI	History	72.30	87.21

The analysis of student nonresponse bias for operational assessments in the 2006 NAEP was conducted in two parts, first using the student base weights, and second using the nonresponse adjusted student weights for the estimates based only on respondents. Various characteristics of the students were considered. Thus the first analysis indicates the potential for nonresponse bias that was introduced through student nonresponse. The second analysis indicates the potential for bias after accounting for the effects of nonresponse weight adjustments. The second analysis, however, may provide an overly optimistic scenario, since even though nonresponse adjustments may correct somewhat for deficiencies in the few characteristics examined here, there is no guarantee that they are equally as effective for other characteristics, and in particular for student achievement.

Each of these analyses compared students on the distributions of students by sex, race, relative age, school lunch eligibility, SD status, ELL status, and subject. For these analyses chi-square tests of the association between student response status and the particular variable under consideration were conducted. These tests were carried out using procedures that appropriately account for the complex sample design used in NAEP, and the weighting procedures. The p-values for these chi-square tests are presented in the accompanying tables.

The results of these analyses are presented and summarized by student group type below.

Table 11. HI Grade 12 Public

Analysis	Characteristics with p-values less than 0.05
Student Base Weights	Relative Age, Free Lunch Eligibility, SD
Nonresponse Adjusted Student Weights	Relative Age, ELL

Table 13. OP Grade 12 Public

Analysis	Characteristics with p-values less than 0.05
Student Base Weights	Relative Age, Free Lunch Eligibility, SD
Nonresponse Adjusted Student Weights	Race, Relative Age, Free Lunch Eligibility

The sample sizes are large for grade 12 public schools, which makes the tests very sensitive. For all of the significant variables, the percentage difference is actually very small, one percent or less. Relative age is significant for both sessions before and after nonresponse adjustment.

REFERENCES

- Rao, J.N.K., and Scott, A.J. (1981). The Analysis of Categorical Data from Complex Sample Surveys: Chi-Squared Tests for Goodness of Fit and Independence in Two-Way Tables. *Journal of the American Statistical Association*, 76, 221-230.
- Westat (2002). *WesVar 4.2 User's Guide*. Rockville, MD: Westat, Inc.

Appendix A

Table 1. 2006 NAEP HI Grade 4 original sample - Percentages of full sample and responding schools by various subgroups weighted by school base weight - All Private Schools (sample size = 79)

	Full sample weighted percentage	Respondent weighted percentage	Bias	Relative bias	Chi- square p-value
Census Region					0.038
Northeast	28.34	37.51	9.2	0.324	
Midwest	19.30	16.69	-2.6	-0.135	
South	32.30	24.70	-7.6	-0.235	
West	20.06	21.10	1.0	0.052	
Private School Reporting Subgroup					0.000
Roman Catholic	45.80	66.50	20.7	0.452	
Non-Catholic Private	54.20	33.50	-20.7	-0.382	
Type of Location					0.736
Central City	45.77	48.58	2.8	0.061	
Urban Fringe/Large City	42.04	40.89	-1.2	-0.027	
Small Town/Rural	12.19	10.54	-1.7	-0.135	
Size					0.796
Large (> 33)	46.60	46.73	0.1	0.003	
Medium (18-33)	31.39	33.35	2.0	0.062	
Small (< 18)	22.00	19.91	-2.1	-0.095	

Table 2. 2006 NAEP HI Grade 4 original sample - Weighted mean values of various characteristics for full sample and responding schools - All Private Schools

	Full Sample mean	Respondent mean	Bias	Relative bias	T-test p-value
Estimated Grade Enrollment	36.16	35.21	-0.9	-0.026	0.733
Race/Ethnicity					
Percentage White, not Hispanic	70.96	63.26	-7.7	-0.109	0.011
Percentage Black, not Hispanic	12.64	16.30	3.7	0.290	0.032
Percentage Hispanic Heritage	11.26	15.34	4.1	0.362	0.034
Percentage Asian/Pacific Islander	4.91	4.94	0.0*	0.006	0.980
Percentage American Indian/Alaskan Native	0.22	0.16	-0.1	-0.273	0.551

*Estimate rounds to zero

Table 3. 2006 NAEP OP Grade 4 original sample - Percentages of full sample and responding schools by various subgroups weighted by school base weight - All Private Schools (sample size = 109)

	Full sample weighted percentage	Respondent weighted percentage	Bias	Relative bias	Chi- square p-value
Census Region					0.037
Northeast	20.70	25.68	5.0	0.241	
Midwest	26.95	28.82	1.9	0.069	
South	30.24	21.09	-9.2	-0.303	
West	22.11	24.41	2.3	0.104	
Private School Reporting Subgroup					0.000
Roman Catholic	47.65	70.30	22.7	0.475	
Non-Catholic Private	52.35	29.70	-22.7	-0.433	
Type of Location					0.949
Central City	42.01	42.69	0.7	0.016	
Urban Fringe/Large City	44.05	44.05	0.0	0.000	
Small Town/Rural	13.95	13.27	-0.7	-0.049	
Size					0.278
Large (> 30)	52.55	51.91	-0.6	-0.012	
Medium (19-30)	27.79	32.01	4.2	0.152	
Small (< 19)	19.66	16.09	-3.6	-0.182	

Table 4. 2006 NAEP OP Grade 4 original sample - Weighted mean values of various characteristics for full sample and responding schools - All Private Schools

	Full Sample mean	Respondent mean	Bias	Relative bias	T-test p-value
Estimated Grade Enrollment	37.33	37.04	-0.3	-0.008	0.916
Race/Ethnicity					
Percentage White, not Hispanic	75.49	70.45	-5.0	-0.067	0.007
Percentage Black, not Hispanic	5.58	5.04	-0.5	-0.097	0.481
Percentage Hispanic Heritage	12.19	16.84	4.7	0.381	0.002
Percentage Asian/Pacific Islander	5.73	6.23	0.5	0.087	0.610
Percentage American Indian/Alaskan Native	1.01	1.43	0.4	0.416	0.354

Table 5. 2006 NAEP HI Grade 4 sample with substitutes - Percentages of full sample and responding schools by various subgroups weighted by school base weight - All Private schools (sample size = 60)

	Full sample weighted percentage	Respondent weighted percentage	Bias	Relative bias	Chi- square p-value
Census Region					0.041
Northeast	29.32	34.01	4.7	0.160	
Midwest	16.94	18.15	1.2	0.071	
South	30.75	22.40	-8.4	-0.272	
West	22.98	25.45	2.5	0.107	
Private School Reporting Subgroup					0.001
Roman Catholic	48.11	60.30	12.2	0.253	
Non-Catholic Private	51.89	39.70	-12.2	-0.235	
Type of Location					0.586
Central City	48.10	47.05	-1.1	-0.022	
Urban Fringe/Large City	40.54	43.39	2.9	0.070	
Small Town/Rural	11.35	9.55	-1.8	-0.159	
Size					0.709
Large (> 33)	51.29	48.69	-2.6	-0.051	
Medium (18-33)	29.03	30.24	1.2	0.042	
Small (< 18)	19.68	21.06	1.4	0.070	

