



2021 Bias Analysis

Sponsoring Washington State Agencies:
Health Care Authority - Division of Behavioral Health and Recovery
Department of Health
Office of Superintendent of Public Instruction
Liquor and Cannabis Board

Prepared by:
Looking Glass Analytics, Inc.
July 2022

Washington State Healthy Youth Survey 2021 Bias Analysis

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In collaboration with members of the Healthy Youth Survey Planning Committee

This report is available online at:

<https://www.askhys.net/Reports/BiasAnalysis>

Data from the 2021 Washington State Healthy Youth Survey and previous administrations of youth surveys in Washington were used in this publication.

The Healthy Youth Survey was administered by the Washington State Health Care Authority Division of Behavioral Health and Recovery, the Department of Health, the Office of the Superintendent of Public Instruction, and the Liquor and Cannabis Board. Healthy Youth Survey Planning Committee includes members of these state agencies and oversaw the implementation of the 2021 survey.

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Background

The Healthy Youth Survey (HYS) is Washington State's biennial survey of public school students in grades 6, 8, 10 and 12. Since 2002, HYS has been administered in the fall of even numbered years until 2020 when the survey was delayed for a year to 2021, due to an unexpected shift in school remote learning for COVID-19.

Schools are randomly selected into a state sample, but all schools with grades 6, 8, 10 or 12 can volunteer to participate, except for those operated in detention facilities. In this report, the total of all state sample and volunteer schools is called the census.

A simple random sample is generally considered the best method for generating accurate estimates for a larger population, in this case, students attending public schools in Washington State. However, a random sample does not guarantee a representative sample and because not all schools and students invited to participate in the state sample take the survey, we need to check if the participants do, in fact, represent the larger group.

Methods

To assess possible bias in the state sample or census results related to differences in which schools participate, we compared enrollment characteristics of:

- Participating and non-participating schools (school-level bias in overall representation).
- Schools that did and did not administer the removable questions on sexual behavior and sexual violence (school-level bias in results of the removable questions).

To assess possible bias in individual student responses and results, we compared HYS demographic and behavioral item responses for:

- Students who finished the survey and those who did not (student-level non-completion bias).

Statistical analyses were done using t-tests, Fisher's exact test, Chi-square tests, and Poisson regression. State sample analysis includes clustering at the school building level, but census results do not include clustering. Each section of this report includes its own detailed method section. Any finding described as being different, higher, lower, more likely or less likely are significant and have a p-value less than 0.05.

Conclusions

While there is evidence of some impact of bias in the data due to participation and completion patterns, the 2021 Healthy Youth Survey state sample and census results are generalizable to the majority of students in Washington State. State sample and census results may somewhat underrepresent students in alternative schools, schools with smaller enrollments, schools with higher percentages of highly mobile families, and schools with lower on-time graduation rates.

Census results may also somewhat underrepresent isolated/rural schools, schools with higher percentages of American Indian/Alaska Native students, and schools with higher percentages of students with disabilities.

Not all schools asked the removable sexual behavior and violence questions. However, schools that asked the removable questions were mostly similar to schools that did not ask them. For the census, the results for the removable questions may underrepresent schools with lower percentages of White students.

Not all students completed the survey. Students who did not complete it responded to survey questions differently than student who did complete it. For past HYS administrations, this finding meant that there was bias in how students responded to questions near the end of the survey. For 2021, the questions on the surveys for students in 8th grade and older were randomized to remove this bias. Questions asked of 6th graders were not randomized, so questions near the end of the 6th grade survey may not fully represent students getting lower grades in school, feeling unsafe at school, using marijuana, drinking alcohol, from a non-English speaking household, from a migrant household, who are Hispanic, or who are another race.

These findings are generalizable only to Washington State as a whole. They do not apply to smaller geographic areas such as counties or school districts. The smaller sample sizes for smaller geographic areas may be subject to different biases, for example, due to non-participating schools and students in a specific area.

Summary of School-Level Participation Bias

Participation in the 2021 HYS state sample was high among eligible schools (from 82% to 89% across grade levels). Participation in the census was also high, but lower than the state sample (72% to 75%).

Comparisons between state sample schools that participated and those that did not, found the following differences out of 105 tests:

- Alternative schools were less likely to participate.
- Non-participating schools had higher percentages of American Indian/Alaska Native, multi-racial, homeless, and highly mobile family enrollment and lower percentages of Hispanic/Latino, White, and multi-racial enrollment.
- Non-participating schools had lower on-time graduation rates.

Comparisons between census schools that participated and those that did not, found the following differences out of 105 tests:

- Alternative schools were less likely to participate.
- Urban schools were more likely to participate, and isolated/rural schools were less likely to participate.
- Non-participating schools had higher percentages of American Indian/Alaska Native, White, low income, migrant, highly mobile family, and disability enrollment and lower percentages of Asian, Hispanic/Latino, multi-racial, English language learning, and Section 504 plan enrollment.
- Non-participating schools had lower on-time graduation rates.

Demographic Differences among Schools that Did Not Participate in the State Sample and Census, 2021

Lower	Lower than schools that participated	Higher	Higher than schools that participated		Not significantly different	-	Not measured
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School Enrollment and Assessment Scores	State Grade 6	State Grade 8	State Grade 10	State Grade 12	Census Grade 6	Census Grade 8	Census Grade 10	Census Grade 12
Grade-level enrollment			Lower	Lower	Lower		Lower	Lower
% American Indian/Alaska Native				Higher	Higher	Higher	Higher	Higher
% Asian enrollment					Lower			Lower
% Hispanic/Latino	Lower				Lower			
% Native Hawaiian/Pacific Islander								
% Two or more race	Higher		Lower			Lower		
% White				Lower	Higher			
% English language learner					Lower			
% Homeless	Higher							
% Low income							Higher	
% Migrant							Higher	
% Highly mobile family	Higher			Higher	Higher	Higher	Higher	Higher
% Section 504 plan						Lower		
% Disabilities					Higher	Higher	Higher	
% Met English lang. arts standards	Higher		-				-	
% On-time Graduation	-	-	-	Lower	-	-	-	Lower

Summary of School-Level Removable Question Bias

School districts could choose to remove questions about sexual behavior and sexual violence in 2021. In the state sample, 52% to 67% of schools administered the removable questions, which was lower than the 2018 administration (around 80%).

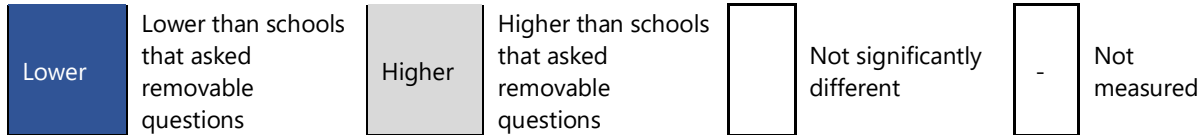
Comparisons between state sample schools that administered the removable questions and those that did not, showed the following differences out of 80 tests:

- Schools asking removable questions had higher percentages of Black/African American enrollment and lower percentages of multiracial enrollment.

Comparisons between census schools that administered the removable questions and those that did not, showed the following differences out of 80 tests:

- Large town schools were more likely to ask the removable questions.
- Schools asking removable questions had higher percentages of Asian, Black/African American, Hispanic, English language learner, and homeless enrollment and lower percentages of White enrollment.
- Schools asking removable questions had lower percentages of students that met science standards.

Demographic Differences among Schools that Did NOT Administer the Removable Questions in the State Sample and Census, 2021



School Enrollment and Assessment Scores	State Grade 8	State Grade 10	State Grade 12	Census Grade 8	Census Grade 10	Census Grade 12
% Asian				Lower		Lower
% Black/African American	Lower			Lower	Lower	Lower
% Hispanic/Latino					Lower	
% Two or more race		Higher				
% White				Higher	Higher	Higher
% English lang. learner					Lower	Lower
% Homeless				Lower		
% Met science standards	-	-		-	-	Higher

Summary of Student-Level Non-Completion Bias

In the state sample, between 83% to 84% of students in grades 6, 8, 10 and 12 “completed” the survey (responded to at least 85% of questions). Completion rates for the census were similar to the state sample, 81% to 85%.

Overall, students who didn’t completed 85% of the survey questions responded to survey questions differently than students who completed 85% or more of the survey questions. Non-completers were more likely to report:

- Lower grades in school and feeling unsafe at school.
- Mother didn’t graduate high school, family can’t afford housing, food insecurity, no dental visits in past year, and receive free/reduced price lunch.
- Past 30-day e-cigarettes/vape use, marijuana use, and alcohol drinking.
- Non-English spoken at home and migrant status.
- Being American Indian/Alaska Native, Black/African American, Hispanic, another non-white race/ethnicity, and multi-racial.

Differences between Non-Completers and Completers in the State Sample and Census, 2021

NC	Non-Completers: significantly higher	C	Completers: significantly higher		Not significantly different	-	Not measured
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Student Responses	State Grade 6	State Grade 8	State Grade 10	State Grade 12	Census Grade 6	Census Grade 8	Census Grade 10	Census Grade 12
Lower grades in school (C's, D's, F's)	NC	NC	NC	NC	NC	NC	NC	NC
Feeling unsafe at school	NC	NC	NC		NC	NC	NC	NC
Mother didn't graduate high school	-	NC		NC	-	NC	NC	NC
Family can't afford housing	-			NC	-		NC	NC
Food insecurity	-	NC	NC	NC	-	NC	NC	NC
No dental visit in last year	-	NC	NC		-	NC	NC	NC
30-day e-cig/vape use					NC	NC	NC	
30-day marijuana use	NC		NC		NC		NC	
30-day alcohol drinking	NC	NC			NC			C
Non-English spoken at home	NC	NC	NC	NC	NC	NC	NC	NC
Migrant	NC	NC	NC	NC	NC	NC	NC	NC
Disability					-			C
Asian AOIC	C	C			C	C	C	C
American Indian/Alaska Native AOIC		NC	NC		NC	NC	NC	
Black/African American AOIC		NC	NC	NC	NC	NC	NC	NC
Hispanic AOIC	NC	NC	NC	NC	NC	NC	NC	NC
Pacific Islander AOIC				NC		NC	NC	NC
White AOIC	C	C	C	C	C	C	C	C
Other race AOIC	NC	NC	NC	NC	NC	NC	NC	NC
Multiracial	C		NC		C	C		

Significant differences are based on 95% confidence intervals; highlighted squares are statistically significant at the $p < 0.05$ level

AOIC – Race/ethnic groups are reported for students who indicated they are of that particular race or ethnicity, either alone or in combination with another. An additional race category is also displayed that combines students who selected more than one group are reported as “more than one race/ethnicity marked”.

Introduction

This bias analysis was conducted to determine if the 2021 Healthy Youth Survey results can be generalized to Washington State Public School students.

The 2021 administration of the Healthy Youth Survey (2021 HYS) represents a collaborative effort among the Health Care Authority - Division of Behavioral Health and Recovery; the Department of Health; the Office of Superintendent of Public Instruction; the Liquor and Cannabis Board, and the contractor, Looking Glass Analytics, Inc. Representatives of these agencies served as members of the Healthy Youth Survey Planning Committee, who guided every aspect of the survey development and implementation.

Since 2002, HYS has been administered in the fall of even numbered years. The HYS 2020 survey was postponed to HYS 2021 (fall) due to the COVID pandemic. All Washington State public schools with grades 6, 8, 10 or 12 that were not based in a correctional institution and were able to administer the survey during a classroom period were eligible to participate. This included schools that needed to administer the survey to students learning remotely, a change from prior years.

A simple random sample of schools was selected into a state sample, though this information was not shared with schools and was not used during recruitment activities. Schools that were not selected for the state sample are termed "not drawn for the state sample." Schools that participated but were not selected into the state sample are termed "volunteer" schools. The combination of the state sampled schools and the volunteer non-sampled schools that participated are termed the "census".

For the state sample, the Washington State Department of Health drew three random samples: schools with grade 6, schools with grade 8, and schools with grades 10, 12 or both. Within selected schools, all students in the target grades were invited to participate. This method assured that each eligible student in Washington State had an equal chance of being selected for the state sample. These selection methods maximize the likelihood that students taking the survey as part of the state sample represent students in the specified grades as a whole. However, because a random sample cannot guarantee a representative sample and because not all schools and students invited to participate in the state sample took the survey, we need to check if the participants do in fact represent the larger group.

The Healthy Youth Survey Planning Committee emailed a letter in March 2021 inviting all eligible schools to participate in the 2021 HYS. Schools that had previously registered for HYS 2020 were automatically registered for the 2021 HYS and only needed to updated contact information. Previous administrations of HYS were done with paper and pencil surveys. For the 2021 HYS, almost all schools (98%) took the survey online (with an electronic survey, E-survey). The 2021 HYS included three survey forms. Schools with students in grade 6 received Form C; schools with students in grades 8, 10 and 12 received both Form A and Form B. Forms A and B were randomly distributed so that about half of students would receive a Form A survey and half would receive a Form B survey. Schools that did not want to ask the six removable sexual behavior and sexual violence questions on survey form B, could request that the questions be removed when they registered for the survey.

School participation in the survey is always voluntary, and parents can also opt their students out of the survey by notifying the school. Students can also opt out of the survey before or during the survey or they can choose to skip any questions they do not want to answer.

The factors outlined – student and school non-participation, schools opting out of removable questions, and students not finishing the survey - can introduce bias into the survey such that the findings would not represent public school students in grades 6, 8, 10 and 12 across the full state of Washington. Bias occurs if findings are affected by differences between students who answered survey questions and those who did not. This bias analysis report aims to assess bias by describing potential differences among participants and non-participants at the school and student levels and across completion patterns and if removable questions were administered. Any bias found could influence interpretation of results.

