

# 2019 Homeschooling and Full-Time Virtual Education Rates

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## AUTHORS

**Lisa Hudson**  
National Center for  
Education Statistics

**Talia Kaatz**  
**Danielle Battle**  
American Institutes for Research

**L. Jane Hall**  
**Steven Bahr**  
**Sandy Eyster**  
Activate Research, Inc.

PROJECT OFFICER  
**Michelle McNamara**  
National Center for  
Education Statistics

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We encourage readers who are interested in more complex questions and in-depth analyses to explore other National Center for Education Statistics resources, including publications, online data tools, and public- and restricted-use datasets; see [nces.ed.gov](https://nces.ed.gov) and references noted in the body of this document.

The U.S. elementary and secondary education system is largely a publicly funded enterprise, administered by states and local districts. However, parents also typically have the option to send their children to private schools or to homeschool their children. The National Center for Education Statistics (NCES) has long reported on public and private school enrollments. But it is only since the late 1990s that NCES has collected information on homeschooling, after the expansion of its National Household Education Surveys Program (NHES) to address this topic.

In 1999, school-age children were homeschooled at a rate of about 2 percent. By 2016, the rate was about 3 percent. More specifically, the rate increased from 1.7 percent in 1999 to 2.2 percent in 2003 and to 2.9 percent in 2007, then leveled off in 2012 and 2016 (rates of 3.4 and 3.3 percent, respectively, which were not significantly different from the 2007 rate) (Jackson et al. 2022). The 3.3 percent rate in 2016 represents approximately 1.7 million

homeschooled students (McQuiggan and Megra 2017). For more information on the homeschooling rates and comparing them over time, readers are advised to consult the *National Household Education Surveys Program of 2019: Data File User's Manual* (Jackson et al. 2022).

The past two decades have also seen growth in another form of out-of-school learning—virtual education. In virtual education, instruction is provided remotely via information technology. As information technology has advanced, this form of education has become a more feasible option for both children being homeschooled and enrolled students (Molnar et al. 2019).

This increased access was particularly important during the coronavirus pandemic, which forced many schools to switch to virtual education. For example, the Census Bureau's Household Pulse Survey found that in mid-October 2020, at least 65 percent of households with schoolchildren reported that

a child's education had changed to distance education as a result of the pandemic (see <https://www.census.gov/data/tables/2020/demo/hhp/hhp17.html>). Other researchers found that the number of school districts that planned to run virtual schools increased ninefold from the start of the pandemic to June 2021 (Diliberti and Schwartz 2021).

Both studies cited above were retrospective—asking how situations had changed since the start of the pandemic. Before the pandemic began only one federal data collection provided national information on the use of virtual education—the 2019 NHES, which included a new section asking about

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this form of education.<sup>1</sup> The NHES is now poised to provide key trend data on virtual education, with the 2019 NHES serving as a prepandemic baseline. The next NHES collection will occur in 2023.

This report includes the national rate of homeschooling in 2019, as well as information on who participates in homeschooling and on why parents choose to homeschool. Using the new questions on virtual education, the report also includes the national rate of participation in full-time virtual education (as part of homeschooling or separate from homeschooling), information on who participates in full-time virtual education, and the rate at which students participate in either of these instruction-at-home options.<sup>2</sup>

This report defines homeschooled students as students who are homeschooled for all or some classes, excluding those enrolled in school for more than 24 hours

per week or who are homeschooled only because of a temporary illness. Full-time virtual education includes students for whom all courses are taken virtually, excluding those who are taking virtual courses only because of a temporary illness, regardless of whether the parent considers the child to be homeschooled or not. Due to the questionnaire design, there are students who are considered homeschooled and full-time virtual education students because their parents consider the student to be homeschooled and responded to items about the child's homeschool experience. For this report, these students are included in both the homeschooling and full-time virtual education rates.

## **Data, Methods, and Structure of the Report**

The 2019 NHES data presented in this report are nationally

representative of 5- to 17-year-old students in grades K-12 or equivalent grades. The data were collected from the parents of students sampled for the study in 2019.