Table 6. 2006 NAEP HI Grade 4 sample with substitutes - Weighted mean values of various characteristics for full sample and responding schools - All Private Schools

	Full sample mean with substitutes	Respondent mean	Bias	Relative bias	T-test p-value
Estimated Grade Enrollment	37.83	34.82	-3.0	-0.080	0.295
Race/Ethnicity					
Percentage White, not Hispanic	71.55	66.73	-4.8	-0.067	0.023
Percentage Black, not Hispanic	12.80	14.79	2.0	0.155	0.088
Percentage Hispanic Heritage	11.32	13.87	2.6	0.225	0.056
Percentage Asian/Pacific Islander	4.11	4.46	0.4	0.085	0.363
Percentage American Indian/Alaskan Native	0.22	0.15	-0.1	-0.318	0.446

Table 7. 2006 NAEP OP Grade 4 sample with substitutes - Percentages of full sample and responding schools by various subgroups weighted by school base weight - All Private Schools (sample size = 107)

	Full sample weighted percentage	Respondent weighted percentage	Bias	Relative Chi- square bias p-value
Census Region				0.010
Northeast	20.88	22.67	1.8	0.086
Midwest	27.51	31.80	4.3	0.156
South	30.88	23.19	-7.7	-0.249
West	20.73	22.33	1.6	0.077
Private School Reporting Subgroup				0.000
Roman Catholic	47.59	58.70	11.1	0.233
Non-Catholic Private	52.41	41.30	-11.1	-0.212
Type of Location				0.623
Central City	45.39	43.60	-1.8	-0.039
Urban Fringe/Large City	39.82	42.23	2.4	0.061
Small Town/Rural	14.79	14.16	-0.6	-0.043
Size				0.034
Large (> 30)	51.31	45.42	-5.9	-0.115
Medium (19-30)	27.72	31.94	4.2	0.152
Small (< 19)	20.97	22.64	1.7	0.080

Table 8. 2006 NAEP OP Grade 4 sample with substitutes - Weighted mean values of various characteristics for full sample and responding schools - All Private Schools

	Full sample mean with substitutes	Respondent mean	Bias	Relative bias	T-test p-value
Estimated Grade Enrollment	36.86	33.79	-3.1	-0.083	0.235
Race/Ethnicity					
Percentage White, not Hispanic	72.68	68.70	-4.0	-0.055	0.006
Percentage Black, not Hispanic	8.70	9.25	0.6	0.063	0.513
Percentage Hispanic Heritage	12.48	15.12	2.6	0.212	0.004
Percentage Asian/Pacific Islander	5.14	5.77	0.6	0.123	0.122
Percentage American Indian/Alaskan Native	0.99	1.16	0.2	0.172	0.490

Table 9. 2006 NAEP HI Grade 4 nonresponse adjusted sample - Percentages of full sample and responding schools with substitutes by various subgroups - All Private schools with substitutes (sample size = 60)

	Full sample weighted percentage	Respondent weighted percentage	Bias	Relative bias	Chi- square p-value
Census Region					0.465
Northeast	29.32	30.27	0.9	0.032	
Midwest	16.94	17.49	0.5	0.032	
South	30.75	28.48	-2.3	-0.074	
West	22.98	23.75	0.8	0.034	
Private School Reporting Subgroup					0.006
Roman Catholic	48.11	58.11	10.0	0.208	
Non-Catholic Private	51.89	41.89	-10.0	-0.193	
Type of Location					0.848
Central City	48.10	46.52	-1.6	-0.033	
Urban Fringe/Large City	40.54	42.79	2.3	0.056	
Small Town/Rural	11.35	10.69	-0.7	-0.058	
Size					0.535
Large (> 33)	51.29	48.62	-2.7	-0.052	
Medium (18-33)	29.03	28.74	-0.3	-0.010	
Small (< 18)	19.68	22.64	3.0	0.150	

Table 10. 2006 NAEP HI Grade 4 nonresponse adjusted sample - Weighted mean values of various characteristics for full sample and responding schools with substitutes - All Private Schools

	Full sample mean with substitutes	Respondent mean	Bias	Relative bias	T-test p-value
Estimated Grade Enrollment	37.83	34.63	-3.2	-0.085	0.281
Race/Ethnicity					
Percentage White, not Hispanic	71.55	67.66	-3.9	-0.054	0.074
Percentage Black, not Hispanic	12.80	14.29	1.5	0.116	0.254
Percentage Hispanic Heritage	11.32	13.47	2.2	0.190	0.072
Percentage Asian/Pacific Islander	4.11	4.44	0.3	0.080	0.322
Percentage American Indian/Alaskan Native	0.22	0.14	-0.1	-0.364	0.389

Table 11. 2006 NAEP OP Grade 4 nonresponse adjusted sample - Percentages of full sample and responding schools with substitutes by various subgroups - All Private schools with substitutes (sample size = 107)

	Full sample weighted percentage	Respondent weighted percentage	Bias	Relative bias	Chi- square p-value
Census Region					1.000
Northeast	20.88	20.92	0.0*	0.002	
Midwest	27.51	27.41	-0.1	-0.004	
South	30.88	31.15	0.3	0.009	
West	20.73	20.52	-0.2	-0.010	
Private School Reporting Subgroup					0.989
Conservative Christian	47.59	47.69	0.1	0.002	
Non-Catholic Private	52.41	52.31	-0.1	-0.002	
Type of Location					0.624
Central City	45.39	43.59	-1.8	-0.040	
Urban Fringe/Large City	39.82	42.48	2.7	0.067	
Small Town/Rural	14.79	13.93	-0.9	-0.058	
Size					0.023
Large (> 30)	51.31	42.68	-8.6	-0.168	
Medium (19-30)	27.72	31.44	3.7	0.134	
Small (< 19)	20.97	25.88	4.9	0.234	

Table 12. 2006 NAEP OP Grade 4 nonresponse adjusted sample - Weighted mean values of various characteristics for full sample and responding schools with substitutes - All Private Schools

	Full sample mean with substitutes	Respondent mean	Bias	Relative bias	T-test p-value
Estimated Grade Enrollment	36.86	32.31	-4.6	-0.123	0.111
Race/Ethnicity					
Percentage White, not Hispanic	72.68	68.59	-4.1	-0.056	0.023
Percentage Black, not Hispanic	8.70	10.85	2.2	0.247	0.111
Percentage Hispanic Heritage	12.48	14.33	1.9	0.148	0.064
Percentage Asian/Pacific Islander	5.14	5.03	-0.1	-0.021	0.614
Percentage American Indian/Alaskan Native	0.99	1.20	0.2	0.212	0.484