Sources of Bias

Potential sources of bias addressed in this report include:

- **School participation bias:** School participation bias could occur if findings were affected by differences between students in schools that participated and students in schools that chose not to participate in the HYS.
- **Removable question administration bias:** Some schools opted to remove the six survey questions about sexual behavior and sexual violence. Removable questions bias could occur if schools that did and did not administer the questions are different from each other.
- **Survey completion bias:** Survey completion bias could occur if there are differences between students who completed the survey and those who did not.

In order to assess bias, we must look at it indirectly. We cannot simply look to see if participating and non-participating schools and students gave different survey responses, because we do not have responses from non-participants.

First, we assessed school characteristics by comparing schools that participated in the survey and schools that did not. For this comparison, we assessed school-level information provided by the Office of Superintendent of Public Instruction (OSPI). To assess possible bias at the **school level**, we compared the characteristics of:

- Participating and non-participating schools.
- Schools that did and did not administer the removable questions to 8th graders and above.

Second, we assessed possible bias at the **individual student level** by comparing the characteristics of students who finished the survey and those who did not. The table below summarizes the analyses conducted to assess potential bias at the school and individual student levels.

Sources of potential bias and the level of analysis at which they were assessed in 2021

Source of potential bias	Description	School Level Analysis	Student Level Analysis
School participation	Participating schools compared to non-participating schools	X	
School-level removable question administration	Schools administering removable questions compared to schools not administering removable questions	X	
Student-level survey completion	Students who finished at least 85% of the survey compared to students who did not finish at least 85% of the survey		X

“State sample” means schools that were randomly selected for the representative state sample.

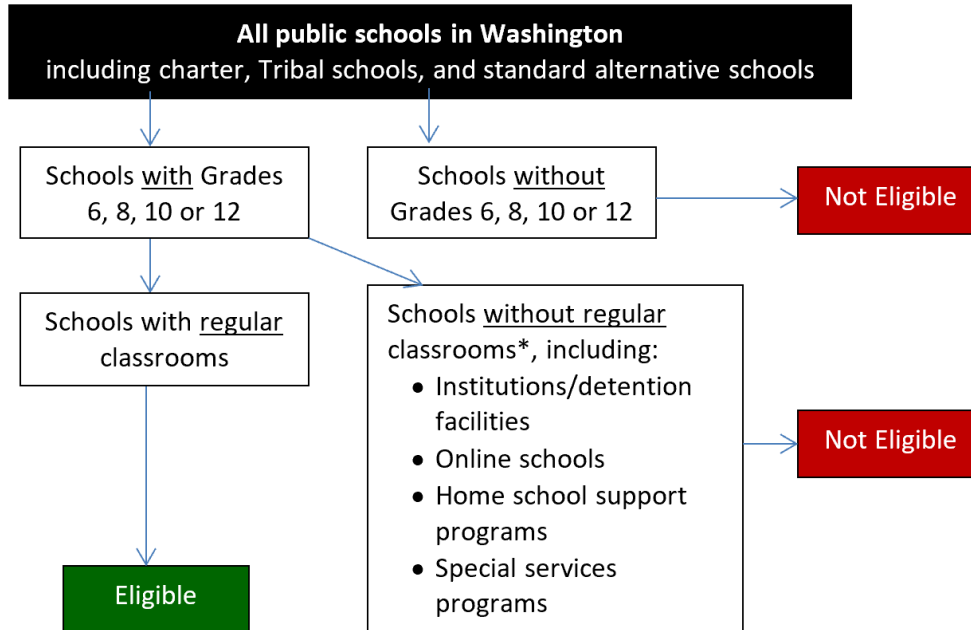
“Census” means all schools that participated in the 2021 HYS (state sample schools plus non-sampled schools).

All analyses were conducted using STATA statistical software package, version 16.0.

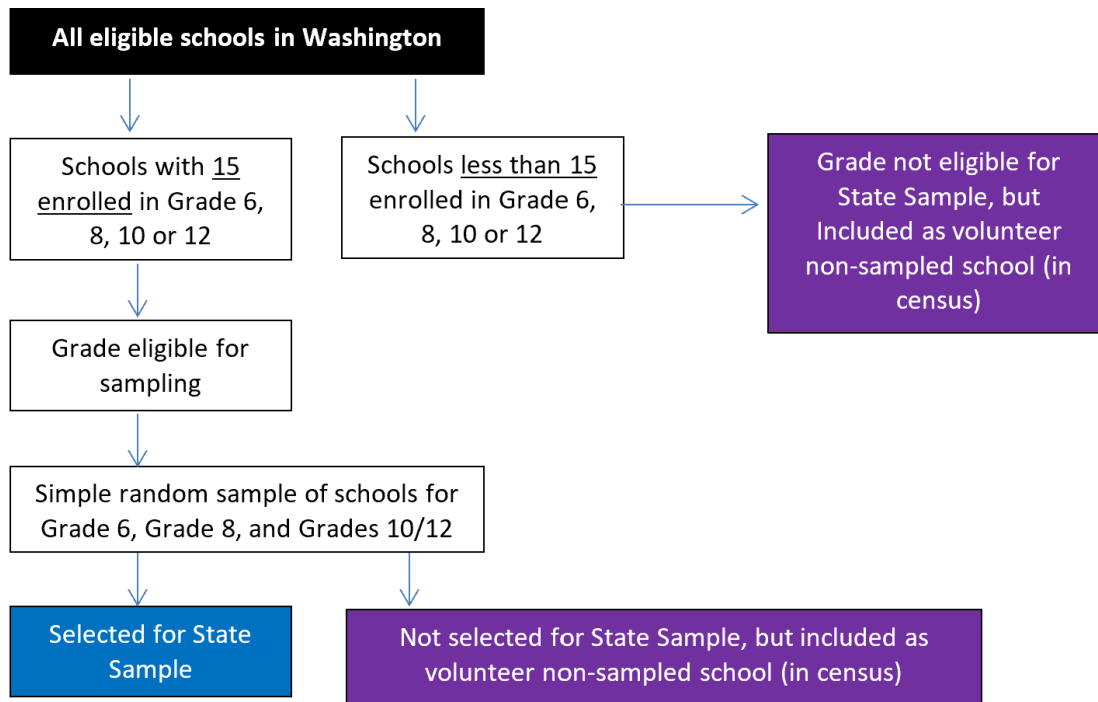
HYS School Eligibility and Participation

HYS Eligibility and Sampling

School Eligibility for HYS 2021

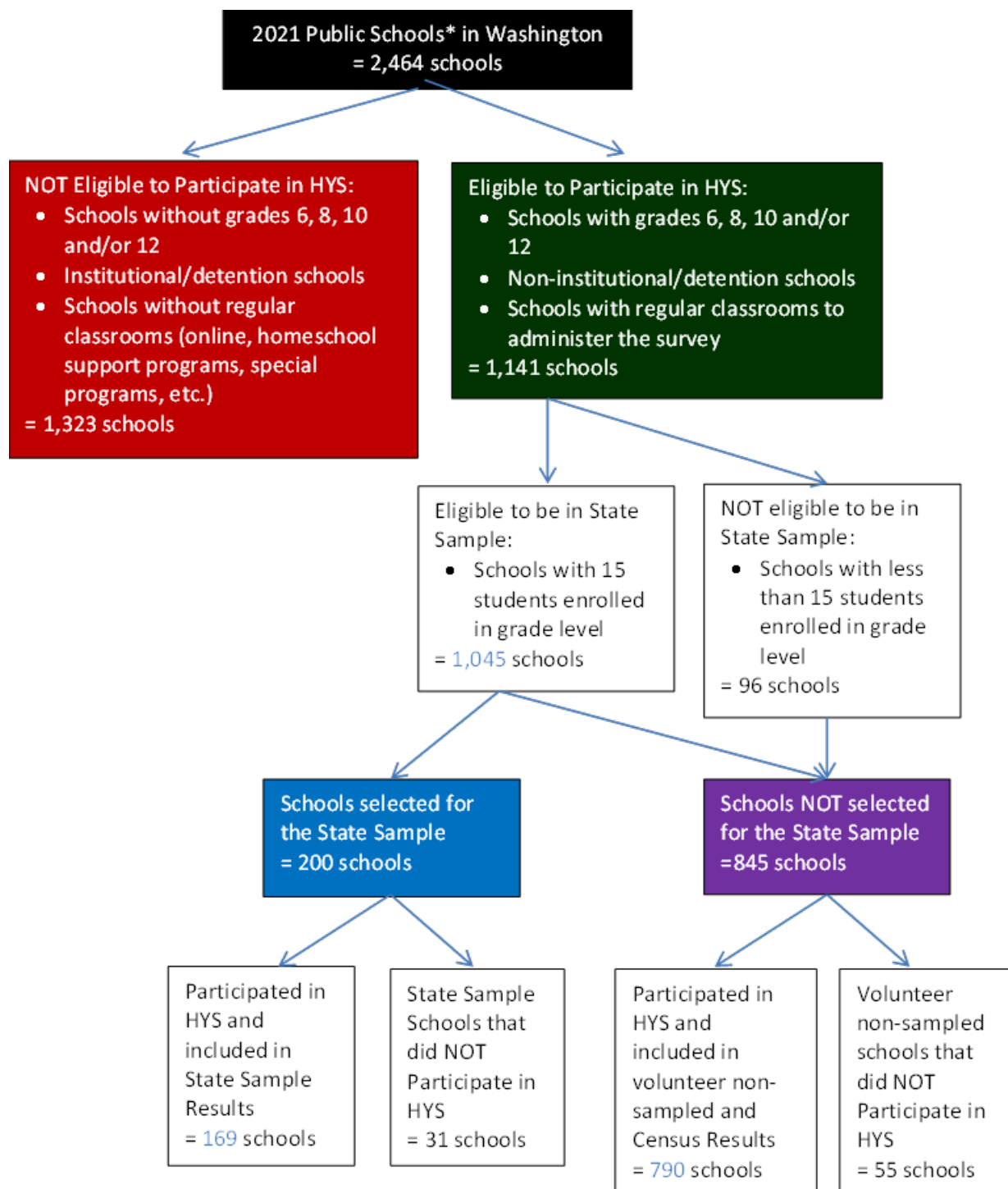


School Sampling for HYS 2021



*Schools without regular classrooms, such as online schools, home school support schools, and special services programs can participate in HYS on request if they can administer the survey in an environment meeting the research requirements of the project.

Description of schools included in the 2021 HYS State Sample and Census



*Public schools include charter, Tribal, and standard alternative schools. Private schools in Washington can participate in HYS, but they are not actively recruited, and their results are not aggregated into district, county, ESD or state results. In 2021, three private schools participated in HYS. Private schools are included in this bias analysis.

School Type

OSPI assigns each public school a school type code. Schools were considered to be non-alternative schools if they had the school type "P". This analysis included 989 public schools (P). School type can be found for each school in the OSPI Education Directory at:

<https://eds.ospi.k12.wa.us/directoryeds.aspx>

For this analysis schools were considered to be alternative schools if they had a school type code of "A", "I", "J", "Q", "R", "5", "T", "V", or "Z".

Schools that are detention centers (J) and institutions (I) are not eligible to participate in HYS, except for the School for the Blind and the School for the Deaf.

Schools that don't typically have regular classrooms, such as online schools, homeschool support schools, re-engagement schools (R), special education schools (5), vocational schools (V), and contract schools (Z) and not considered eligible, but can request to participate if students can take the survey anonymously.

Standard alternative schools (A) are eligible for HYS. The group of alternative schools in this analysis included 132 standard alternative schools (A), plus eight Tribal schools (T or Q), 11 re-engagement schools (R), and one institutional school (I).

Methods

To assess bias related to differences among schools that participated or did not participate in the survey, we assessed the following school characteristics, available from the Office of Superintendent of Public Instruction: <https://www.k12.wa.us/data-reporting/data-portal>:

- School participation rates by sampling status
- School type - Alternative school status
- School Demographics
 - School enrollment by grade
 - Percent enrollment by sex, race/ethnicity, English language learners, homeless, low income, migrant status, military parent, highly mobile family, Section 504 plans, and disability status
 - On-time graduation rate (for schools with grades 10 and 12)
 - English language arts (ELA), math, and science assessment scores
 - School urban or rural location

We compared the above characteristics for schools that participated in HYS and schools that did not participate, for both the state sample and in the census.

To compare schools by alternative status and urban/rural location, we used Chi-square tests and Fisher's exact when cell sizes were five or fewer. To compare school enrollment, meeting assessment standards, and on-time graduation rates, we used t-tests. A comparison was considered statistically significant if the p-value was less than 0.05.

Results

School Participation Rates by Sampling Status

A total of 169 schools and 31,167 students contributed data to the statewide sample. In addition, 162,410 students in 790 schools participated in the survey as volunteer non-sampled schools and were included in the census along with the state sample schools.

The tables below show participation rates for state sampled schools and participation rates for census schools. State sample participation rates were higher than census for all grades. Higher participation rates for state sampled schools are expected, because state sample schools are limited to schools with at least 15 students per grade.

Among schools drawn for the state sample, participation rates varied from 82% among 8th grades to 90% among 10th grades.

School participation rate by grade for schools drawn for the state sample, 2021

Grade	Participated	Eligible	Participation Rate (%)
6	71	82	86.6%
8	54	66	81.8%
10	52	58	89.7%
12	51	60	85.0%

The table below provides participation rates by grade for census schools. Participation ranged from 72% among 6th grades to 75% among 10th grades.

School participation rate by grade for the census, 2021

Grade	Participated	Eligible	Participation Rate (%)
6	489	685	71.4%
8	421	564	74.6%
10	373	496	75.2%
12	367	497	73.8%

School Participation Rates by School Type, Alternative and Non-Alternative

Schools with fewer than 15 students per grade were not included in the state sampling frame but were considered eligible to participate in the survey. Often alternative schools have small school enrollments, so they may be less likely to be included in the state sample. Some alternative schools may be less likely to participate because students are in the classroom less often or at different times, making it harder to administer the survey. They might also be less likely to participate if they aren't eligible to receive survey results due to having fewer than 15 students per grade.

Among state sample schools, alternative schools were significantly less likely to participate in HYS for grades 10, and 12.