Comparisons highlighted in the text are statistically significant at the  $p < .05$  level to ensure that the differences were larger than might be expected due to sampling variation.

The report answers three key questions about homeschooling and full-time virtual education (see next page). The Technical Notes provide more detail on NHES and on the statistical procedures used in this report. Appendix A includes the data tables underlying the report's figures. Appendix B provides details on analyses to investigate item reliability and to determine the most appropriate items for identifying students who are homeschooled or in full-time virtual education.

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<sup>1</sup> The NHES asks parents of homeschooled students and parents of enrolled students about participation in "online, virtual, or cyber courses." For simplicity, this report refers to this coursetaking as virtual education.

<sup>2</sup> In the 2019 redesign, combining of the PFI-Homeschool questionnaire and the PFI-Enrolled questionnaire allowed parents of full-time virtual school students to report about the child's virtual schooling experience, regardless of whether the parent considers the child to be homeschooled or not.

# STUDY QUESTIONS

**1** What were the homeschooling, full-time virtual education, and instruction-at-home rates in 2019?

**2** Who participated in homeschooling and in full-time virtual education?

**3** Why did parents choose to homeschool?

## Key Findings

- In 2019, an estimated 2.8 percent of students ages 5-17 were homeschooled, and 1.2 percent were in full-time virtual education.<sup>3</sup> Overall, about 3.7 percent received instruction at home (either homeschooled or in full-time virtual education).
- 
- White students were homeschooled more often than Black or Hispanic students (4.0 versus 1.2 and 1.9 percent), and students in grades 6-8 were homeschooled more often than students in grades 9-12 (3.4 versus 2.3 percent). Students living in rural areas were homeschooled more often than students living in other areas (4.7 versus 2.2 to 2.5 percent).
  - White students were more often in full-time virtual education than were Hispanic students (1.5 versus 0.9 percent). Students in grades 6-12 were in full-time virtual education at higher rates than students in grades K-5 (2.0 percent [grades 6-8 and 9-12] versus 0.3 percent [grades K-2] and 0.6 percent [grades 3-5]).
- 
- The most commonly reported reasons for homeschooling were concern about the school environment (80 percent of homeschooled students had parents who reported this reason), wanting to provide moral instruction (75 percent), wanting to emphasize family life together (75 percent), and dissatisfaction with academic instruction at other schools (73 percent).
  - When asked for the most important reason for homeschooling, the most common response was concern about the school environment (25 percent of homeschooled students who had parents who reported this reason as the most important reason).

<sup>3</sup> As discussed in the Technical Notes, the 2.8 percent homeschooling rate in 2019 can be compared to the homeschooling rates in previous NHES administrations.

# 1 What were the homeschooling, full-time virtual education, and instruction-at-home rates in 2019?

In 2019, some 2.8 percent of students ages 5 to 17 were homeschooled (figure 1 and table A.1). This homeschooling rate includes all students reported as homeschooled for some or all of their classes, excluding students who were homeschooled only because they had a temporary illness or who attended a public or private school more than 24 hours per week. The 2.8 percent rate corresponds to approximately 1.5 million homeschooled students.