*Estimate rounds to zero

Table 13. 2006 NAEP HI Grade 8 original sample - Percentages of full sample and responding schools by various subgroups weighted by school base weight - All Private Schools (sample size = 95)

	Full sample weighted percentage	Respondent weighted percentage	Bias	Relative bias	Chi- square p-value
Census Region					0.517
Northeast	23.26	27.06	3.8	0.163	
Midwest	27.37	29.11	1.7	0.064	
South	30.85	26.96	-3.9	-0.126	
West	18.52	16.87	-1.7	-0.089	
Private School Reporting Subgroup					0.000
Roman Catholic	50.81	67.45	16.6	0.327	
Non-Catholic Private	49.19	32.55	-16.6	-0.338	
Type of Location					0.557
Central City	53.20	52.59	-0.6	-0.011	
Urban Fringe/Large City	37.56	40.20	2.6	0.070	
Small Town/Rural	9.24	7.21	-2.0	-0.220	
Size					0.155
Large (> 40)	46.26	39.36	-6.9	-0.149	
Medium (21-40)	31.34	36.22	4.9	0.156	
Small (< 21)	22.40	24.42	2.0	0.090	

Table 14. 2006 NAEP HI Grade 8 original sample - Weighted mean values of various characteristics for full sample and responding schools - All Private Schools

	Full Sample mean	Respondent mean	Bias	Relative bias	T-test p-value
Estimated Grade Enrollment	45.69	37.16	-8.5	-0.187	0.048
Race/Ethnicity					
Percentage White, not Hispanic	73.56	67.40	-6.2	-0.084	0.006
Percentage Black, not Hispanic	10.50	13.01	2.5	0.239	0.085
Percentage Hispanic Heritage	10.78	13.69	2.9	0.270	0.042
Percentage Asian/Pacific Islander	4.31	5.42	1.1	0.258	0.117
Percentage American Indian/Alaskan Native	0.85	0.49	-0.4	-0.424	0.419

Table 15. 2006 NAEP OP Grade 8 original sample - Percentages of full sample and responding schools by various subgroups weighted by school base weight - All Private Schools (sample size = 124)

	Full sample weighted percentage	Respondent weighted percentage	Bias	Relative bias	Chi- square p-value
Census Region					0.440
Northeast	21.95	24.95	3.0	0.137	
Midwest	29.38	32.27	2.9	0.098	
South	30.95	27.16	-3.8	-0.122	
West	17.72	15.61	-2.1	-0.119	
Private School Reporting Subgroup					0.000
Roman Catholic	50.43	66.72	16.3	0.323	
Non-Catholic Private	49.57	33.28	-16.3	-0.329	
Type of Location					0.595
Central City	47.45	43.51	-3.9	-0.083	
Urban Fringe/Large City	39.31	42.95	3.6	0.093	
Small Town/Rural	13.24	13.55	0.3	0.023	
Size					0.036
Large (> 34)	53.93	46.21	-7.7	-0.143	
Medium (19-34)	25.09	30.94	5.9	0.233	
Small (< 19)	20.98	22.85	1.9	0.089	

Table 16. 2006 NAEP OP Grade 8 original sample - Weighted mean values of various characteristics for full sample and responding schools - All Private Schools

	Full Sample mean	Respondent mean	Bias	Relative bias	T-test p-value
Estimated Grade Enrollment	45.00	36.16	-8.8	-0.196	0.047
Race/Ethnicity					
Percentage White, not Hispanic	79.96	77.50	-2.5	-0.031	0.076
Percentage Black, not Hispanic	7.24	7.86	0.6	0.086	0.476
Percentage Hispanic Heritage	7.93	9.18	1.3	0.158	0.188
Percentage Asian/Pacific Islander	3.73	4.49	0.8	0.204	0.205
Percentage American Indian/Alaskan Native	1.15	0.97	-0.2	-0.157	0.563

Table 17. 2006 NAEP HI Grade 8 sample with substitutes - Percentages of full sample and responding schools by various subgroups weighted by school base weight - All Private Schools (sample size = 89)

	Full sample weighted percentage	Respondent weighted percentage	Bias	Relative bias	Chi- square p-value
Census Region					0.014
Northeast	23.18	27.49	4.3	0.186	
Midwest	28.49	31.12	2.6	0.092	
South	30.34	22.83	-7.5	-0.248	
West	17.99	18.56	0.6	0.032	
Private School Reporting Subgroup					0.003
Roman Catholic	51.17	59.59	8.4	0.165	
Non-Catholic Private	48.83	40.41	-8.4	-0.172	
Type of Location					0.265
Central City	50.26	47.96	-2.3	-0.046	
Urban Fringe/Large City	41.68	45.56	3.9	0.093	
Small Town/Rural	8.05	6.48	-1.6	-0.195	
Size					0.443
Large (> 40)	48.08	45.89	-2.2	-0.046	
Medium (21-40)	30.60	33.80	3.2	0.105	
Small (< 21)	21.32	20.31	-1.0	-0.047	

Table 18. 2006 NAEP HI Grade 8 sample with substitutes - Weighted mean values of various characteristics for full sample and responding schools - All Private Schools

	Full sample mean with substitutes	Respondent mean	Bias	Relative bias	T-test p-value
Estimated Grade Enrollment	45.81	42.04	-3.8	-0.082	0.284
Race/Ethnicity					
Percentage White, not Hispanic	72.79	69.49	-3.3	-0.045	0.031
Percentage Black, not Hispanic	9.95	11.52	1.6	0.158	0.036
Percentage Hispanic Heritage	11.06	11.69	0.6	0.057	0.499
Percentage Asian/Pacific Islander	5.73	6.74	1.0	0.176	0.033
Percentage American Indian/Alaskan Native	0.47	0.56	0.1	0.191	0.132

Table 19. 2006 NAEP OP Grade 8 sample with substitutes - Percentages of full sample and responding schools by various subgroups weighted by school base weight - All Private Schools (sample size = 124)

	Full sample weighted percentage	Respondent weighted percentage	Bias	Relative bias	Chi- square p-value
Census Region					0.023
Northeast	21.77	25.47	3.7	0.170	
Midwest	28.32	30.75	2.4	0.086	
South	30.68	23.70	-7.0	-0.228	
West	19.23	20.08	0.8	0.044	
Private School Reporting Subgroup					0.003
Roman Catholic	50.44	58.17	7.7	0.153	
Non-Catholic Private	49.56	41.83	-7.7	-0.156	
Type of Location					0.330
Central City	44.20	40.46	-3.7	-0.085	
Urban Fringe/Large City	42.27	46.07	3.8	0.090	
Small Town/Rural	13.53	13.47	-0.1	-0.004	
Size					0.084
Large (> 34)	52.39	49.33	-3.1	-0.058	
Medium (19-34)	27.23	31.48	4.3	0.156	
Small (< 19)	20.38	19.18	-1.2	-0.059	