Participation by alternative school status for the state sample, 2021

Grade	School Type	Did Not Participate %, (n)	Participated %, (n)	Difference (p-value)
6	Non-Alternative	11.5% (n=9)	88.5% (n=69)	0.0850
	Alternative	50.0% (n=2)	50.0% (n=2)	
8	Non-Alternative	16.1% (n=10)	83.9% (n=52)	0.1480
	Alternative	50.0% (n=2)	50.0% (n=2)	

Grade	School Type	Did Not Participate %, (n)	Participated %, (n)	Difference (p-value)
10	Non-Alternative	6.0% (n=3)	94.0% (n=47)	0.0290
	Alternative	37.5% (n=3)	62.5% (n=5)	
12	Non-Alternative	8.2% (n=4)	91.8% (n=45)	0.0070
	Alternative	45.5% (n=5)	54.5% (n=6)	

Among census schools, alternative schools were significantly less likely to participate in HYS for all grades.

Participation by alternative school status for the census, 2021

Grade	School Type	Did Not Participate %, (n)	Participated %, (n)	Difference (p-value)
6	Non-Alternative	26.6% (n=168)	73.4% (n=463)	0.0000
	Alternative	51.9% (n=28)	48.1% (n=26)	
8	Non-Alternative	22.5% (n=113)	77.5% (n=389)	0.0000
	Alternative	48.4% (n=30)	51.6% (n=32)	
10	Non-Alternative	18.8% (n=70)	81.2% (n=302)	0.0000
	Alternative	42.7% (n=53)	57.3% (n=71)	
12	Non-Alternative	19.6% (n=72)	80.4% (n=295)	0.0000
	Alternative	44.6% (n=58)	55.4% (n=72)	

School Participation Rates by School Demographics

Grade 6

State sample 6th grade schools that **did not** participate had significantly lower percentages for the following student groups:

- Students identifying as Hispanic/Latino

State sample 6th grade schools that **did not** participate had significantly higher percentages for the following student groups:

- Students identifying as two or more races
- Students experiencing homelessness
- Students from highly mobile families
- Students that met English language arts standards

Means for school and grade-level variables by participation for 6th grade state sample schools, 2021

School/Grade-level Variables	Did Not Participate Mean, ±95% CI, (n)	Participated Mean, ±95% CI, (n)	Difference (p-value)
Grade-level enrollment	131 (n=11)	144 (n=71)	0.712
% Female enrollment	52.7% (n=11)	48.1% (n=71)	0.095
% Male enrollment	47.2% (n=11)	51.7% (n=71)	0.098
% Other sex enrollment	0.1% (n=11)	0.2% (n=71)	0.724
% American Indian/Alaska Native enrollment	8.5% (n=11)	1.8% (n=71)	0.076
% Asian enrollment	4.2% (n=11)	8.0% (n=71)	0.253
% Black/African American enrollment	4.2% (n=11)	4.9% (n=71)	0.748
% Hispanic/Latino enrollment	12.2% (n=11)	25.0% (n=71)	0.029
% Native Hawaiian or Other Pacific Islander enrollment	2.0% (n=11)	1.6% (n=71)	0.687
% Two or more race enrollment	17.9% (n=11)	8.7% (n=71)	0.012
% White enrollment	51.0% (n=11)	50.0% (n=71)	0.895
% English language learner enrollment	6.2% (n=11)	11.9% (n=71)	0.099

School/Grade-level Variables	Did Not Participate Mean, ±95% CI, (n)	Participated Mean, ±95% CI, (n)	Difference (p-value)
% Homeless enrollment	11.1% (n=11)	2.6% (n=71)	0.020
% Low income enrollment	50.6% (n=11)	54.5% (n=71)	0.623
% Migrant enrollment	0.3% (n=11)	2.0% (n=71)	0.273
% Military parent enrollment	1.7% (n=11)	2.3% (n=71)	0.793
% Highly mobile family enrollment	11.0% (n=11)	3.2% (n=71)	0.028
% Section 504 plan enrollment	2.6% (n=11)	4.0% (n=71)	0.226
% Disabilities enrollment	13.4% (n=11)	15.7% (n=71)	0.238
% Met English language arts standards	57.4% (n=9)	44.7% (n=68)	0.030
% Met math standards	34.1% (n=9)	25.4% (n=64)	0.084
% Met science standards	64.5% (n=8)	56.3% (n=68)	0.136

Census 6th grade schools that **did not** participate had significantly smaller grade-level enrollment and lower percentages for the following student groups:

- Students identifying as Asian
- Students identifying as Hispanic/Latino
- Students in English language learning

Census 6th grade schools that **did not** participate had significantly higher percentages for the following student groups:

- Students identifying as American Indian/Alaska Native
- Students identifying as White
- Students from highly mobile families
- Students with disabilities

Means for school and grade-level variables by participation for census 6th grade schools, 2021

School/Grade-level Variables	Did Not Participate Mean, ±95% CI, (n)	Participated Mean, ±95% CI, (n)	Difference (p-value)
Grade-level enrollment	61 (n=196)	135 (n=489)	0.000
% Female enrollment	49.4% (n=194)	48.5% (n=489)	0.300
% Male enrollment	50.5% (n=194)	51.4% (n=489)	0.322
% Other sex enrollment	0.1% (n=194)	0.2% (n=489)	0.501
% American Indian/Alaska Native enrollment	5.2% (n=194)	1.8% (n=489)	0.000
% Asian enrollment	4.0% (n=194)	6.7% (n=489)	0.002
% Black/African American enrollment	3.2% (n=194)	4.0% (n=489)	0.131
% Hispanic/Latino enrollment	18.3% (n=194)	24.4% (n=489)	0.001
% Native Hawaiian or Other Pacific Islander enrollment	1.3% (n=194)	1.1% (n=489)	0.525
% Two or more race enrollment	9.2% (n=194)	8.8% (n=489)	0.564
% White enrollment	58.7% (n=194)	53.0% (n=489)	0.008
% English language learner enrollment	7.1% (n=194)	9.9% (n=489)	0.004
% Homeless enrollment	2.4% (n=194)	2.5% (n=489)	0.869
% Low income enrollment	51.7% (n=194)	50.8% (n=489)	0.678
% Migrant enrollment	2.5% (n=194)	2.4% (n=489)	0.832
% Military parent enrollment	2.1% (n=194)	2.1% (n=489)	0.897
% Highly mobile family enrollment	7.3% (n=194)	3.9% (n=489)	0.000
% Section 504 plan enrollment	4.0% (n=194)	3.9% (n=489)	0.950
% Disabilities enrollment	17.3% (n=194)	15.1% (n=489)	0.025
% Met English language arts standards	46.1% (n=127)	47.1% (n=446)	0.541
% Met math standards	28.5% (n=111)	27.4% (n=426)	0.499
% Met science standards	56.2% (n=126)	57.3% (n=440)	0.501

Grade 8

Among 8th grade state sample schools, there were no differences in school-level demographics by participation.

Means for school and grade-level variables by participation for the 8th grade state sample schools, 2021

School/Grade-level Variables	Did Not Participate Mean, ±95% CI, (n)	Participated Mean, ±95% CI, (n)	Difference (p-value)
Grade-level enrollment	116 (n=12)	174 (n=54)	0.090
% Female enrollment	49.1% (n=11)	49.1% (n=54)	0.987
% Male enrollment	50.5% (n=11)	50.5% (n=54)	0.993
% Other sex enrollment	0.4% (n=11)	0.4% (n=54)	0.975
% American Indian/Alaska Native enrollment	7.0% (n=11)	3.0% (n=54)	0.347
% Asian enrollment	2.4% (n=11)	4.9% (n=54)	0.212
% Black/African American enrollment	4.4% (n=11)	2.6% (n=54)	0.171
% Hispanic/Latino enrollment	25.5% (n=11)	22.5% (n=54)	0.656
% Native Hawaiian or Other Pacific Islander enrollment	0.6% (n=11)	0.6% (n=54)	0.891
% Two or more race enrollment	7.1% (n=11)	9.0% (n=54)	0.247
% White enrollment	52.9% (n=11)	57.3% (n=54)	0.532
% English language learner enrollment	7.2% (n=11)	5.7% (n=54)	0.555
% Homeless enrollment	2.9% (n=11)	2.1% (n=54)	0.355
% Low income enrollment	48.3% (n=11)	46.7% (n=54)	0.833
% Migrant enrollment	4.2% (n=11)	1.7% (n=54)	0.143
% Military parent enrollment	3.5% (n=11)	3.2% (n=54)	0.902
% Highly mobile family enrollment	4.6% (n=11)	3.2% (n=54)	0.129
% Section 504 plan enrollment	3.5% (n=11)	6.0% (n=54)	0.078
% Disabilities enrollment	12.2% (n=11)	13.8% (n=54)	0.283
% standards	46.2% (n=10)	53.1% (n=52)	0.238
% Met math standards	33.1% (n=9)	35.1% (n=51)	0.710

Census 8th grade schools that **did not** participate had significantly lower percentages for the following student groups:

- Students identifying as two or more races
- Students with Section 504 plans

Census 8th grade schools that **did not** participate had significantly higher percentages for the following student groups:

- Students identifying as American Indian/Alaska Native
- Students from highly mobile families
- Students with disabilities

Means for school and grade-level variables by participation for census 8th grade schools, 2021

School/Grade-level Variables	Did Not Participate Mean, ±95% CI, (n)	Participated Mean, ±95% CI, (n)	Difference (p-value)
Grade-level enrollment	75 (n=143)	170 (n=421)	0.090
% Female enrollment	47.6% (n=136)	48.6% (n=421)	0.435
% Male enrollment	51.9% (n=136)	50.9% (n=421)	0.419
% Other sex enrollment	0.5% (n=136)	0.5% (n=421)	0.946
% American Indian/Alaska Native enrollment	6.2% (n=136)	2.4% (n=421)	0.001
% Asian enrollment	5.1% (n=136)	6.2% (n=421)	0.295
% Black/African American enrollment	4.2% (n=136)	3.8% (n=421)	0.604
% Hispanic/Latino enrollment	20.7% (n=136)	24.2% (n=421)	0.106

School/Grade-level Variables	Did Not Participate Mean, ±95% CI, (n)	Participated Mean, ±95% CI, (n)	Difference (p-value)
% Native Hawaiian or Other Pacific Islander enrollment	1.3% (n=136)	1.0% (n=421)	0.399
% Two or more race enrollment	6.8% (n=136)	8.5% (n=421)	0.008
% White enrollment	55.7% (n=136)	54.0% (n=421)	0.525
% English language learner enrollment	7.4% (n=136)	7.9% (n=421)	0.653
% Homeless enrollment	3.4% (n=136)	2.7% (n=421)	0.329
% Low income enrollment	53.1% (n=136)	49.7% (n=421)	0.162
% Migrant enrollment	1.8% (n=136)	2.4% (n=421)	0.287
% Military parent enrollment	1.1% (n=136)	1.9% (n=421)	0.050
% Highly mobile family enrollment	8.4% (n=136)	3.9% (n=421)	0.000
% Section 504 plan enrollment	4.0% (n=136)	5.0% (n=421)	0.035
% Disabilities enrollment	17.3% (n=136)	14.0% (n=421)	0.007
% Met English language arts standards	48.3% (n=80)	49.4% (n=388)	0.594
% Met math standards	34.1% (n=74)	33.5% (n=382)	0.769

Grade 10

State sample 10th grade schools that **did not** participate had significantly smaller grade-level enrollment and lower percentages for the following student groups:

- Students identifying as two or more races

Means for school and grade-level variables by participation for 10th grade state sample schools, 2021

School/Grade-level Variables	Did Not Participate Mean, ±95% CI, (n)	Participated Mean, ±95% CI, (n)	Difference (p-value)
Grade-level enrollment	38 (n=6)	253 (n=52)	0.008
% Female enrollment	48.9% (n=6)	49.0% (n=52)	0.965
% Male enrollment	50.7% (n=6)	50.4% (n=52)	0.942
% Other sex enrollment	0.5% (n=6)	0.6% (n=52)	0.845
% American Indian/Alaska Native enrollment	13.9% (n=6)	2.8% (n=52)	0.050
% Asian enrollment	9.4% (n=6)	5.3% (n=52)	0.389
% Black/African American enrollment	3.4% (n=6)	2.9% (n=52)	0.820
% Hispanic/Latino enrollment	22.2% (n=6)	23.0% (n=52)	0.937
% Native Hawaiian or Other Pacific Islander enrollment	1.5% (n=6)	0.7% (n=52)	0.322
% Two or more race enrollment	2.5% (n=6)	8.0% (n=52)	0.017
% White enrollment	47.0% (n=6)	57.3% (n=52)	0.362
% English language learner enrollment	6.4% (n=6)	7.4% (n=52)	0.826
% Homeless enrollment	0.8% (n=6)	3.7% (n=52)	0.433
% Low income enrollment	48.2% (n=6)	46.3% (n=52)	0.858
% Migrant enrollment	2.6% (n=6)	3.5% (n=52)	0.790
% Military parent enrollment	0.2% (n=6)	2.3% (n=52)	0.332
% Highly mobile family enrollment	2.5% (n=6)	5.6% (n=52)	0.225
% Section 504 plan enrollment	4.2% (n=6)	6.4% (n=52)	0.242
% Disabilities enrollment	11.7% (n=6)	14.0% (n=52)	0.349

Census 10th grade schools that **did not** participate had significantly smaller grade-level enrollment and lower percentages for the following student groups:

- Students identifying as two or more races

Census 10th grade schools that **did not** participate had significantly higher percentages for the following student groups:

- Students identifying as American Indian/Alaska Native

- Students from low-income families
- Students from migrant families
- Students from highly mobile families
- Students with disabilities

Means for school and grade-level variables by participation for census 10th grade schools, 2021