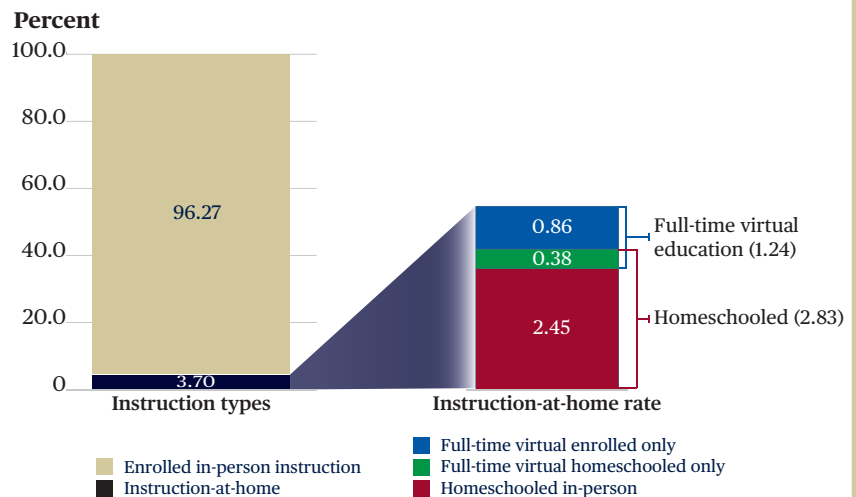
The 2019 NHES found that 1.2 percent of students were enrolled in full-time virtual education regardless of whether the parent considers the child to be homeschooled or not, excluding those who were in virtual education only because of a temporary illness. This rate corresponds to approximately 638,000 students in full-time virtual education. Among these students in full-time virtual education, 31 percent were homeschooled.<sup>4</sup>

Full-time virtual education was more common among homeschooled students than among students enrolled in a school. Among homeschooled students, 13 percent were in full-time virtual education, while among enrolled students only 1 percent were in full-time virtual education (table A.2).

Students who are homeschooled and those participating in full-time virtual education are both receiving instruction outside of a traditional, in-person school setting; these students are referred to here as receiving instruction at home. Thus, the instruction-at-home rate combines the homeschooling and full-time virtual education rates; however, because homeschooling

and virtual education are not mutually exclusive (both rates include homeschooled students who are enrolled in all virtual courses), the instruction-at-home rate is 3.7 percent, slightly less than the sum of the homeschooling and full-time virtual education rates.<sup>5</sup> Figure 1 displays how these enrollment patterns overlap.

**FIGURE 1. Enrollment, homeschooling, full-time virtual education, and instruction-at-home rates for students ages 5 to 17 in kindergarten through grade 12 or the grade equivalent: 2018-19**



NOTE: Enrolled in-person students are those who are not homeschooled and excludes those in full-time virtual education. Instruction-at-home is the combination of students who are homeschooled or in full-time virtual education regardless of whether the parent considers the child to be homeschooled or not. Full-time virtual enrolled students are students for whom all courses are taken virtually and the parent did not consider the student homeschooled, excluding those who are taking virtual courses only because of a temporary illness. Full-time virtual homeschooled are homeschooled students for whom all courses are taken virtually. Full-time virtual education includes students for whom all courses are taken virtually, excluding those who are taking virtual courses only because of a temporary illness, regardless of whether the parent considers the child to be homeschooled or not. Homeschooled in-person students excludes those in full-time virtual education. Homeschooled students are those who are homeschooled for all or some classes, excluding those enrolled in school for more than 24 hours per week or who are homeschooled only because of a temporary illness. Data were weighted using the final interview weight (FPWT). Detail may not sum to total due to rounding or missing data. Standard errors are in table A.3.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Parent and Family Involvement in Education Survey of the National Household Education Surveys Program (PFI-NHES), 2019.

<sup>4</sup> Not in tables or figures. The more precise estimate is 30.6 percent, with a standard error of 4.57.

<sup>5</sup> Data users can now choose to report a rate of homeschooling that excludes all full-time virtual school students, includes only full-time virtual students identified as homeschooled, or includes all full-time virtual school students (instruction-at-home).