Table 20. 2006 NAEP OP Grade 8 sample with substitutes - Weighted mean values of various characteristics for full sample and responding schools - All Private Schools

	Full sample mean with substitues	Respondent mean	Bias	Relative bias	T-test p-value
Estimated Grade Enrollment	44.05	40.04	-4.0	-0.091	0.222
Race/Ethnicity					
Percentage White, not Hispanic	77.23	75.26	-2.0	-0.026	0.078
Percentage Black, not Hispanic	7.41	8.24	0.8	0.112	0.032
Percentage Hispanic Heritage	8.46	8.39	-0.1	-0.008	0.926
Percentage Asian/Pacific Islander	5.20	6.01	0.8	0.156	0.013
Percentage American Indian/Alaskan Native	1.70	2.10	0.4	0.235	0.199

Table 21. 2006 NAEP HI Grade 8 nonresponse adjusted sample - Percentages of full sample and responding schools with substitutes by various subgroups - All Private schools with substitutes (sample size = 89)

	Full sample weighted percentage	Respondent weighted percentage	Bias	Relative bias	Chi- square p-value
Census Region					1.000
Northeast	23.18	23.15	0.0*	-0.001	
Midwest	28.49	28.50	0.0*	0.000	
South	30.34	30.09	-0.3	-0.008	
West	17.99	18.25	0.3	0.014	
Private School Reporting Subgroup					0.304
Roman Catholic	51.17	52.53	1.4	0.027	
Non-Catholic Private	48.83	47.47	-1.4	-0.028	
Type of Location					0.581
Central City	50.26	45.82	-4.4	-0.088	
Urban Fringe/Large City	41.68	45.41	3.7	0.089	
Small Town/Rural	8.05	8.77	0.7	0.089	
Size					0.800
Large (> 40)	48.08	46.30	-1.8	-0.037	
Medium (21-40)	30.60	30.56	0.0*	-0.001	
Small (< 21)	21.32	23.14	1.8	0.085	

Table 22. 2006 NAEP HI Grade 8 nonresponse adjusted sample - Weighted mean values of various characteristics for full sample and responding schools with substitutes - All Private Schools

	Full sample mean with substitutes	Respondent mean	Bias	Relative bias	T-test p-value
Estimated Grade Enrollment	45.81	41.86	-4.0	-0.086	0.310
Race/Ethnicity					
Percentage White, not Hispanic	72.79	69.93	-2.9	-0.039	0.086
Percentage Black, not Hispanic	9.95	12.13	2.2	0.219	0.095
Percentage Hispanic Heritage	11.06	11.01	-0.1	-0.005	0.952
Percentage Asian/Pacific Islander	5.73	6.33	0.6	0.105	0.220
Percentage American Indian/Alaskan Native	0.47	0.62	0.2	0.319	0.197

*Estimate rounds to zero.

Table 23. 2006 NAEP OP Grade 8 nonresponse adjusted sample - Percentages of full sample and responding schools with substitutes by various subgroups - All Private schools with substitutes (sample size = 124)

	Full sample weighted percentage	Respondent weighted percentage	Bias	Relative bias	Chi- square p-value
Census Region					1.000
Northeast	21.77	21.80	0.0*	0.001	
Midwest	28.32	28.12	-0.2	-0.007	
South	30.68	30.51	-0.2	-0.006	
West	19.23	19.57	0.3	0.018	
Private School Reporting Subgroup					0.990
Roman Catholic	50.44	50.53	0.1	0.002	
Non-Catholic Private	49.56	49.47	-0.1	-0.002	
Type of Location					0.514
Central City	44.20	40.49	-3.7	-0.084	
Urban Fringe/Large City	42.27	44.54	2.3	0.054	
Small Town/Rural	13.53	14.97	1.4	0.106	
Size					0.308
Large (> 34)	52.39	50.05	-2.3	-0.045	
Medium (19-34)	27.23	30.82	3.6	0.132	
Small (< 19)	20.38	19.14	-1.2	-0.061	

Table 24. 2006 NAEP OP Grade 8 nonresponse adjusted sample - Weighted mean values of various characteristics for full sample and responding schools with substitutes - All Private Schools

	Full sample mean with substitutes	Respondent mean	Bias	Relative bias	T-test p-value
Estimated Grade Enrollment	44.05	40.47	-3.6	-0.081	0.276
Race/Ethnicity					
Percentage White, not Hispanic	77.23	75.78	-1.5	-0.019	0.185
Percentage Black, not Hispanic	7.41	8.08	0.7	0.090	0.080
Percentage Hispanic Heritage	8.46	8.37	-0.1	-0.011	0.901
Percentage Asian/Pacific Islander	5.20	5.81	0.6	0.117	0.162
Percentage American Indian/Alaskan Native	1.70	1.96	0.3	0.153	0.118

*Estimate rounds to zero.

Table 25. 2006 NAEP HI Grade 12 original sample - Percentages of full sample and responding schools by various subgroups weighted by school base weight - All Private Schools (sample size = 121)

	Full sample weighted percentage	Respondent weighted percentage	Bias	Relative bias	Chi- square p-value
Census Region					0.357
Northeast	29.77	32.86	3.1	0.104	
Midwest	24.21	27.41	3.2	0.132	
South	28.25	20.45	-7.8	-0.276	
West	17.77	19.28	1.5	0.085	
Private School Reporting Subgroup					0.001
Roman Catholic	47.65	62.26	14.6	0.307	
Non-Catholic Private	52.35	37.74	-14.6	-0.279	
Type of Location					0.365
Central City	44.46	44.05	-0.4	-0.009	
Urban Fringe/Large City	42.97	47.38	4.4	0.103	
Small Town/Rural	12.57	8.57	-4.0	-0.318	
Size					0.648
Large (> 93)	54.27	58.29	4.0	0.074	
Medium (26-93)	30.95	27.49	-3.5	-0.112	
Small (< 26)	14.78	14.22	-0.6	-0.038	

Table 26. 2006 NAEP HI Grade 12 original sample - Weighted mean values of various characteristics for full sample and responding schools - All Private Schools

	Full Sample mean	Respondent mean	Bias	Relative bias	T-test p-value
Estimated Grade Enrollment	126.53	129.76	-3.2	-0.025	0.682
Race/Ethnicity					
Percentage White, not Hispanic	80.93	81.59	0.7	0.008	0.762
Percentage Black, not Hispanic	8.11	7.30	-0.8	-0.100	0.615
Percentage Hispanic Heritage	5.04	6.68	1.6	0.325	0.087
Percentage Asian/Pacific Islander	5.23	3.36	-1.9	-0.358	0.124
Percentage American Indian/Alaskan Native	0.69	1.07	0.4	0.551	0.344