School/Grade-level Variables	Did Not Participate Mean, ±95% CI, (n)	Participated Mean, ±95% CI, (n)	Difference (p-value)
Grade-level enrollment	77 (n=123)	195 (n=373)	0.000
% Female enrollment	47.8% (n=117)	49.0% (n=372)	0.458
% Male enrollment	51.8% (n=117)	50.0% (n=372)	0.261
% Other sex enrollment	0.4% (n=117)	1.0% (n=372)	0.269
% American Indian/Alaska Native enrollment	6.2% (n=117)	2.8% (n=372)	0.009
% Asian enrollment	3.6% (n=117)	5.2% (n=372)	0.100
% Black/African American enrollment	3.6% (n=117)	3.5% (n=372)	0.891
% Hispanic/Latino enrollment	24.7% (n=117)	23.7% (n=372)	0.660
% Native Hawaiian or Other Pacific Islander enrollment	0.8% (n=117)	0.8% (n=372)	0.903
% Two or more race enrollment	9.0% (n=117)	8.0% (n=372)	0.299
% White enrollment	52.0% (n=117)	55.9% (n=372)	0.161
% English language learner enrollment	7.6% (n=117)	7.6% (n=372)	0.986
% Homeless enrollment	3.5% (n=117)	3.8% (n=372)	0.718
% Low income enrollment	57.8% (n=117)	50.1% (n=372)	0.002
% Migrant enrollment	4.4% (n=117)	2.3% (n=372)	0.029
% Military parent enrollment	1.6% (n=117)	1.5% (n=372)	0.831
% Highly mobile family enrollment	8.2% (n=117)	5.7% (n=372)	0.015
% Section 504 plan enrollment	6.0% (n=117)	6.6% (n=372)	0.409
% Disabilities enrollment	17.6% (n=117)	14.1% (n=372)	0.015

Grade 12

State sample 12th grade schools that **did not** participate had significantly smaller grade-level enrollment and lower percentages for the following student groups:

- Students identifying as White
- Students graduating on time

State sample 12th grade schools that **did not** participate had significantly higher percentages for the following student groups:

- Students identifying as American Indian/Alaska Native
- Students from highly mobile families

Means for school and grade-level variables by participation for 12th grade state sample schools, 2021

School/Grade-level Variables	Did Not Participate Mean, ±95% CI, (n)	Participated Mean, ±95% CI, (n)	Difference (p-value)
Grade-level enrollment	29 (n=9)	251 (n=51)	0.000
% Female enrollment	50.3% (n=9)	48.4% (n=51)	0.340
% Male enrollment	48.9% (n=9)	50.9% (n=51)	0.329
% Other sex enrollment	0.8% (n=9)	0.7% (n=51)	0.859
% American Indian/Alaska Native enrollment	20.1% (n=9)	3.0% (n=51)	0.004
% Asian enrollment	7.5% (n=9)	6.2% (n=51)	0.712
% Black/African American enrollment	3.6% (n=9)	3.6% (n=51)	0.999
% Hispanic/Latino enrollment	23.3% (n=9)	22.5% (n=51)	0.912

School/Grade-level Variables	Did Not Participate Mean, \pm 95% CI, (n)	Participated Mean, \pm 95% CI, (n)	Difference (p-value)
% Native Hawaiian or Other Pacific Islander enrollment	0.0% (n=9)	1.0% (n=51)	0.081
% Two or more race enrollment	6.6% (n=9)	6.9% (n=51)	0.848
% White enrollment	38.8% (n=9)	56.8% (n=51)	0.039
% English language learner enrollment	6.8% (n=9)	7.4% (n=51)	0.852
% Homeless enrollment	5.0% (n=9)	3.9% (n=51)	0.459
% Low income enrollment	53.8% (n=9)	45.1% (n=51)	0.314
% Migrant enrollment	2.3% (n=9)	3.4% (n=51)	0.733
% Military parent enrollment	0.4% (n=9)	2.2% (n=51)	0.232
% Highly mobile family enrollment	10.5% (n=9)	5.5% (n=51)	0.018
% Section 504 plan enrollment	4.3% (n=9)	5.7% (n=51)	0.351
% Disabilities enrollment	19.5% (n=9)	15.4% (n=51)	0.301
% Met science standards	52.1% (n=7)	42.5% (n=44)	0.163
% On-time Graduation	72.9% (n=4)	84.3% (n=47)	0.122

Census 12th grade schools that **did not** participate had significantly smaller grade-level enrollment and lower percentages for the following student groups:

- Students identifying as Asian
- Students graduating on time

Census 12th grade schools that **did not** participate had significantly higher percentages for the following student groups:

- Students identifying as American Indian/Alaska Native
- Students from highly mobile families

Means for school and grade-level variables by participation for census 12th grade schools, 2021

School/Grade-level Variables	Did Not Participate Mean, \pm 95% CI, (n)	Participated Mean, \pm 95% CI, (n)	Difference (p-value)
Grade-level enrollment	92 (n=130)	194 (n=367)	0.000
% Female enrollment	48.3% (n=128)	48.6% (n=367)	0.771
% Male enrollment	51.4% (n=128)	50.7% (n=367)	0.536
% Other sex enrollment	0.3% (n=128)	0.7% (n=367)	0.439
% American Indian/Alaska Native enrollment	6.0% (n=128)	2.6% (n=367)	0.004
% Asian enrollment	3.8% (n=128)	5.6% (n=367)	0.038
% Black/African American enrollment	4.3% (n=128)	3.7% (n=367)	0.383
% Hispanic/Latino enrollment	22.1% (n=128)	23.8% (n=367)	0.412
% Native Hawaiian or Other Pacific Islander enrollment	0.7% (n=128)	1.0% (n=367)	0.133
% Two or more race enrollment	7.7% (n=128)	6.6% (n=367)	0.098
% White enrollment	55.4% (n=128)	56.7% (n=367)	0.632
% English language learner enrollment	7.2% (n=128)	7.9% (n=367)	0.525
% Homeless enrollment	5.1% (n=128)	4.6% (n=367)	0.442
% Low income enrollment	51.2% (n=128)	48.1% (n=367)	0.188
% Migrant enrollment	2.5% (n=128)	2.5% (n=367)	0.948
% Military parent enrollment	1.2% (n=128)	1.5% (n=367)	0.331
% Highly mobile family enrollment	11.1% (n=128)	7.1% (n=367)	0.000
% Section 504 plan enrollment	6.2% (n=128)	6.5% (n=367)	0.558
% Disabilities enrollment	16.9% (n=128)	15.3% (n=367)	0.163
% Met science standards	44.8% (n=82)	43.3% (n=307)	0.527
% On-time Graduation	74.9% (n=72)	82.1% (n=294)	0.003

School Participation Rates by Urban/Rural Location

Schools were designated as urban, suburban, small town, or isolated rural based on the school building zip code and the associated rural-urban commuting area codes (RUCA), provided by the Washington State Department of Social and Health Services' Research and Data Analysis Division. For more information on how these classifications are defined, please see the Washington State Department of Health's Rural-Urban Classification Guidelines:

<https://www.doh.wa.gov/Portals/1/Documents/1500/RUCAGuide.pdf>

Among state sampled schools, there were no differences between participating and non-participating schools by urban/rural locations, but the number of non-participating schools is very small.

Participation by rural/urban designation for the state sample, 2021

Grade	School Type	School Did Not Participate %, (n)	School Did Participate %, (n)	Difference (<i>p</i> - <i>value</i>)*
6	Urban	18.2% (n=10)	81.8% (n=45)	0.0910
	Sub-Urban	50.0% (n=1)	50.0% (n=1)	0.2520
	Small Town	0.0% (n=0)	100.0% (n=5)	1.0000
	Isolated/Rural	0.0% (n=0)	100.0% (n=20)	0.0580
8	Urban	15.0% (n=6)	85.0% (n=34)	0.5170
	Sub-Urban	50.0% (n=1)	50.0% (n=1)	0.3330
	Small Town	0.0% (n=0)	100.0% (n=5)	0.5750
	Isolated/Rural	26.3% (n=5)	73.7% (n=14)	0.3040
10	Urban	9.7% (n=3)	90.3% (n=28)	1.0000
	Sub-Urban	20.0% (n=1)	80.0% (n=4)	0.4330
	Small Town	14.3% (n=1)	85.7% (n=6)	0.5550
	Isolated/Rural	6.7% (n=1)	93.3% (n=14)	1.0000
12	Urban	15.6% (n=5)	84.4% (n=27)	1.0000
	Sub-Urban	16.7% (n=1)	83.3% (n=5)	1.0000
	Small Town	14.3% (n=1)	85.7% (n=6)	1.0000
	Isolated/Rural	13.3% (n=2)	86.7% (n=13)	1.0000

Among census 6th grade and 8th grade schools, urban schools were more likely to participate, and isolated/rural schools were less likely to participate.

Participation by rural/urban designation for the census, 2021

Grade	School Type	School Did Not Participate %, (n)	School Did Participate %, (n)	Difference
6	Urban	23.8% (n=95)	76.2% (n=304)	0.0010
	Sub-Urban	17.1% (n=6)	82.9% (n=29)	0.1230
	Small Town	21.9% (n=7)	78.1% (n=25)	0.3880
	Isolated/Rural	40.2% (n=88)	59.8% (n=131)	0.0000
8	Urban	20.5% (n=64)	79.5% (n=248)	0.0030
	Sub-Urban	18.8% (n=6)	81.3% (n=26)	0.3770
	Small Town	24.1% (n=7)	75.9% (n=22)	0.8770
	Isolated/Rural	34.6% (n=66)	65.4% (n=125)	0.0000
10	Urban	22.6% (n=57)	77.4% (n=195)	0.2530
	Sub-Urban	20.6% (n=7)	79.4% (n=27)	0.5560
	Small Town	17.9% (n=5)	82.1% (n=23)	0.3810
	Isolated/Rural	29.7% (n=54)	70.3% (n=128)	0.0560
12	Urban	24.8% (n=62)	75.2% (n=188)	0.4890

Grade	School Type	School Did Not Participate %, (n)	School Did Participate %, (n)	Difference
	Sub-Urban	20.6% (n=7)	79.4% (n=27)	0.4440
	Small Town	17.9% (n=5)	82.1% (n=23)	0.3040
	Isolated/Rural	30.3% (n=56)	69.7% (n=129)	0.1080

School Participation Rates by Survey Mode and Location

Prior to the 2021 Healthy Youth Survey, the survey was administered in classrooms using paper and pencil questionnaires. For 2021, the survey was available as an online survey (E-survey) and could be administered remotely during a classroom period. Schools could also request paper surveys in advance, if needed.

Among state sample schools, about 1% of students took the survey with a paper and pencil questionnaire.

State sample participation by survey questionnaire type

Grade	E-survey Administration % (n)	Paper and Pencil Administration % (n)
6	98.6% (8,307)	1.4% (119)
8	98.8% (7,598)	1.2% (93)
10	99.9% (9,369)	0.1% (9)
12	99.8% (5,660)	0.2% (12)

Among census schools, about 2% of students took the survey with a paper and pencil questionnaire.

Census participation by survey questionnaire type

Grade	E-survey Administration % (n)	Paper and Pencil Administration % (n)
6	98.1% (51,326)	1.9% (1,003)
8	98.1% (56,803)	1.9% (1,118)
10	98.4% (49,215)	1.6% (776)
12	98.5% (32,821)	1.5% (515)

Among state sample schools, about 1% of students took the survey remotely (not on school property) during a class period.

State sample participation by survey questionnaire type

Grade	School Administration % (n)	Remote Administration % (n)
6	98.7% (8,315)	1.3% (111)
8	99.3% (7,637)	0.7% (54)
10	99.1% (9,291)	0.9% (87)
12	97.7% (5,541)	2.3% (131)

Among census schools, about 2% of students took the survey remotely (not on school property) during a class period.

Census participation by survey questionnaire type

Grade	School Administration % (n)	Remote Administration % (n)
6	98.6% (51,574)	1.4% (755)
8	98.8% (57,223)	1.2% (698)
10	98.5% (49,247)	1.5% (744)
12	97.5% (32,503)	2.5% (833)

School-Level Removable Question Bias

Methods

To assess bias related to differences among schools with grade 8 or higher that did or did not administer the removable sexual behavior and sexual violence questions, we assessed the following school characteristics, available from the Office of Superintendent of Public Instruction at www.k12.wa.us/dataadmin and <http://reportcard.ospi.k12.wa.us/DataDownload.aspx>:

- School participation rates by sampling status
- School type - Alternative school status
- School Demographics
 - School enrollment by grade
 - Percent enrollment by sex, race/ethnicity, English language learners, homeless, low income, migrant status, military parent, highly mobile family, Section 504 plans, and disability status
 - On-time graduation rate (for schools with grades 10 and 12)
 - English language arts (ELA), math, and science assessment scores
 - School urban or rural location

We compared the above characteristics for schools that administered the removable questions in the state sample and in the census to those that did not ask the removable questions.

To compare schools by alternative status and urban/rural location, we used Chi-square tests and Fisher's exact when cell sizes were five or fewer. To compare grade-level school enrollment, meeting assessment standards, and on-time graduation rates we used t-tests. A comparison was considered statistically significant if the p-value was less than 0.05.

Results

Removable Question Participation Rates by Sampling Status

Among state sample schools, 52% of 8th grade participating schools administered the removable questions, while for grades 10 and 12, 67% and 65% respectively, of participating schools administered these questions. The percent of state sample schools was similar to the percent of census schools administering removable questions.

Removable question administration status by grade state sample schools, 2021

Grade	Participated	School Asked Removable Questions % (n)
8	54	51.9% (28)
10	52	67.3% (35)
12	51	64.7% (33)

Removable question administration status by grade for census schools, 2021

Grade	Participated	School Asked Removable Questions % (n)
8	421	56.3% (237)
10	373	61.1% (228)
12	367	61.9% (227)

Removable Questions by School Type – Alternative and Non-Alternative Schools

Among state sample and census schools, alternative schools were just as likely as non-alternative schools to administer the removable questions.