# 2

## Who participated in homeschooling and in full-time virtual education?

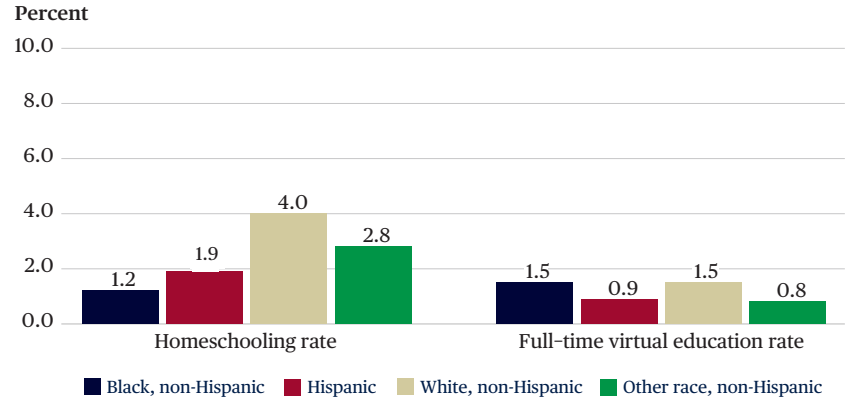
There was some variation in the rates of participation in homeschooling and in full-time virtual education regardless of whether the parent considers the child to be homeschooled or not, by students' race/ethnicity, students' grade level, parents' highest education level, and (for homeschooling) household locale and region of the country (figures 2-6). However, no measurable differences were found in the homeschooling or full-time virtual education rates by student's sex or by family poverty status (table A.1).

**Homeschooling.** White students were homeschooled more often than Black or Hispanic students (4.0 versus 1.2 and 1.9 percent, respectively; figure 2).<sup>6</sup> Students in grades 6-8 were homeschooled more often than students in grades 9-12 (3.4 versus 2.3 percent; figure 3). Homeschooling was also more common among students who had a parent with education beyond high school compared with students whose parents had only a high school education (2.9 to 3.3 versus 1.8 percent; figure 4).<sup>7</sup>

<sup>6</sup> Reporting standards were not met for the homeschooling rate for students who were Asian or Pacific Islander.

<sup>7</sup> There was no measurable difference between the percentage of homeschooled students whose parents had less than a high school education compared to those with an education of high school or more.

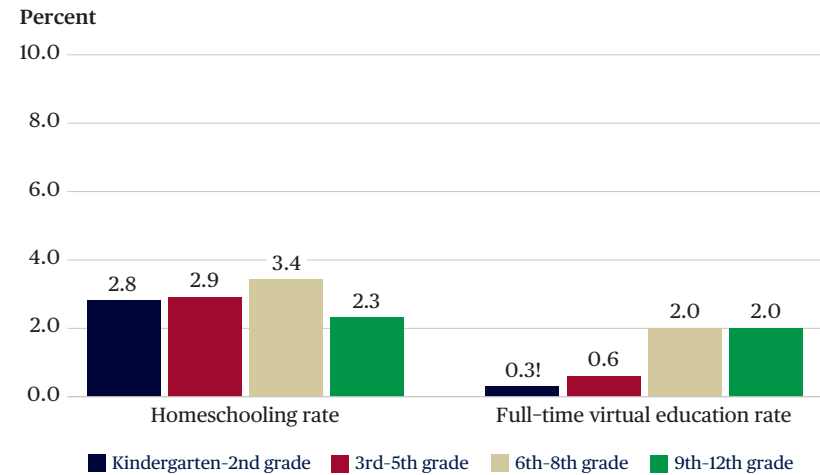
**FIGURE 2. Homeschooling rate and full-time virtual education rate for students ages 5 to 17 in kindergarten through grade 12 or the grade equivalent, by student's race/ethnicity: 2018-19**



NOTE: Reporting standards were not met for Asian or Pacific Islanders, non-Hispanic. The percentage of full-time virtual education rates are the same for Black, non-Hispanic and White, non-Hispanic. There were no measurable differences between Black students and all other races and ethnicities. Data were weighted using the final interview weight (FPWT). More precise estimates and standard errors are in table A.1.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Parent and Family Involvement in Education Survey of the National Household Education Surveys Program (PFI-NHES), 2019.