Table 27. 2006 NAEP OP Grade 12 original sample - Percentages of full sample and responding schools by various subgroups weighted by school base weight - All Private Schools (sample size = 127)

	Full sample weighted percentage	Respondent weighted percentage	Bias	Relative bias	Chi- square p-value
Census Region					0.250
Northeast	30.75	33.41	2.7	0.087	
Midwest	24.82	29.81	5.0	0.201	
South	27.50	18.57	-8.9	-0.325	
West	16.93	18.22	1.3	0.076	
Private School Reporting Subgroup					0.000
Roman Catholic	50.29	68.35	18.1	0.359	
Non-Catholic Private	49.71	31.65	-18.1	-0.363	
Type of Location					0.705
Central City	45.63	44.89	-0.7	-0.016	
Urban Fringe/Large City	40.41	43.81	3.4	0.084	
Small Town/Rural	13.96	11.29	-2.7	-0.191	
Size					0.640
Large (> 89)	59.65	63.51	3.9	0.065	
Medium (24-89)	28.11	25.13	-3.0	-0.106	
Small (< 24)	12.25	11.36	-0.9	-0.073	

Table 28. 2006 NAEP OP Grade 12 original sample - Weighted mean values of various characteristics for full sample and responding schools - All Private Schools

	Full Sample mean	Respondent mean	Bias	Relative bias	T-test p-value
Estimated Grade Enrollment	131.72	139.28	7.6	0.057	0.419
Race/Ethnicity					
Percentage White, not Hispanic	81.16	81.87	0.7	0.009	0.800
Percentage Black, not Hispanic	7.44	5.97	-1.5	-0.198	0.379
Percentage Hispanic Heritage	5.26	7.36	2.1	0.399	0.140
Percentage Asian/Pacific Islander	5.56	3.88	-1.7	-0.302	0.221
Percentage American Indian/Alaskan Native	0.58	0.91	0.3	0.569	0.329

Table 29. 2006 NAEP HI Grade 12 sample with substitutes - Percentages of full sample and responding schools by various subgroups weighted by school base weight - All Private Schools (sample size = 114)

	Full sample weighted percentage	Respondent weighted percentage	Bias	Relative bias	Chi- square p-value
Census Region					0.174
Northeast	30.57	29.93	-0.6	-0.021	
Midwest	23.44	27.51	4.1	0.174	
South	28.78	21.80	-7.0	-0.243	
West	17.21	20.76	3.6	0.206	
Private School Reporting Subgroup					0.008
Roman Catholic	50.76	61.51	10.8	0.212	
Non-Catholic Private	49.24	38.49	-10.8	-0.218	
Type of Location					0.312
Central City	44.10	43.76	-0.3	-0.008	
Urban Fringe/Large City	44.95	48.82	3.9	0.086	
Small Town/Rural	10.95	7.42	-3.5	-0.322	
Size					0.738
Large (> 93)	54.34	56.96	2.6	0.048	
Medium (26-93)	29.76	28.43	-1.3	-0.045	
Small (< 26)	15.90	14.61	-1.3	-0.081	

Table 30. 2006 NAEP HI Grade 12 sample with substitutes - Weighted mean values of various characteristics for full sample and responding schools - All Private Schools

	Full sample mean with substitutes	Respondent mean	Bias	Relative bias	T-test p-value
Estimated Grade Enrollment	124.66	131.41	6.8	0.054	0.241
Race/Ethnicity					
Percentage White, not Hispanic	77.48	76.74	-0.7	-0.010	0.730
Percentage Black, not Hispanic	9.85	8.81	-1.0	-0.106	0.481
Percentage Hispanic Heritage	7.06	9.63	2.6	0.364	0.024
Percentage Asian/Pacific Islander	5.07	4.11	-1.0	-0.189	0.372
Percentage American Indian/Alaskan Native	0.54	0.71	0.2	0.315	0.367

Table 31. 2006 NAEP OP Grade 12 sample with substitutes - Percentages of full sample and responding schools by various subgroups weighted by school base weight - All Private Schools (sample size = 124)

	Full sample weighted percentage	Respondent weighted percentage	Bias	Relative Chi- square bias	p-value
Census Region					0.076
Northeast	31.27	29.46	-1.8	-0.058	
Midwest	23.73	28.83	5.1	0.215	
South	27.37	19.58	-7.8	-0.285	
West	17.62	22.12	4.5	0.255	
Private School Reporting Subgroup					0.004
Roman Catholic	52.64	64.32	11.7	0.222	
Non-Catholic Private	47.36	35.68	-11.7	-0.247	
Type of Location					0.553
Central City	45.29	44.43	-0.9	-0.019	
Urban Fringe/Large City	42.11	45.46	3.4	0.080	
Small Town/Rural	12.60	10.12	-2.5	-0.197	
Size					0.745
Large (> 89)	58.84	59.14	0.3	0.005	
Medium (24-89)	27.36	28.85	1.5	0.054	
Small (< 24)	13.81	12.02	-1.8	-0.130	

Table 32. 2006 NAEP OP Grade 12 sample with substitutes - Weighted mean values of various characteristics for full sample and responding schools - All Private Schools

	Full sample mean with substitues	Respondent mean	Bias	Relative bias	T-test p-value
Estimated Grade Enrollment	128.52	136.77	8.3	0.064	0.230
Race/Ethnicity					
Percentage White, not Hispanic	77.32	76.10	-1.2	-0.016	0.553
Percentage Black, not Hispanic	8.63	6.93	-1.7	-0.197	0.316
Percentage Hispanic Heritage	7.72	10.94	3.2	0.417	0.007
Percentage Asian/Pacific Islander	5.74	5.20	-0.5	-0.094	0.642
Percentage American Indian/Alaskan Native	0.60	0.82	0.2	0.367	0.267

Table 33. 2006 NAEP HI Grade 12 nonresponse adjusted sample - Percentages of full sample and responding schools with substitutes by various subgroups - All Private schools with substitutes (sample size = 114)

	Full sample weighted percentage	Respondent weighted percentage	Bias	Relative bias	Chi- square p-value
Census Region					0.512
Northeast	30.52	31.99	1.5	0.048	
Midwest	23.56	25.59	2.0	0.086	
South	28.74	23.51	-5.2	-0.182	
West	17.18	18.90	1.7	0.100	
Private School Reporting Subgroup					0.174
Roman Catholic	50.84	57.37	6.5	0.128	
Non-Catholic Private	49.16	42.63	-6.5	-0.133	
Type of Location					0.613
Central City	44.03	42.39	-1.6	-0.037	
Urban Fringe/Large City	45.03	48.79	3.8	0.083	
Small Town/Rural	10.94	8.82	-2.1	-0.194	
Size					1.000
Large (> 93)	54.25	54.17	-0.1	-0.001	
Medium (26-93)	29.71	29.77	0.1	0.002	
Small (< 26)	16.03	16.06	0.0*	0.002	