Removable question administration by alternative school status for state sample schools, 2021

Grade	School Type	School Asked Removable Questions %, (n)	School Did Not Ask Removable Questions %, (n)	Difference (p-value)
8	Non-alternative	50.0% (n=26)	50.0% (n=26)	0.4910
	Alternative	100.0% (n=2)	0.0% (n=0)	
10	Non-alternative	66.0% (n=31)	34.0% (n=16)	1.0000
	Alternative	80.0% (n=4)	20.0% (n=1)	
12	Non-alternative	64.4% (n=29)	35.6% (n=16)	1.0000
	Alternative	66.7% (n=4)	33.3% (n=2)	

Removable question administration by alternative school status for census schools, 2021

Grade	School Type	School Asked Removable Questions %, (n)	School Did Not Ask Removable Questions %, (n)	Difference (p-value)
8	Non-alternative	56.6% (n=220)	43.4% (n=169)	0.7070
	Alternative	53.1% (n=17)	46.9% (n=15)	
10	Non-alternative	61.9% (n=187)	38.1% (n=115)	0.5160
	Alternative	57.7% (n=41)	42.3% (n=30)	
12	Non-alternative	62.0% (n=183)	38.0% (n=112)	0.8850
	Alternative	61.1% (n=44)	38.9% (n=28)	

Removable Questions by School Demographics

Schools with Grade 8 Students

Among 8th grade state sample schools, schools that asked the removable questions had a:

- Significantly higher percentage of Black/African American enrollment than schools that did not ask them.

Means for school demographics by removable participation for state sample 8th grade schools, 2021

School/Grade-level Variables	Did Not Administer Removable Questions Mean (n)	Administered Removable Questions Mean (n)	Difference (p-value)
Grade-level enrollment	194 (n=26)	156 (n=28)	0.189
% Female enrollment	49.2% (n=26)	48.9% (n=28)	0.860
% Male enrollment	50.6% (n=26)	50.4% (n=28)	0.909
% Other sex enrollment	0.2% (n=26)	0.7% (n=28)	0.226
% American Indian/Alaska Native enrollment	1.7% (n=26)	4.1% (n=28)	0.404
% Asian enrollment	4.0% (n=26)	5.8% (n=28)	0.287
% Black/African American enrollment	1.3% (n=26)	3.8% (n=28)	0.004
% Hispanic/Latino enrollment	24.9% (n=26)	20.3% (n=28)	0.396
% Native Hawaiian or Other Pacific Islander enrollment	0.6% (n=26)	0.6% (n=28)	0.970
% Two or more race enrollment	7.8% (n=26)	10.1% (n=28)	0.077
% White enrollment	59.7% (n=26)	55.1% (n=28)	0.414

School/Grade-level Variables	Did Not Administer Removable Questions Mean (n)	Administered Removable Questions Mean (n)	Difference (p-value)
% English language learner enrollment	6.4% (n=26)	5.2% (n=28)	0.540
% Homeless enrollment	2.3% (n=26)	1.9% (n=28)	0.479
% Low income enrollment	47.3% (n=26)	46.1% (n=28)	0.834
% Migrant enrollment	2.4% (n=26)	1.0% (n=28)	0.213
% Military parent enrollment	4.6% (n=26)	1.9% (n=28)	0.133
% Highly mobile family enrollment	3.5% (n=26)	3.0% (n=28)	0.425
% Section 504 plan enrollment	5.6% (n=26)	6.3% (n=28)	0.551
% Disabilities enrollment	13.1% (n=26)	14.5% (n=28)	0.218
% Met English language arts standards	52.2% (n=25)	54.0% (n=27)	0.712
% Met math standards	34.4% (n=25)	35.8% (n=26)	0.750

Among 8th grade census schools, schools that asked the removable questions had a:

- Significantly higher percentage of Asian, Black/African American, and homeless enrollment than schools that did not ask them.
- Significantly lower percentage of White enrollment than schools that did not ask them.

Means for school demographics by removable participation for census 8th grade schools, 2021

School/Grade-level Variables	Did Not Administer Removable Questions Mean (n)	Administered Removable Questions Mean (n)	Difference (p-value)
Grade-level enrollment	171 (n=184)	169 (n=237)	0.851
% Female enrollment	48.8% (n=184)	48.4% (n=237)	0.637
% Male enrollment	50.6% (n=184)	51.2% (n=237)	0.480
% Other sex enrollment	0.6% (n=184)	0.5% (n=237)	0.652
% American Indian/Alaska Native enrollment	2.3% (n=184)	2.4% (n=237)	0.841
% Asian enrollment	4.8% (n=184)	7.4% (n=237)	0.006
% Black/African American enrollment	2.2% (n=184)	4.9% (n=237)	0.000
% Hispanic/Latino enrollment	24.7% (n=184)	23.8% (n=237)	0.667
% Native Hawaiian or Other Pacific Islander enrollment	0.8% (n=184)	1.1% (n=237)	0.102
% Two or more race enrollment	8.0% (n=184)	8.8% (n=237)	0.163
% White enrollment	57.2% (n=184)	51.6% (n=237)	0.013
% English language learner enrollment	7.2% (n=184)	8.4% (n=237)	0.198
% Homeless enrollment	2.2% (n=184)	3.1% (n=237)	0.038
% Low income enrollment	50.9% (n=184)	48.7% (n=237)	0.329
% Migrant	2.5% (n=184)	2.4% (n=237)	0.756
% Military parent enrollment	1.9% (n=184)	1.8% (n=237)	0.826
% Highly mobile family enrollment	4.0% (n=184)	3.9% (n=237)	0.924
% Section 504 plan enrollment	4.9% (n=184)	5.0% (n=237)	0.657
% Disabilities enrollment	13.5% (n=184)	14.4% (n=237)	0.177
% Met English language arts standards	48.6% (n=172)	50.1% (n=216)	0.385
% Met math standards	33.1% (n=169)	33.8% (n=213)	0.687

Schools with Grade 8 Students

Among 8th grade state sample schools, schools that asked the removable questions had a:

- Significantly lower percentage of multiracial enrollment than schools that did not ask them.

Means for school demographics by removable participation for state sample 10th grade schools, 2021

School/Grade-level Variables	Did Not Administer Removable Questions Mean (n)	Administered Removable Questions Mean (n)	Difference (p-value)
Grade-level enrollment	301 (n=17)	230 (n=35)	0.209
% Female enrollment	50.9% (n=17)	48.1% (n=35)	0.199
% Male enrollment	48.8% (n=17)	51.2% (n=35)	0.270
% Other sex enrollment	0.2% (n=17)	0.7% (n=35)	0.143
% American Indian/Alaska Native enrollment	4.2% (n=17)	2.1% (n=35)	0.432
% Asian enrollment	4.7% (n=17)	5.6% (n=35)	0.745
% Black/African American enrollment	2.7% (n=17)	3.1% (n=35)	0.753
% Hispanic/Latino enrollment	22.9% (n=17)	23.0% (n=35)	0.987
% Native Hawaiian or Other Pacific Islander enrollment	0.7% (n=17)	0.7% (n=35)	0.947
% Two or more race enrollment	10.6% (n=17)	6.8% (n=35)	0.016
% White enrollment	54.3% (n=17)	58.7% (n=35)	0.556
% English language learner enrollment	7.2% (n=17)	7.4% (n=35)	0.946
% Homeless enrollment	2.2% (n=17)	4.4% (n=35)	0.416
% Low income enrollment	47.4% (n=17)	45.8% (n=35)	0.815
% Migrant enrollment	2.5% (n=17)	4.0% (n=35)	0.553
% Military parent enrollment	3.6% (n=17)	1.7% (n=35)	0.219
% Highly mobile family enrollment	3.8% (n=17)	6.5% (n=35)	0.131
% Section 504 plan enrollment	6.1% (n=17)	6.5% (n=35)	0.765
% Disabilities enrollment	13.5% (n=17)	14.3% (n=35)	0.620

Among 10th grade census schools, schools that asked the removable questions had a:

- Significantly higher percentage of Black/African American, Hispanic/Latino, and English language learner enrollment than schools that did not ask them.
- Significantly lower percentage of White enrollment than schools that did not ask them.

Means for school demographics by removable participation for census 10th grade schools, 2021

School/Grade-level Variables	Did Not Administer Removable Questions Mean (n)	Administered Removable Questions Mean (n)	Difference (p-value)
Grade-level enrollment	197 (n=145)	193 (n=228)	0.853
% Female enrollment	49.5% (n=145)	48.7% (n=227)	0.499
% Male enrollment	49.0% (n=145)	50.6% (n=227)	0.221
% Other sex enrollment	1.4% (n=145)	0.7% (n=227)	0.269
% American Indian/Alaska Native enrollment	2.6% (n=145)	2.9% (n=227)	0.764
% Asian enrollment	4.2% (n=145)	5.8% (n=227)	0.087
% Black/African American enrollment	2.0% (n=145)	4.6% (n=227)	0.000
% Hispanic/Latino enrollment	20.4% (n=145)	25.8% (n=227)	0.015
% Native Hawaiian or Other Pacific Islander enrollment	0.6% (n=145)	0.9% (n=227)	0.219
% Two or more race enrollment	8.0% (n=145)	8.1% (n=227)	0.888
% White enrollment	62.1% (n=145)	52.0% (n=227)	0.000
% English language learner enrollment	5.3% (n=145)	9.0% (n=227)	0.001
% Homeless enrollment	3.0% (n=145)	4.3% (n=227)	0.090
% Low income enrollment	49.6% (n=145)	50.4% (n=227)	0.744
% Migrant enrollment	2.1% (n=145)	2.5% (n=227)	0.531

School/Grade-level Variables	Did Not Administer Removable Questions Mean (n)	Administered Removable Questions Mean (n)	Difference (p-value)
% Military parent enrollment	1.5% (n=145)	1.5% (n=227)	0.939
% Highly mobile family enrollment	5.7% (n=145)	5.7% (n=227)	0.971
% Section 504 plan enrollment	6.6% (n=145)	6.6% (n=227)	0.915
% Disabilities enrollment	13.1% (n=145)	14.8% (n=227)	0.085

Schools with Grade 12 Students

Among 12th grade state sample schools, schools that asked the removable questions had a:

- Significantly lower percentage of students meeting science standards than schools that did not ask them.

Means for school demographics by removable participation for state sample 12th grade schools, 2021

School/Grade-level Variables	Did Not Administer Removable Questions Mean (n)	Administered Removable Questions Mean (n)	Difference (p-value)
Grade-level enrollment	274 (n=18)	239 (n=33)	0.498
% Female enrollment	49.0% (n=18)	48.0% (n=33)	0.484
% Male enrollment	50.3% (n=18)	51.3% (n=33)	0.496
% Other sex enrollment	0.7% (n=18)	0.7% (n=33)	0.965
% American Indian/Alaska Native enrollment	5.3% (n=18)	1.8% (n=33)	0.203
% Asian enrollment	5.4% (n=18)	6.5% (n=33)	0.666
% Black/African American enrollment	2.8% (n=18)	4.1% (n=33)	0.474
% Hispanic/Latino enrollment	21.7% (n=18)	22.9% (n=33)	0.845
% Native Hawaiian or Other Pacific Islander enrollment	1.1% (n=18)	0.9% (n=33)	0.756
% Two or more race enrollment	7.6% (n=18)	6.5% (n=33)	0.328
% White enrollment	56.0% (n=18)	57.2% (n=33)	0.869
% English language learner enrollment	7.3% (n=18)	7.5% (n=33)	0.943
% Homeless enrollment	3.3% (n=18)	4.3% (n=33)	0.352
% Low income enrollment	46.0% (n=18)	44.6% (n=33)	0.827
% Migrant enrollment	3.1% (n=18)	3.5% (n=33)	0.870
% Military parent enrollment	3.2% (n=18)	1.6% (n=33)	0.201
% Highly mobile family enrollment	4.6% (n=18)	6.0% (n=33)	0.324
% Section 504 plan enrollment	4.5% (n=18)	6.4% (n=33)	0.087
% Disabilities enrollment	13.2% (n=18)	16.7% (n=33)	0.082
% Met science standards	48.6% (n=17)	38.7% (n=27)	0.049
On-time Graduation	86.4% (n=15)	83.3% (n=32)	0.471

Among 12th grade census schools, schools that asked the removable questions had a:

- Significantly higher percentage of Asian, Black/African American, and English language learner enrollment than schools that did not ask them.
- Significantly lower percentage of White enrollment than schools that did not ask them.

Means for school demographics by removable participation for census 12th grade schools, 2021

School/Grade-level Variables	Did Not Administer Removable Questions Mean (n)	Administered Removable Questions Mean (n)	Difference (p-value)
Grade-level enrollment	197 (n=140)	192 (n=227)	0.760
% Female enrollment	48.2% (n=140)	48.9% (n=227)	0.453
% Male enrollment	50.7% (n=140)	50.7% (n=227)	0.987
% Other sex enrollment	1.1% (n=140)	0.4% (n=227)	0.214
% American Indian/Alaska Native enrollment	2.6% (n=140)	2.5% (n=227)	0.935
% Asian enrollment	4.5% (n=140)	6.4% (n=227)	0.040
% Black/African American enrollment	2.1% (n=140)	4.6% (n=227)	0.000
% Hispanic/Latino enrollment	22.1% (n=140)	24.8% (n=227)	0.211
% Native Hawaiian or Other Pacific Islander enrollment	0.9% (n=140)	1.1% (n=227)	0.507
% Two or more race enrollment	6.4% (n=140)	6.8% (n=227)	0.513
% White enrollment	61.4% (n=140)	53.8% (n=227)	0.003
% English language learner enrollment	6.2% (n=140)	8.9% (n=227)	0.014
% Homeless enrollment	3.8% (n=140)	5.0% (n=227)	0.072
% Low income enrollment	47.9% (n=140)	48.1% (n=227)	0.924
% Migrant enrollment	2.5% (n=140)	2.5% (n=227)	0.968
% Military parent enrollment	1.5% (n=140)	1.5% (n=227)	0.951
% Highly mobile family enrollment	6.8% (n=140)	7.3% (n=227)	0.571
% Section 504 plan enrollment	6.4% (n=140)	6.6% (n=227)	0.798
% Disabilities enrollment	14.2% (n=140)	16.0% (n=227)	0.051
% Met science standards	44.7% (n=84)	44.3% (n=690)	0.882
On-time Graduation	83.3% (n=111)	81.4% (n=183)	0.336

Removable Questions by Community Demographics

State sample schools, urban and rural schools were equally likely to ask the removable questions.