**FIGURE 3. Homeschooling rate and full-time virtual education rate for students ages 5 to 17 in kindergarten through grade 12 or the grade equivalent, by student's grade level: 2018-19**

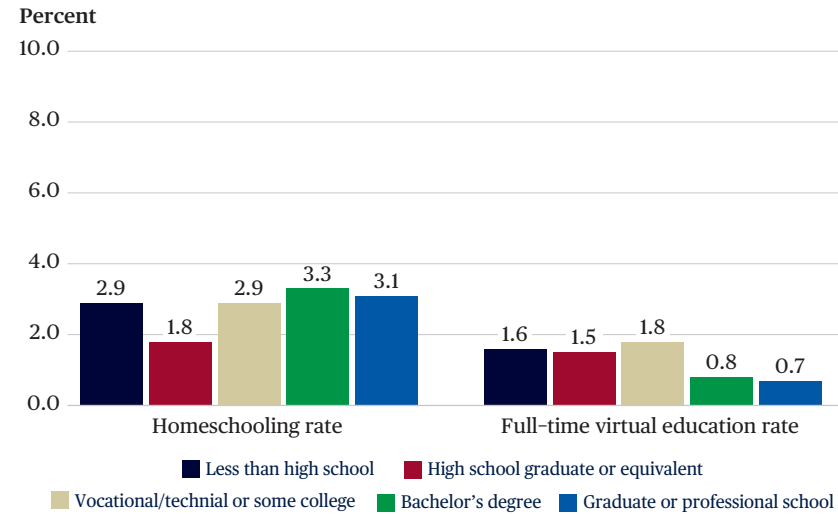


! Interpret data with caution. The coefficient of variation for this estimate is between 30 and 50.

NOTE: Data were weighted using the final interview weight (FPWT). More precise estimates and standard errors are in table A.1.

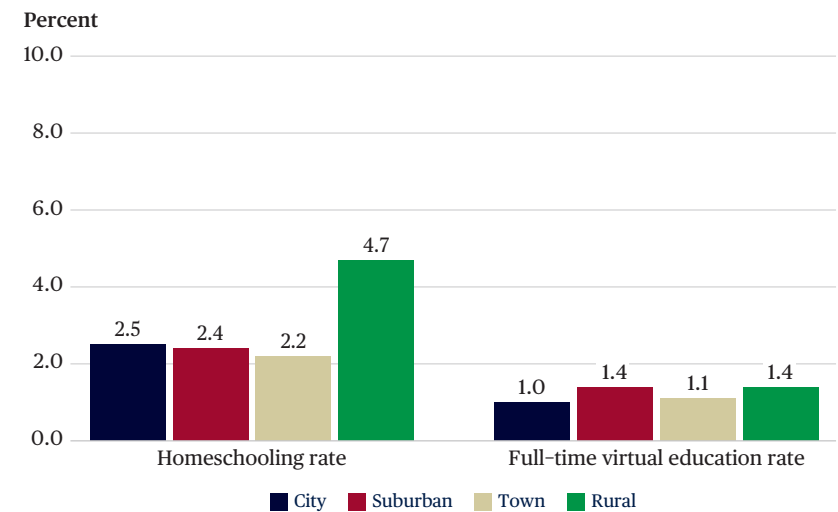
SOURCE: U.S. Department of Education, National Center for Education Statistics, Parent and Family Involvement in Education Survey of the National Household Education Surveys Program (PFI-NHES), 2019.

**FIGURE 4. Homeschooling rate and full-time virtual education rate for students ages 5 to 17 in kindergarten through grade 12 or the grade equivalent, by parents' educational attainment: 2018-19**



NOTE: Data were weighted using the final interview weight (FPWT). More precise estimates and standard errors are in table A.1.  
 SOURCE: U.S. Department of Education, National Center for Education Statistics, Parent and Family Involvement in Education Survey of the National Household Education Surveys Program (PFI-NHES), 2019.

**FIGURE 5. Homeschooling rate and full-time virtual education rate for students ages 5 to 17 in kindergarten through grade 12 or the grade equivalent, by locale of student's household: 2018-19**



NOTE: Data were weighted using the final interview weight (FPWT). More precise estimates and standard errors are in table A.1.  
 SOURCE: U.S. Department of Education, National Center for Education Statistics, Parent and Family Involvement in Education Survey of the National Household Education Surveys Program (PFI-NHES), 2019.