Table 34. 2006 NAEP HI Grade 12 nonresponse adjusted sample - Weighted mean values of various characteristics for full sample and responding schools with substitutes - All Private Schools

	Full sample mean	Respondent mean	Bias	Relative bias	T-test p-value
Estimated Grade Enrollment	124.47	126.53	2.1	0.017	0.827
Race/Ethnicity					
Percentage White, not Hispanic	77.48	76.05	-1.4	-0.018	0.545
Percentage Black, not Hispanic	9.85	9.59	-0.3	-0.026	0.871
Percentage Hispanic Heritage	7.06	9.63	2.6	0.364	0.045
Percentage Asian/Pacific Islander	5.07	4.08	-1.0	-0.195	0.315
Percentage American Indian/Alaskan Native	0.54	0.66	0.1	0.222	0.506

*Estimate rounds to zero.

Table 35. 2006 NAEP OP Grade 12 nonresponse adjusted sample - Percentages of full sample and responding schools with substitutes by various subgroups - All Private schools with substitutes (sample size = 124)

	Full sample weighted percentage	Respondent weighted percentage	Bias	Relative bias	Chi- square p-value
Census Region					0.789
Northeast	31.22	32.71	1.5	0.048	
Midwest	23.85	24.79	0.9	0.039	
South	27.33	23.20	-4.1	-0.151	
West	17.60	19.30	1.7	0.097	
Private School Reporting Subgroup					0.177
Roman Catholic	52.72	57.81	5.1	0.097	
Non-Catholic Private	47.28	42.19	-5.1	-0.108	
Type of Location					0.730
Central City	45.22	41.85	-3.4	-0.075	
Urban Fringe/Large City	42.20	45.77	3.6	0.085	
Small Town/Rural	12.58	12.38	-0.2	-0.016	
Size					0.515
Large (> 89)	58.74	55.09	-3.7	-0.062	
Medium (24-89)	27.31	31.79	4.5	0.164	
Small (< 24)	13.95	13.12	-0.8	-0.059	

Table 36. 2006 NAEP OP Grade 12 nonresponse adjusted sample - Weighted mean values of various characteristics for full sample and responding schools with substitutes - All Private Schools

	Full sample mean	Respondent mean	Bias	Relative bias	T-test p-value
Estimated Grade Enrollment	128.31	129.93	1.6	0.013	0.848
Race/Ethnicity					
Percentage White, not Hispanic	77.32	75.66	-1.7	-0.021	0.469
Percentage Black, not Hispanic	8.63	7.64	-1.0	-0.115	0.561
Percentage Hispanic Heritage	7.72	10.50	2.8	0.360	0.036
Percentage Asian/Pacific Islander	5.74	5.30	-0.4	-0.077	0.724
Percentage American Indian/Alaskan Native	0.60	0.90	0.3	0.500	0.358

Table 37. 2006 NAEP HI Grade 12 original sample - Percentages of full sample and responding schools by various subgroups weighted by school base weight - Public Schools (sample size = 604)

	Full sample weighted percentage	Respondent weighted percentage	Bias	Relative bias	Chi- square p-value
Census Region					0.000
Northeast	18.14	21.32	3.2	0.175	
Midwest	24.60	27.87	3.3	0.133	
South	33.83	33.14	-0.7	-0.020	
West	23.44	17.67	-5.8	-0.246	
Type of Location					0.043
Central City	26.27	25.75	-0.5	-0.020	
Urban Fringe/Large City	41.81	40.24	-1.6	-0.038	
Small Town/Rural	31.92	34.01	2.1	0.065	
Size					0.003
Large (> 419)	32.26	29.23	-3.0	-0.094	
Medium (219-419)	34.44	34.53	0.1	0.003	
Small (< 219)	33.30	36.24	2.9	0.088	

Table 38. 2006 NAEP HI Grade 12 original sample - Weighted mean values of various characteristics for full sample and responding schools - Public Schools

	Full Sample mean	Respondent mean	Bias	Relative bias	T-test p-value
Estimated Grade Enrollment	335.08	317.23	-17.9	-0.053	0.000
Race/Ethnicity					
Percentage White, not Hispanic	64.54	67.03	2.5	0.039	0.000
Percentage Black, not Hispanic	14.88	14.41	-0.5	-0.032	0.402
Percentage Hispanic Heritage	13.70	12.18	-1.5	-0.111	0.009
Percentage Asian/Pacific Islander	5.06	4.36	-0.7	-0.138	0.005
Percentage American Indian/Alaskan Native	1.82	2.02	0.2	0.110	0.160

Table 39. 2006 NAEP OP Grade 12 original sample - Percentages of full sample and responding schools by various subgroups weighted by school base weight - Public Schools (sample size = 614)

	Full sample weighted percentage	Respondent weighted percentage	Bias	Relative bias	Chi- square p-value
Census Region					0.000
Northeast	18.11	21.32	3.2	0.177	
Midwest	24.76	28.10	3.3	0.135	
South	33.76	33.06	-0.7	-0.021	
West	23.36	17.52	-5.8	-0.250	
Type of Location					0.061
Central City	26.57	26.11	-0.5	-0.017	
Urban Fringe/Large City	41.98	40.42	-1.6	-0.037	
Small Town/Rural	31.45	33.47	2.0	0.064	
Size					0.008
Large (> 413)	33.51	30.71	-2.8	-0.084	
Medium (211-413)	35.27	35.36	0.1	0.003	
Small (< 211)	31.22	33.92	2.7	0.086	

Table 40. 2006 NAEP OP Grade 12 original sample - Weighted mean values of various characteristics for full sample and responding schools - Public Schools

	Full Sample mean	Respondent mean	Bias	Relative bias	T-test p-value
Estimated Grade Enrollment	337.46	319.93	-17.5	-0.052	0.001
Race/Ethnicity					
Percentage White, not Hispanic	64.52	67.03	2.5	0.039	0.000
Percentage Black, not Hispanic	14.91	14.44	-0.5	-0.032	0.416
Percentage Hispanic Heritage	13.86	12.36	-1.5	-0.108	0.013
Percentage Asian/Pacific Islander	5.10	4.40	-0.7	-0.137	0.003
Percentage American Indian/Alaskan Native	1.61	1.76	0.2	0.093	0.178

Table 41. 2006 NAEP HI Grade 12 sample with substitutes - Percentages of full sample and responding schools by various subgroups weighted by school base weight - Public Schools (sample size = 604)