Removable question participation by rural/urban designation for state sample schools, 2021

Grade	School Type	School Asked Removable Questions %, (n)	School Did Not Ask Removable Questions %, (n)	Difference (p-value)*
8	Urban	52.9% (n=18)	47.1% (n=16)	1.000
	Sub-Urban	0.0% (n=0)	100.0% (n=1)	0.481
	Small Town	20.0% (n=1)	80.0% (n=4)	0.184
	Isolated/Rural	64.3% (n=9)	35.7% (n=5)	0.358
10	Urban	71.4% (n=20)	28.6% (n=8)	0.562
	Sub-Urban	75.0% (n=3)	25.0% (n=1)	1.000
	Small Town	50.0% (n=3)	50.0% (n=3)	0.379
	Isolated/Rural	64.3% (n=9)	35.7% (n=5)	1.000
12	Urban	70.4% (n=19)	29.6% (n=8)	0.396
	Sub-Urban	60.0% (n=3)	40.0% (n=2)	1.000
	Small Town	50.0% (n=3)	50.0% (n=3)	0.652
	Isolated/Rural	61.5% (n=8)	38.5% (n=5)	1.000

Among 10th and 12th grade census schools, small town schools were less likely to ask the removable questions compared to other rural/urban categories.

Removable question participation by rural/urban designation for census schools, 2021

Grade	School Type	School Asked Removable Questions %, (n)	School Did Not Ask Removable Questions %, (n)	Difference (<i>p-value</i>)*
8	Urban	59.3% (n=147)	40.7% (n=101)	0.1400
	Sub-Urban	61.5% (n=16)	38.5% (n=10)	0.5780
	Small Town	31.8% (n=7)	68.2% (n=15)	0.0170
	Isolated/Rural	53.6% (n=67)	46.4% (n=58)	0.4690
10	Urban	64.6% (n=126)	35.4% (n=69)	0.1480
	Sub-Urban	70.4% (n=19)	29.6% (n=8)	0.3060
	Small Town	39.1% (n=9)	60.9% (n=14)	0.0250
	Isolated/Rural	57.8% (n=74)	42.2% (n=54)	0.3430
12	Urban	64.9% (n=122)	35.1% (n=66)	0.2190
	Sub-Urban	70.4% (n=19)	29.6% (n=8)	0.3440
	Small Town	39.1% (n=9)	60.9% (n=14)	0.0200
	Isolated/Rural	59.7% (n=77)	40.3% (n=52)	0.5300

Student-level Non-Completion Bias

Methods

Some students complete the full survey during the allotted time and others do not. Student-level survey completion was defined and categorized as:

- "Non-completers" – answered less than 85% of the questions of the survey form they received.
- "Completers" – answered 85% or more of the questions on the survey form they received.

To assess differences between survey non-completers to completers, we used Poisson regression to compute prevalence ratios. A difference was considered statistically significant if the p-value was less than 0.05.

We compared students based on questions assessing personal characteristics according to their completion status by grade. The characteristics for student-level comparisons include:

- School factors
 - Low self-report grades (mostly getting Cs, Ds or Fs at school)
 - Feeling safe at school ("definitely no" or "mostly no")
- Indicators of low socioeconomic status
 - Mother not completing high school
 - Housing situation due to finances
 - Food insecurity (family cutting meal size or skipping meals in past 12 months due of lack of money)
 - No dental visit for a check-up in the past year
- Behavioral factors
 - Past 30-day e-cigarette/vape use
 - Past 30-day marijuana use
 - Past 30-day alcohol drinking
- Demographics
 - Non-English language spoken at home
 - Migrant status
 - Disability status
 - Race and ethnicity

Results

Survey Non-completion for State Sample

Between of 15% and 18% of students did not complete at least 85% of the survey questions.

Survey completion by grade for state sample schools, 2021

Grade	n	Survey Completion: Answered 85% of Questions or More	Survey Non-completion: Answered Less than 85% or Questions
6	8,426	82.5%	17.5%
8	7,691	84.3%	15.7%
10	9,378	84.1%	16.0%
12	5,672	84.3%	15.7%

The table below displays prevalence ratios for respondent characteristics among non-completers compared to completers. Of the 75 comparison tests conducted, 50 showed statistically significant differences. Caution should be used interpreting these individual values due to the volume of comparisons run and the chance of bias with multiple comparisons. Overall, the volume of significant tests indicates that students who completed the survey are different from students who did not complete the survey for the characteristics assessed.

Comparing students from state sample schools, survey non-completers were more likely than completers to report:

- Lower self-report grades in school (grades 6, 8, 10, and 12) and feeling unsafe at school (grades 8, 10 and 12).
- Mother didn't graduate high school (grades 8 and 12), Family can't afford housing (grade 12), food insecurity (grades 8, 10, and 12), no dental visits in past year (grades 8 and 10)
- Past 30 day marijuana use (grades 6 and 10) and alcohol drinking (grades 6 and 8).
- Non-English language spoken at home (grades 6, 8, 10, and 12).
- Being a migrant student (grade 6, 8, 10, and 12)
- Being American Indian/Alaska Native (grades 8 and 10), and Black/African American (grades 10 and 12), Hispanic (grades 6, 8, 10, and 12), Native Hawaiian or other Pacific Islander (grade 12), or another race (grades 6, 8, and 10)

Comparing students from state sample schools, survey completers were more likely than non-completers to report:

- Being Asian (grades 6 and 8).
- Being White (grades 6, 8, 10, and 12).

Prevalence ratios for student characteristics by completion in the state sample, 2021

State Non-completers Compared to Completers by Grade

Characteristics	6 PR (95% CI)	8 PR (95% CI)	10 PR (95% CI)	12 PR (95% CI)
School factors				
Lower grades in school (C's, D's, F's)	1.3* (±0.19)	1.5* (±0.17)	1.4* (±0.21)	1.2* (±0.20)
Feeling unsafe at school	1.3* (±0.17)	1.3* (±0.23)	1.4* (±0.22)	1.1 (±0.23)
Indicators of low socioeconomic status				
Mother didn't graduate high school	na	2.0* (±0.63)	1.2 (±0.35)	1.6* (±0.46)
Family can't afford housing	na	0.7 (±0.42)	1.4* (±0.48)	1.9* (±0.96)
Food insecurity	na	1.6* (±0.41)	1.8* (±0.46)	1.5* (±0.46)
No dental visit in last year	na	1.4* (±0.27)	1.3* (±0.25)	1.0 (±0.29)
Substance use factors				
Current e-cig/vape use	1.4 (±0.53)	1.2 (±0.60)	1.2 (±0.32)	1.3 (±0.34)
Current marijuana use	3.5* (±1.79)	1.3 (±0.85)	1.4* (±0.43)	1.1 (±0.29)
Current alcohol drinking	2.2* (±0.94)	1.7* (±0.54)	1.0 (±0.28)	0.9 (±0.27)
Demographics				
Non-English spoken at home	1.6* (±0.25)	1.4* (±0.25)	1.4* (±0.30)	1.6* (±0.25)
Migrant	1.3* (±0.17)	1.4* (±0.23)	1.7* (±0.32)	1.6* (±0.48)
Disability	na	1.0 (±0.21)	1.0 (±0.22)	1.0 (±0.24)
Asian AOIC	0.8* (±0.18)	0.6* (±0.23)	0.8 (±0.21)	0.8 (±0.20)
American Indian/Alaska Native AOIC	1.0 (±0.23)	1.3** (±0.37)	1.4** (±0.38)	1.0 (±0.40)
Black/African American AOIC	1.2 (±0.44)	1.3* (±0.27)	1.9* (±0.39)	1.8* (±0.49)

Characteristics	6 PR (95% CI)	8 PR (95% CI)	10 PR (95% CI)	12 PR (95% CI)
Hispanic AOIC	1.6* (± 0.37)	1.6* (± 0.31)	1.5* (± 0.29)	1.3* (± 0.23)
Pacific Islander AOIC	0.9 (± 0.29)	1.1 (± 0.34)	1.3 (± 0.37)	1.7* (± 0.56)
White AOIC	0.5* (± 0.13)	0.7* (± 0.07)	0.8* (± 0.11)	0.8* (± 0.10)
Other race AOIC	1.2* (± 0.13)	1.4* (± 0.25)	1.8* (± 0.39)	1.3 (± 0.45)
Multiracial	0.8* (± 0.14)	1.0 (± 0.14)	1.2* (± 0.18)	0.8 (± 0.18)

PR: prevalence ratio; 95% CI: 95% confidence interval; bolded values with an asterisk * are statistically significant at the $p < 0.05$ level. A Prevalence ratio greater than 1 indicates that the characteristic is more common among students who did not complete the survey.

AOIC – Race/ethnic groups are reported for students who indicated they are of that particular race or ethnicity, either alone or in combination with another. An additional race category is also displayed that combines students who selected more than one group are reported as “more than one race/ethnicity marked”.

Survey Non-completion in Census Schools

Between of 15% and 20% of students did not complete at least 85% of the survey questions.

Survey completion by grade for census schools, 2021

Grade	n	Survey Completion: Answered 85% of Questions or More	Survey Non-completion: Answered Less than 85% or Questions
6	52,329	84.6%	15.4%
8	57,921	80.5%	19.5%
10	49,991	84.2%	15.8%
12	33,336	84.0%	16.0%

The table below displays prevalence ratios for respondent characteristics among non-completers compared to completers. Of the 75 comparison tests conducted, 63 showed statistically significant differences. Caution should be used interpreting these individual values due to the volume of comparisons run and the fact that some of these may be significant due to chance. Overall, the volume of significant tests indicate that students who completed the survey are different from students who did not complete the survey for the characteristics assessed.

Comparing students from state sample schools, survey non-completers were more likely than completers to report:

- Lower self-report grades in school (grades 6, 8, 10, and 12) and feeling unsafe at school (grades 6, 8, 10 and 12).
- Mother didn’t graduate high school (grades 8, 10 and 12), Family can’t afford housing (grades 10 and 12), food insecurity (grades 8, 10, and 12), no dental visits in past year (grades 8, 10, and 12)
- Past 30 day e-cigarette/vape use (grades 6, 8, 10, and 12), marijuana use (grades 6 and 10) and alcohol drinking (grade 6).
- Non-English language spoken at home (grades 6, 8, 10, and 12).
- Being a migrant student (grade 6, 8, 10, and 12)
- Being American Indian/Alaska Native (grades 6, 8 and 10), Black/African American (grades 6, 8, 10, and 12), Hispanic (grades 6, 8, 10, and 12), Native Hawaiian or other Pacific Islander (grades 8, 10, and 12), or another race (grades 6, 8, 10, and 12)

Comparing students from state sample schools, survey completers were more likely than non-completers to report:

- Past 30 day alcohol drinking (grade 12).
- Having a disability (grade 12)
- Being Asian (grades 6, 8, 10, and 12), White (grades 6, 8, 10, and 12), or multiracial (grades 6 and 8)

Prevalence ratios for student characteristics by completion in the state sample, 2021

Census Non-completers Compared to Completers by Grade

Variable	6 PR (95% CI)	8 PR (95% CI)	10 PRR (95% CI)	12 PR (95% CI)
School factors				
Lower grades in school (C's, D's, F's)	1.4* (±0.07)	1.3* (±0.05)	1.4* (±0.06)	1.2* (±0.07)
Feeling unsafe at school	1.2* (±0.07)	1.2* (±0.07)	1.3* (±0.09)	1.2* (±0.10)
Indicators of low socioeconomic status				
Mother didn't graduate high school	na	1.5* (±0.12)	1.4* (±0.13)	1.4* (±0.14)
Family can't afford housing	na	1.1 (±0.20)	1.5* (±0.28)	1.4* (±0.30)
Food insecurity	na	1.5* (±0.15)	1.5* (±0.17)	1.3* (±0.16)
No dental visit in last year	na	1.4* (±0.08)	1.3* (±0.10)	1.2* (±0.11)
Substance use factors				
Current e-cig/vape use	1.7* (±0.28)	1.2* (±0.13)	1.2* (±0.12)	1.0 (±0.10)
Current marijuana use	3.0* (±0.69)	1.1 (±0.18)	1.2* (±0.14)	0.9 (±0.09)
Current alcohol drinking	2.0* (±0.35)	1.1 (±0.15)	1.0 (±0.12)	0.8* (±0.08)
Demographics				
Non-English spoken at home	1.3* (±0.05)	1.3* (±0.05)	1.4* (±0.06)	1.4* (±0.07)
Migrant	1.3* (±0.08)	1.5* (±0.08)	1.5* (±0.11)	1.6* (±0.15)
Disability	na	1.0 (±0.08)	1.0 (±0.09)	0.9* (±0.10)
Asian AOIC	0.8* (±0.06)	0.7* (±0.04)	0.8* (±0.05)	0.9* (±0.07)
American Indian/Alaska Native AOIC	1.1* (±0.09)	1.3* (±0.10)	1.2* (±0.13)	1.1 (±0.15)
Black/African American AOIC	1.6* (±0.12)	1.5* (±0.09)	1.7* (±0.12)	1.7* (±0.15)
Hispanic AOIC	1.3* (±0.06)	1.3* (±0.05)	1.3* (±0.05)	1.3* (±0.06)
Pacific Islander AOIC	1.0 (±0.15)	1.3* (±0.14)	1.4* (±0.17)	1.5* (±0.21)
White AOIC	0.7* (±0.03)	0.7* (±0.02)	0.8* (±0.02)	0.8* (±0.02)
Other race AOIC	1.2* (±0.05)	1.4* (±0.07)	1.5* (±0.13)	1.6* (±0.20)
Multiracial	0.9* (±0.06)	0.9* (±0.05)	1.0 (±0.06)	0.9 (±0.07)

PR: prevalence; 95% CI: 95% confidence interval; bolded values with an asterisk * are statistically significant at the $p < 0.05$ level. A prevalence ratio greater than 1 indicates that the characteristic is more common among students who did not complete the survey.