Students living in rural areas were homeschooled more often than students living in towns, suburbs, and cities (4.7 versus 2.2 to 2.5 percent; [figure 5](#)). Finally, homeschooling rates were higher in the South than in the Northeast or Midwest (3.4 versus 2.0 and 2.3 percent, respectively; [figure 6](#)) and homeschooling rates were higher in the West than in Northeast (3.1 versus 2.0 percent; [figure 6](#)).<sup>8</sup>

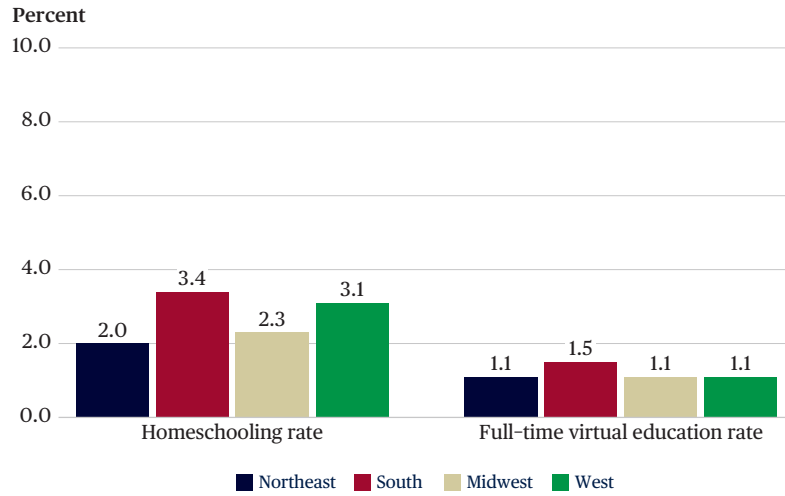
**Full-time virtual education.**

Findings were somewhat different for full-time virtual education rates. White students were more often enrolled in full-time virtual education compared with Hispanic students and students of other races who were not Black (1.5 versus 0.9 and 0.8 percent; [figure 2](#)).<sup>9</sup> There were no measurable differences between Black students and all other races and ethnicities. Students in grades 6-12 were more often in full-time virtual education than were students in lower grades (2.0 percent [grades 6-8 and 9-12] versus 0.3 percent [grades K-2] and 0.6 percent [grades 3-5]; [figure 3](#)). Full-time virtual education was more common among students who had a parent with postsecondary education below the bachelor's degree level, compared with students who had a parent with a bachelor's or higher degree (1.8 versus 0.8 and 0.7 percent; [figure 4](#)). Contrary to homeschooling, no measurable differences were found in full-time virtual education rates by locale ([figure 5](#)) or by region of the country ([figure 6](#)).

<sup>8</sup> There was no measurable difference between the percentage of homeschooled students in the West to those in the Midwest and South. Also, no measurable difference between the percentage of homeschooled students in the Northeast and Midwest.

<sup>9</sup> Reporting standards were not met for the full-time virtual education rate for students who were Asian or Pacific Islander.

**FIGURE 6. Homeschooling rate and full-time virtual education rate for students ages 5 to 17 in kindergarten through grade 12 or the grade equivalent, by region of the country: 2018-19**



NOTE: Data were weighted using the final interview weight (FPWT). More precise estimates and standard errors are in table A.1.