	Full sample weighted percentage	Respondent weighted percentage	Bias	Relative bias	Chi- square p-value
Census Region					0.000
Northeast	18.11	20.91	2.8	0.155	
Midwest	24.56	27.33	2.8	0.113	
South	33.74	33.34	-0.4	-0.012	
West	23.59	18.43	-5.2	-0.219	
Type of Location					0.488
Central City	26.36	26.00	-0.4	-0.014	
Urban Fringe/Large City	41.97	41.30	-0.7	-0.016	
Small Town/Rural	31.68	32.70	1.0	0.032	
Size					0.082
Large (> 419)	32.46	30.92	-1.5	-0.047	
Medium (219-419)	34.50	34.25	-0.3	-0.007	
Small (< 219)	33.05	34.83	1.8	0.054	

Table 42. 2006 NAEP HI Grade 12 sample with substitutes - Weighted mean values of various characteristics for full sample and responding schools - Public Schools

	Full sample mean with substitues	Respondent mean	Bias	Relative bias	T-test p-value
Estimated Grade Enrollment	336.80	327.02	-9.8	-0.029	0.015
Race/Ethnicity					
Percentage White, not Hispanic	64.72	66.85	2.1	0.033	0.001
Percentage Black, not Hispanic	14.66	14.28	-0.4	-0.026	0.486
Percentage Hispanic Heritage	13.76	12.43	-1.3	-0.097	0.020
Percentage Asian/Pacific Islander	5.06	4.50	-0.6	-0.111	0.016
Percentage American Indian/Alaskan Native	1.80	1.93	0.1	0.072	0.232

Table 43. 2006 NAEP OP Grade 12 sample with substitutes - Percentages of full sample and responding schools by various subgroups weighted by school base weight - Public Schools (sample size = 614)

	Full sample weighted percentage	Respondent weighted percentage	Bias	Relative bias	Chi- square p-value
Census Region					0.000
Northeast	18.12	20.92	2.8	0.155	
Midwest	24.78	27.59	2.8	0.113	
South	33.71	33.30	-0.4	-0.012	
West	23.40	18.19	-5.2	-0.223	
Type of Location					0.510
Central City	26.59	26.26	-0.3	-0.012	
Urban Fringe/Large City	41.96	41.29	-0.7	-0.016	
Small Town/Rural	31.45	32.45	1.0	0.032	
Size					0.169
Large (> 413)	33.56	32.18	-1.4	-0.041	
Medium (211-413)	35.22	35.09	-0.1	-0.004	
Small (< 211)	31.22	32.73	1.5	0.048	

Table 44. 2006 NAEP OP Grade 12 sample with substitutes - Weighted mean values of various characteristics for full sample and responding schools - Public Schools

	Full sample mean with substitutes	Respondent mean	Bias	Relative bias	T-test p-value
Estimated Grade Enrollment	337.79	328.13	-9.7	-0.029	0.017
Race/Ethnicity					
Percentage White, not Hispanic	64.76	66.90	2.1	0.033	0.001
Percentage Black, not Hispanic	14.66	14.28	-0.4	-0.026	0.479
Percentage Hispanic Heritage	13.90	12.59	-1.3	-0.094	0.022
Percentage Asian/Pacific Islander	5.08	4.52	-0.6	-0.110	0.008
Percentage American Indian/Alaskan Native	1.62	1.72	0.1	0.062	0.264

Table 45. 2006 NAEP HI Grade 12 nonresponse adjusted sample - Percentages of full sample and responding schools with substitutes by various subgroups - Public schools with substitutes (sample size = 604)

	Full sample weighted percentage	Respondent weighted percentage	Bias	Relative bias	Chi- square p-value
Census Region					1.000
Northeast	18.11	18.11	0.0*	0.000	
Midwest	24.56	24.55	0.0*	0.000	
South	33.74	33.73	0.0*	0.000	
West	23.59	23.61	0.0*	0.001	
Type of Location					1.000
Central City	26.36	26.36	0.0*	0.000	
Urban Fringe/Large City	41.97	41.97	0.0*	0.000	
Small Town/Rural	31.68	31.67	0.0*	0.000	
Size					0.487
Large (> 419)	32.46	32.76	0.3	0.009	
Medium (219-419)	34.50	33.55	-1.0	-0.028	
Small (< 219)	33.05	33.69	0.6	0.019	

Table 46. 2006 NAEP HI Grade 12 nonresponse adjusted sample - Weighted mean values of various characteristics for full sample and responding schools with substitutes - Public Schools

	Full sample mean	Respondent mean	Bias	Relative bias	T-test p-value
Estimated Grade Enrollment	336.80	333.71	-3.1	-0.009	0.346
Race/Ethnicity					
Percentage White, not Hispanic	64.72	65.93	1.2	0.019	0.104
Percentage Black, not Hispanic	14.66	13.86	-0.8	-0.055	0.148
Percentage Hispanic Heritage	13.76	13.45	-0.3	-0.023	0.566
Percentage Asian/Pacific Islander	5.06	4.71	-0.4	-0.069	0.076
Percentage American Indian/Alaskan Native	1.80	2.06	0.3	0.144	0.184

*Estimate rounds to zero.

Table 47. 2006 NAEP OP Grade 12 nonresponse adjusted sample - Percentages of full sample and responding schools with substitutes by various subgroups - Public schools with substitutes (sample size = 614)

	Full sample weighted percentage	Respondent weighted percentage	Bias	Relative bias	Chi- square p-value
Census Region					1.000
Northeast	18.12	18.11	0.0*	-0.001	
Midwest	24.78	24.77	0.0*	0.000	
South	33.71	33.69	0.0*	-0.001	
West	23.40	23.42	0.0*	0.001	
Type of Location					1.000
Central City	26.59	26.59	0.0*	0.000	
Urban Fringe/Large City	41.96	41.97	0.0*	0.000	
Small Town/Rural	31.45	31.44	0.0*	0.000	
Size					0.515
Large (> 413)	33.56	33.77	0.2	0.006	
Medium (211-413)	35.22	34.28	-0.9	-0.027	
Small (< 211)	31.22	31.95	0.7	0.023	

Table 48. 2006 NAEP OP Grade 12 nonresponse adjusted sample - Weighted mean values of various characteristics for full sample and responding schools with substitutes - Public Schools

	Full sample mean	Respondent mean	Bias	Relative bias	T-test p-value
Estimated Grade Enrollment	337.79	333.89	-3.9	-0.012	0.234
Race/Ethnicity					
Percentage White, not Hispanic	64.76	65.27	0.5	0.008	0.563
Percentage Black, not Hispanic	14.66	14.05	-0.6	-0.042	0.345
Percentage Hispanic Heritage	13.90	14.31	0.4	0.029	0.657
Percentage Asian/Pacific Islander	5.08	4.71	-0.4	-0.073	0.051
Percentage American Indian/Alaskan Native	1.62	1.65	0.0*	0.019	0.496

*Estimate rounds to zero.