AOIC – Race/ethnic groups are reported for students who indicated they are of that particular race or ethnicity, either alone or in combination with another. An additional race category is also displayed that combines students who selected more than one group are reported as “more than one race/ethnicity marked”.

Survey Non-completion by Survey Mode

Students who took the paper and pencil survey questionnaire had higher rates of non-completion compared to students that took the E-survey. Between of 22% and 38% of students who took the paper and pencil survey did not complete at least 85% of the survey questions.

Survey completion by grade for census schools by type of survey questionnaire, 2021

Grade	Survey Non-completion for E-survey Administration %	Survey Non-completion for Paper and Pencil Administration %	Difference (p-value)*
6	15.3%	22.2%	0.00000
8	19.2%	37.6%	0.00000
10	15.6%	29.5%	0.00000
12	15.8%	33.4%	0.00000

Survey Non-completion by Survey Location

Students who took the survey remotely (off school property) had higher rates of non-completion compared to students that took the survey on school property. Between of 24% and 29% of students who took the survey remotely did not complete at least 85% of the survey questions.

Survey completion by grade for census schools by survey location , 2021

Grade	Survey Non-completion for E-survey Administration %	Survey Non-completion for Paper and Pencil Administration %	Difference (p-value)*
8	28.9%	19.4%	0.00000
10	25.9%	15.7%	0.00000
12	28.5%	15.7%	0.00000

Appendix A: Non-Completion by Form Type and Grade

The analysis of student-level characteristics showed survey non-completion as the primary potential source of bias among schools in the state sample. The analysis showed that students finishing the survey are different in some respects from students who stopped earlier in the survey. If the students differ in a characteristic that influences how they would answer certain survey questions, then results derived from those questions might not accurately reflect the true values.

An important consideration for determining the potential impact of non-completion bias is what percentage of students did not complete the survey. For each administration of HYS, the Healthy Youth Survey Planning Committee tries to adjust the length of the survey to keep non-completion under 15%.

Number of questions on each survey form, 2021

Survey Form	Core Survey	Removable Questions	Total Questions
Form A	144	0	144
Form B	130	6	136
Form C	99	0	99

State Sample Non-Completion Charts

For the HYS 2021, questions on the online survey for 8-12 grade (Forms A and B) were partially randomized in blocks to try and reduce drop-off on questions normally located at the end of the survey. Randomization was not applied to the paper and pencil survey for Forms A and B. Randomization was also not applied to the grade 6 Form C online survey or paper and pencil survey.

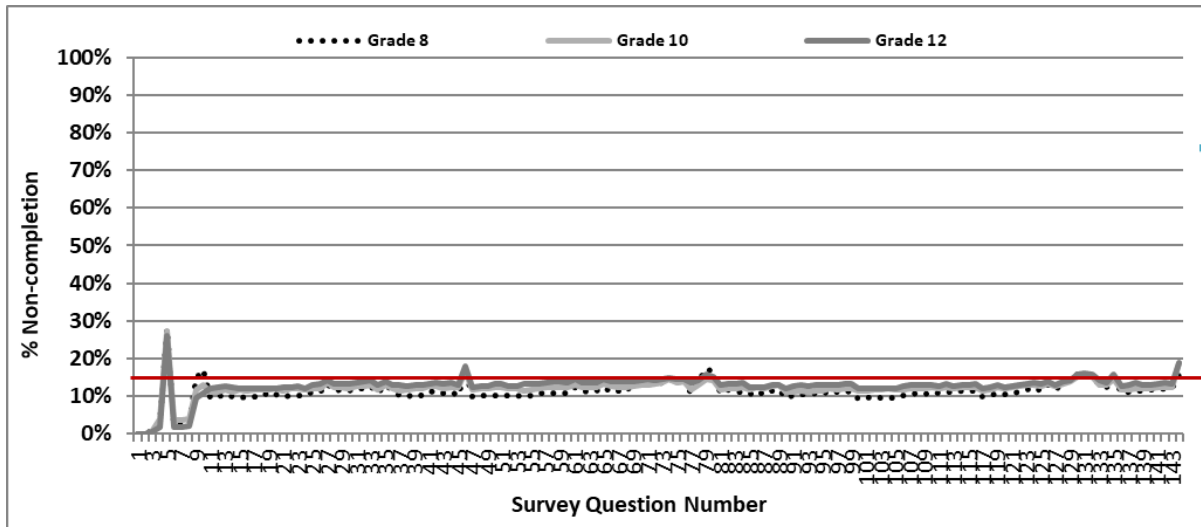
In the state sample, only a few schools took the paper and pencil survey, and a small portion of students took the survey remotely, so all responses, regardless of survey location or mode, are included in the state sample non-completion rates.

For the state sample, survey non-completion above 15% varied by grade and survey Form between 12% and 19%.

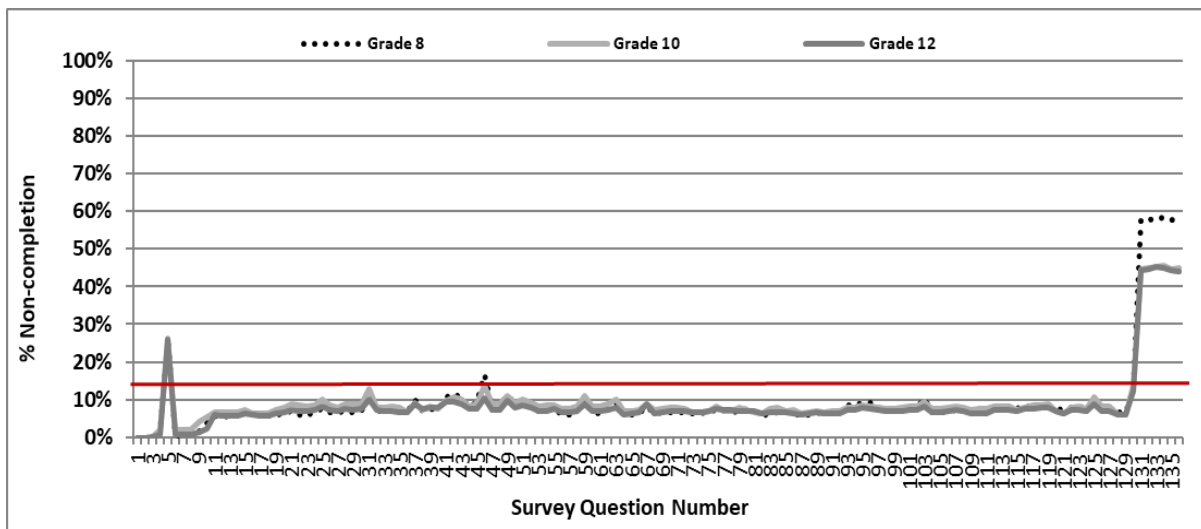
State sample non-completion by grade and survey questionnaire, 2021

Survey Form	Grade	15% Non-Completion
Form A	8th Grade	17.6%
	10th Grade	18.8%
	12th Grade	19.4%
Form B	8th Grade	13.6%
	10th Grade	12.8%
	12th Grade	11.6%
Form C	6th Grade	17.5%

Form A state sample non-completion (all responses)

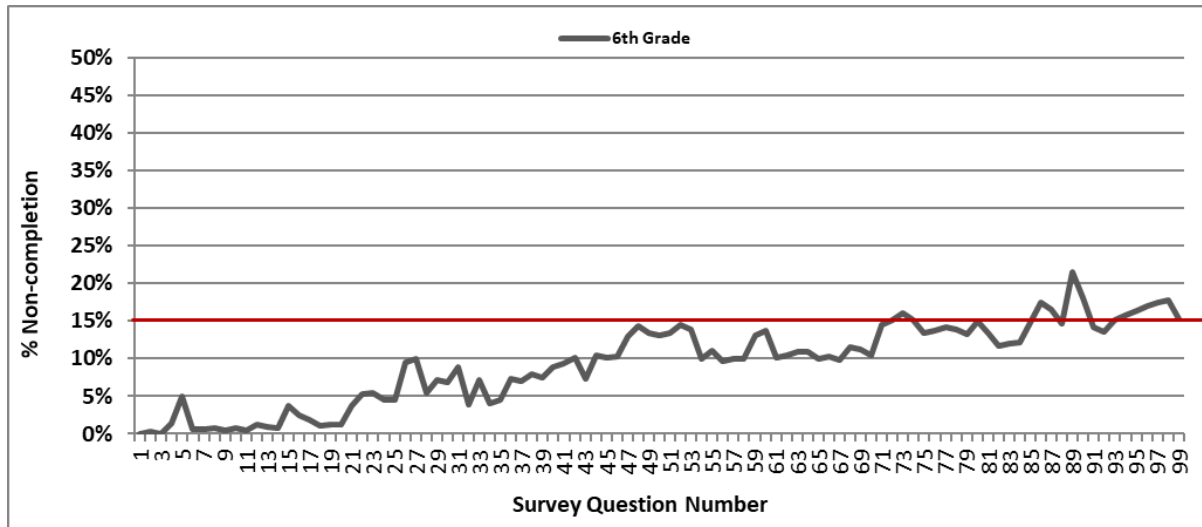


Form B state sample non-completion (all responses)



*Questions 131-136 on Form B were removable sexual behavior and violence questions. Non-completion is higher because it accounts for schools that did NOT ask those questions in addition to student non-completion.

Form C state sample non-completion (all responses)



Census Non-Completion Charts

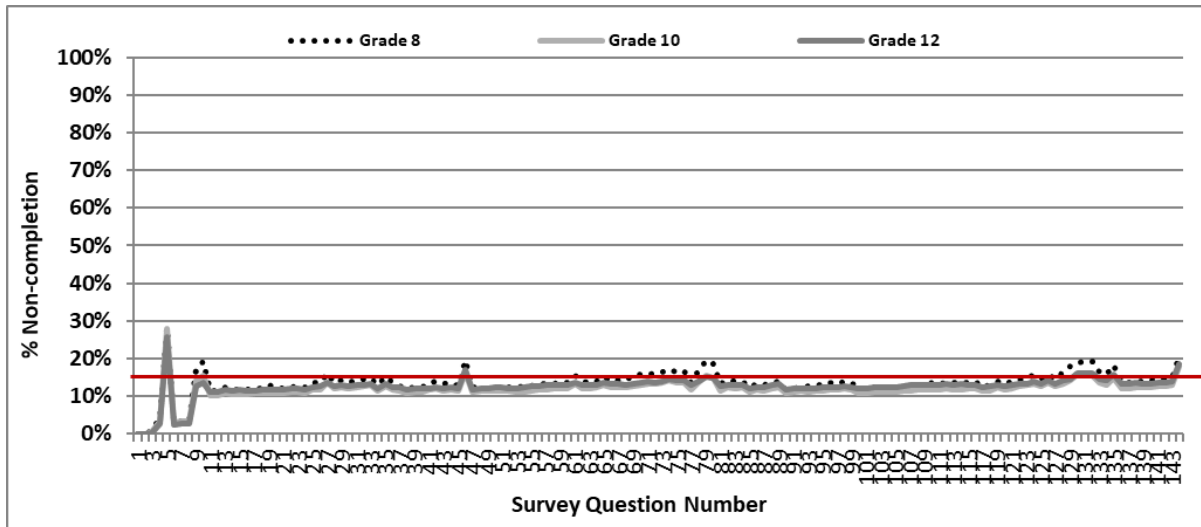
For the census, we are able to look at non-completion by survey mode for all responses and look at them separately among those who used the paper and pencil survey and those who took the survey remotely (off school property).

Census non-completion by grade, survey questionnaire, survey mode, and location 2021

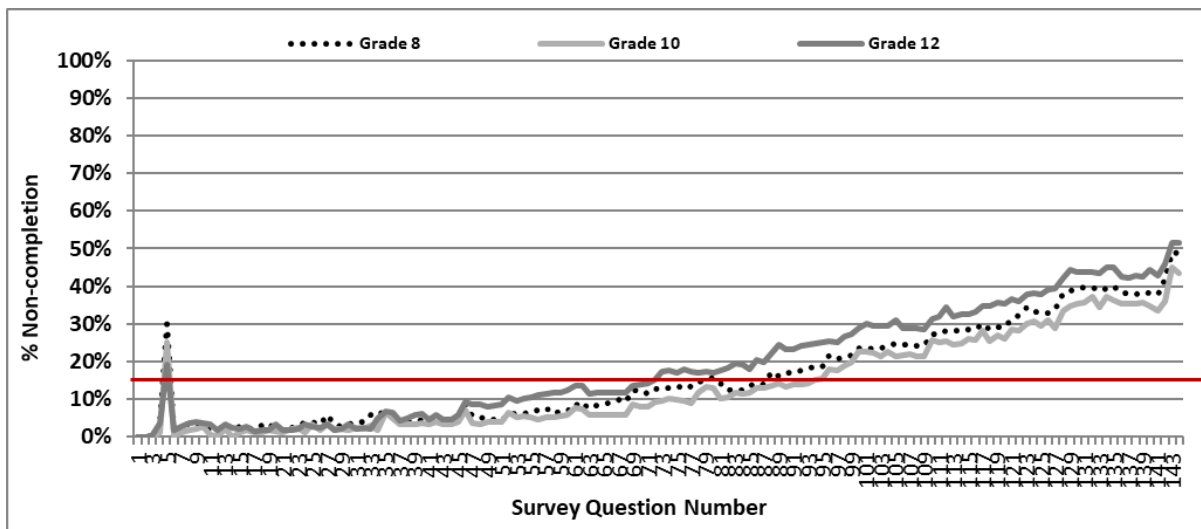
Survey Form	Grade	E-survey	Paper and Pencil	School Property	Remote	Overall
Form A	8th Grade	21.7%	35.0%	21.8%	31.8%	22.0%
	10th Grade	18.2%	30.5%	18.2%	31.0%	18.4%
	12th Grade	18.7%	40.3%	18.7%	32.6%	19.1%
Form B	8th Grade	16.6%	40.3%	16.9%	26.1%	17.0%
	10th Grade	12.7%	28.5%	12.8%	20.8%	13.0%
	12th Grade	12.8%	25.3%	12.7%	23.8%	12.9%
Form C	6th Grade	15.3%	22.2%	15.3%	23.6%	15.4%

For the census overall, survey non-completion above 15% varied by grade and survey questionnaire between 13% and 22% and was significantly higher among students using the paper and pencil surveys and students taking the survey remotely (off school property).