Appendix B

Table 1. 2006 NAEP HI Public Grade 12 - Percentages of full sample and responding students by various subgroups (sample size = 13,842)

	Full sample weighted percentage	Respondent weighted percentage	Bias	Relative bias	Chi-square p-value
Sex					0.639
Male	49.34	49.50	0.2	0.003	
Female	50.66	50.50	-0.2	-0.003	
Race					0.656
White, not Hispanic	65.21	64.97	-0.2	-0.004	
Black, not Hispanic	13.55	13.83	0.3	0.021	
Hispanic Heritage	13.16	13.44	0.3	0.021	
Asian/Pacific Islander	5.48	5.26	-0.2	-0.040	
American Indian/Alaskan Native	2.05	1.95	-0.1	-0.049	
Other	0.56	0.55	0.0*	-0.018	
Relative Age					0.002
Old (Born before 10/87)	18.65	17.46	-1.2	-0.064	
Not old (Born on or after 10/87)	81.35	82.54	1.2	0.015	
Free Lunch Eligibility					0.000
Student Not Eligible	72.62	73.01	0.4	0.005	
Free or Reduced Lunch	24.48	24.79	0.3	0.013	
Missing	2.90	2.19	-0.7	-0.245	
SD					0.017
Yes	8.38	7.82	-0.6	-0.067	
No	91.61	92.18	0.6	0.006	
Information Not Available	0.01	0.00	0.0*	-1.000	
ELL					0.072
Yes	3.75	4.04	0.3	0.077	
No	96.23	95.96	-0.3	-0.003	
Missing	0.02	0.00	0.0*	-1.000	

*Estimate rounds to zero.

Table 2. 2006 NAEP OP Public Grade 12 - Percentages of full sample and responding students by various subgroups (sample size = 25,652)

	Full sample weighted percentage	Respondent weighted percentage	Bias	Relative bias	Chi-square p-value
Sex					0.233
Male	49.61	49.90	0.3	0.006	
Female	50.39	50.10	-0.3	-0.006	
Race					0.417
White, not Hispanic	65.01	64.95	-0.1	-0.001	
Black, not Hispanic	13.61	13.70	0.1	0.007	
Hispanic Heritage	13.70	13.74	0.0*	0.003	
Asian/Pacific Islander	5.40	5.54	0.1	0.026	
American Indian/Alaskan Native	1.59	1.34	-0.3	-0.157	
Other	0.68	0.73	0.0	0.074	
Relative Age					0.000
Old (Born before 10/87)	18.75	17.89	-0.9	-0.046	
Not old (Born on or after 10/87)	81.25	82.11	0.9	0.011	
Free Lunch Eligibility					0.000
Student Not Eligible	71.93	72.30	0.4	0.005	
Free or Reduced Lunch	24.93	25.46	0.5	0.021	
Missing	3.15	2.24	-0.9	-0.289	
SD					0.021
Yes	8.40	7.89	-0.5	-0.061	
No	91.58	92.11	0.5	0.006	
Information Not Available	0.02	0.00	0.0*	-1.000	
ELL					0.165
Yes	3.48	3.71	0.2	0.066	
No	96.51	96.29	-0.2	-0.002	
Missing	0.01	0.00	0.0*	-1.000	
Subject					0.371
Civics	44.43	44.26	-0.2	-0.004	
Economics	55.57	55.74	0.2	0.003	

*Estimate rounds to zero.

Table 3. 2006 NAEP HI Nonresponse Adjusted Public Grade 12 - Percentages of full sample and responding students by various subgroups (sample size = 13,842)

	Full sample weighted percentage	Respondent weighted percentage	Bias	Relative bias	Chi-square p- value
Sex					0.690
Male	49.34	49.25	-0.1	-0.002	
Female	50.66	50.75	0.1	0.002	
Race					0.065
White, not Hispanic	65.21	64.56	-0.6	-0.010	
Black, not Hispanic	13.55	13.59	0.0*	0.003	
Hispanic Heritage	13.16	13.71	0.6	0.042	
Asian/Pacific Islander	5.48	5.71	0.2	0.042	
American Indian/Alaskan Native	2.05	1.87	-0.2	-0.088	
Other	0.56	0.55	0.0	-0.018	
Relative Age					0.001
Old (Born before 10/87)	18.65	17.63	-1.0	-0.055	
Not old (Born on or after 10/87)	81.35	82.37	1.0	0.013	
Free Lunch Eligibility					0.108
Student Not Eligible	72.62	72.69	0.1	0.001	
Free or Reduced Lunch	24.48	24.76	0.3	0.011	
Missing	2.90	2.55	-0.4	-0.121	
SD					0.119
Yes	8.38	7.99	-0.4	-0.047	
No	91.61	92.01	0.4	0.004	
Information Not Available	0.01	0.00	0.0*	-1.000	
ELL					0.036
Yes	3.75	4.08	0.3	0.088	
No	96.23	95.92	-0.3	-0.003	
Missing	0.02	0.00	0.0*	-1.000	

*Estimate rounds to zero.

Table 4. 2006 NAEP OP Nonresponse Adjusted Public Grade 12 - Percentages of full sample and responding students by various subgroups (sample size = 25,652)

	Full sample weighted percentage	Respondent weighted percentage	Bias	Relative bias	Chi-square p- value
Sex					0.911
Male	49.61	49.60	0.0*	0.000	
Female	50.39	50.40	0.0*	0.000	
Race					0.046
White, not Hispanic	65.01	64.64	-0.4	-0.006	
Black, not Hispanic	13.61	13.62	0.0*	0.001	
Hispanic Heritage	13.70	13.76	0.1	0.004	
Asian/Pacific Islander	5.40	5.86	0.5	0.085	
American Indian/Alaskan Native	1.59	1.36	-0.2	-0.145	
Other	0.68	0.76	0.1	0.118	
Relative Age					0.001
Old (Born before 10/87)	18.75	18.31	-0.4	-0.023	
Old (Born on or after 10/87)	81.25	81.69	0.4	0.005	
Free Lunch Eligibility					0.008
Student Not Eligible	71.93	72.10	0.2	0.002	
Free or Reduced Lunch	24.93	25.31	0.4	0.015	
Missing	3.15	2.59	-0.6	-0.178	
SD					0.109
Yes	8.40	8.16	-0.2	-0.029	
No	91.58	91.84	0.3	0.003	
Information Not Available	0.02	0.00	0.0*	-1.000	
ELL					0.190
Yes	3.48	3.71	0.2	0.066	
No	96.51	96.29	-0.2	-0.002	
Missing	0.01	0.00	0.0*	-1.000	
Subject					0.501
Civics	44.43	44.29	-0.1	-0.003	
Economics	55.57	55.71	0.1	0.003	

*Estimate rounds to zero.