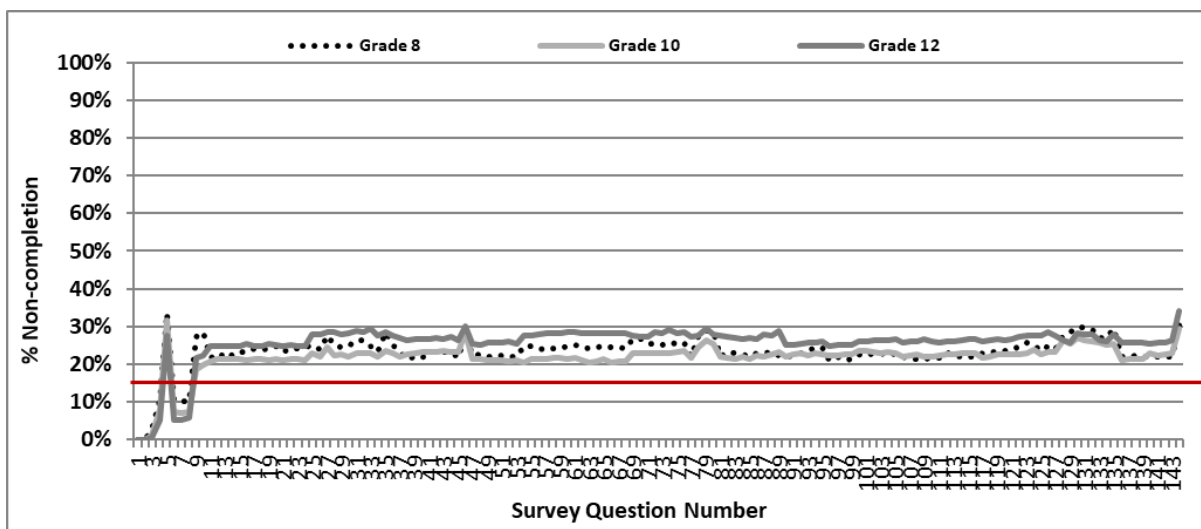
Form A census non-completion (all responses)



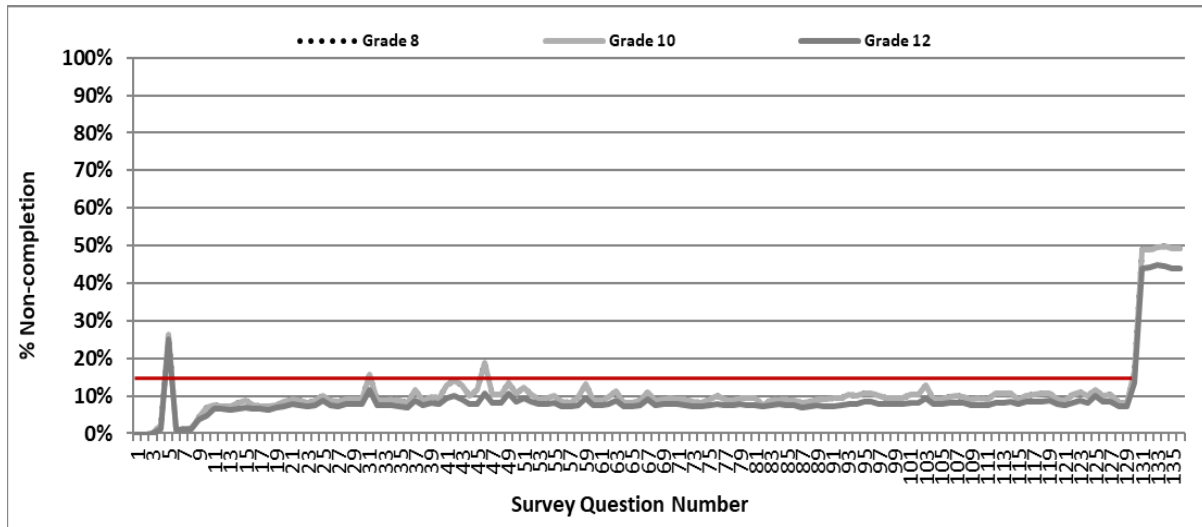
Form A census non-completion for paper and pencil questionnaires only



Form A census non-completion for remote survey administration only

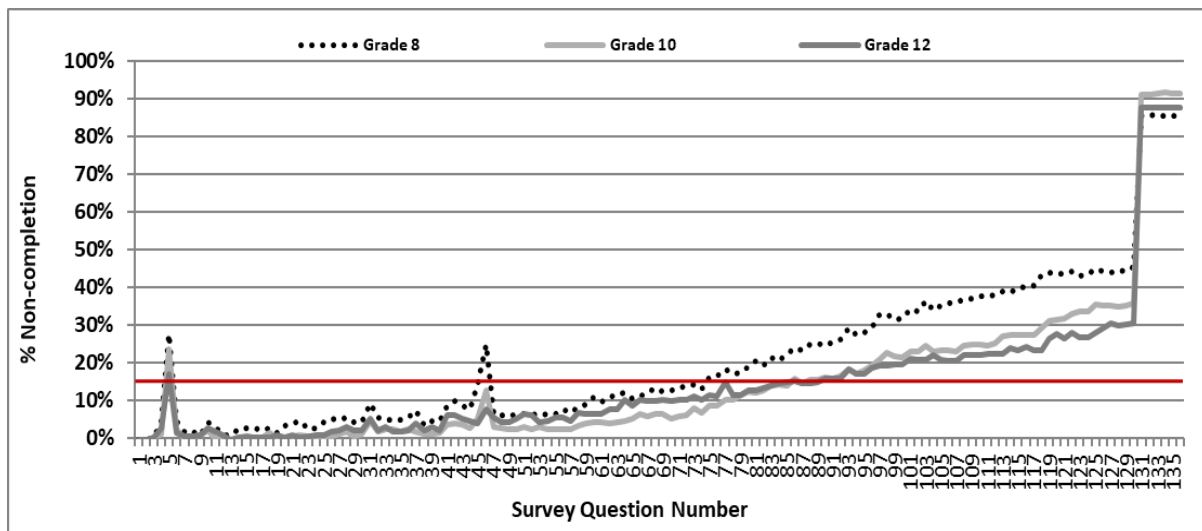


Form B census non-completion (all responses)



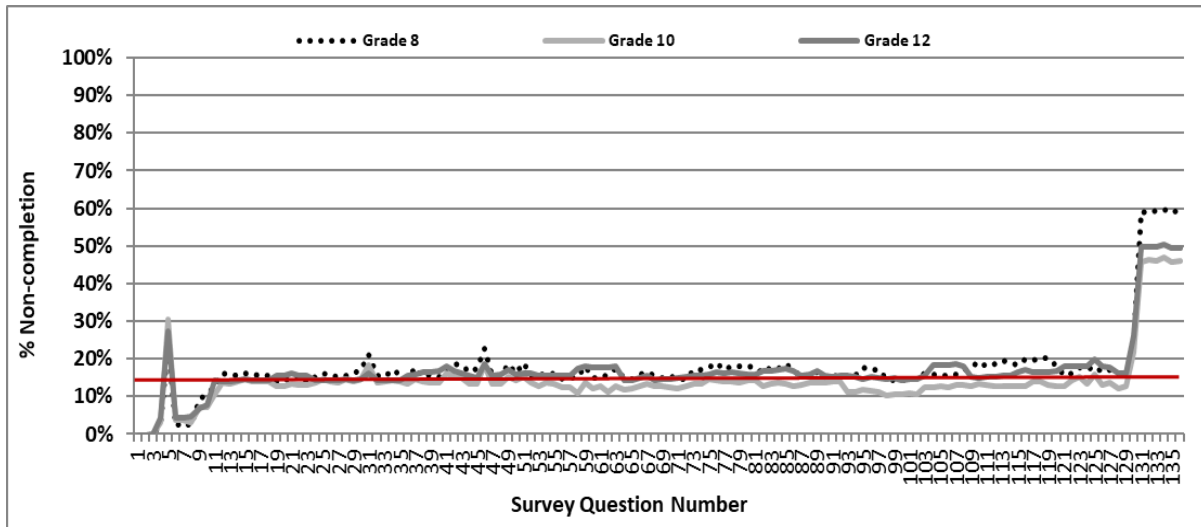
*Questions 131-136 on Form B were removable sexual behavior and violence questions. Non-completion is higher because it accounts for schools that did NOT ask those questions in addition to student non-completion.

Form B census non-completion for paper and pencil questionnaires only



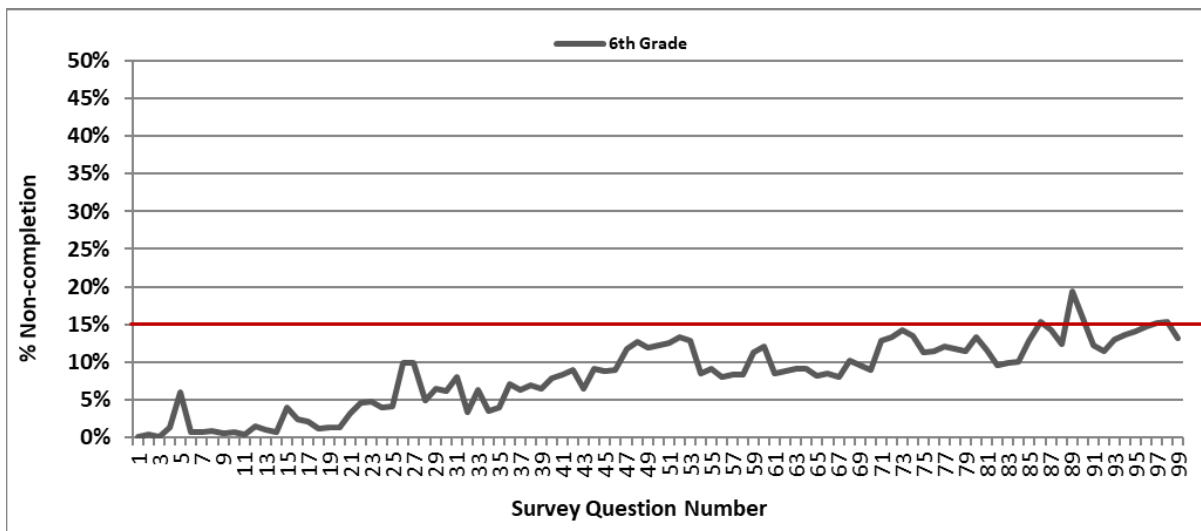
*Questions 131-136 on Form B were removable sexual behavior and violence questions. Non-completion is higher because it accounts for schools that did NOT ask those questions in addition to student non-completion.

Form B census non-completion for remote survey administration only

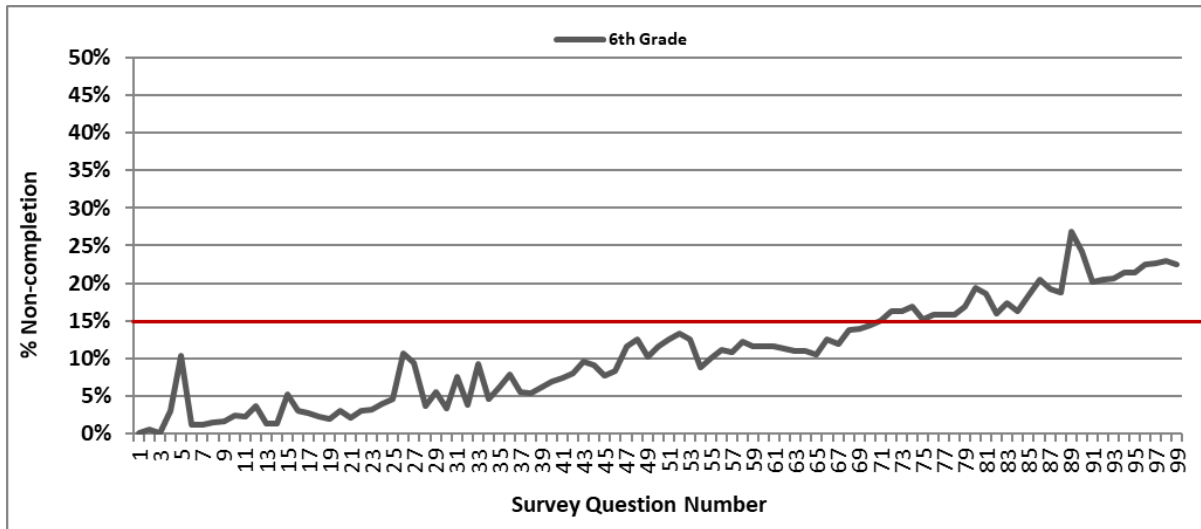


*Questions 131-136 on Form B were removable sexual behavior and violence questions. Non-completion is higher because it accounts for schools that did NOT ask those questions in addition to student non-completion.

Form C census non-completion (all responses)



Form C census non-completion for paper and pencil questionnaires only



Form C census non-completion for remote survey administration only