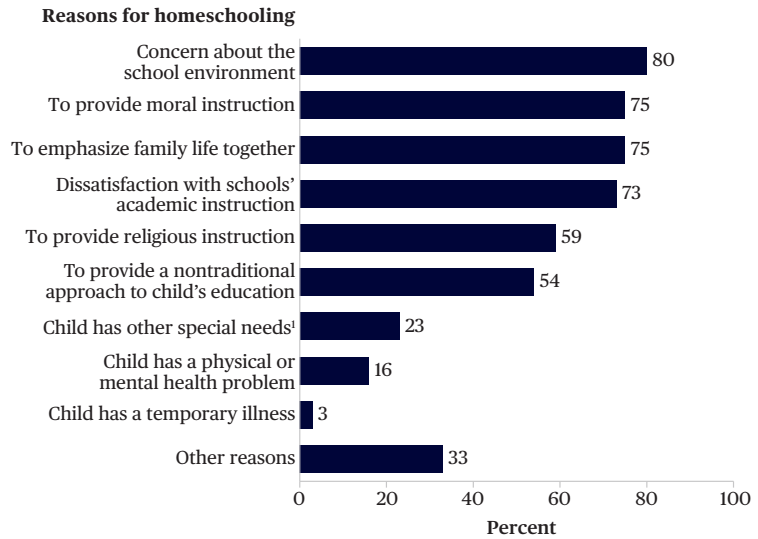
SOURCE: U.S. Department of Education, National Center for Education Statistics, Parent and Family Involvement in Education Survey of the National Household Education Surveys Program (PFI-NHES), 2019.

# 3

## Why did parents choose to homeschool?

Among 10 possible reasons to homeschool, four reasons were selected most often: concern about the school environment (selected by the parents of 80 percent of homeschooled students), to provide moral instruction (75 percent), to emphasize family life together (75 percent), and dissatisfaction with the academic instruction at public and private schools (73 percent) (figure 7).

**FIGURE 7. Percent of homeschooled students ages 5 to 17 in kindergarten through grade 12 or the grade equivalent whose parents selected each factor as a reason they chose to homeschool: 2018-19**



<sup>1</sup> Includes special needs other than a physical or mental health problem.

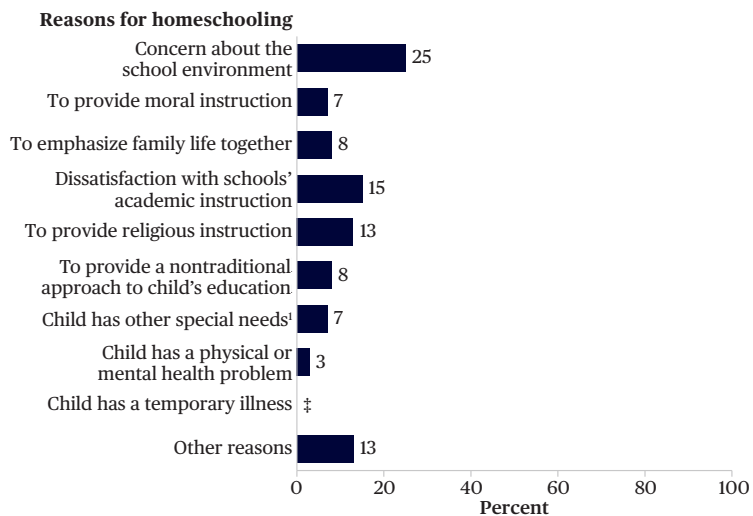
NOTE: Respondents could choose more than one reason. Data were weighted using the final interview weight (FPWT). More precise estimates and standard errors are in table A.4.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Parent and Family Involvement in Education Survey of the National Household Education Surveys Program (PFI-NHES), 2019.



When asked to select the one most important reason for homeschooling, parents most often selected concern about the school environment (selected by the parents of 25 percent of homeschooled students) (figure 8). Dissatisfaction with the academic instruction at public and private schools (15 percent) and a desire to provide religious instruction (13 percent) were the other two reasons most commonly selected as most important. There was one exception for those parents who selected providing religious instruction; there was no measurable difference between the percentage of homeschooled students whose parents selected providing religious instruction (13 percent) as their most important reason and those who selected to emphasize family life together (8 percent), though school environment and dissatisfaction with the academic instruction at public or private schools was measurably different from emphasize family life together.<sup>10</sup>

**FIGURE 8. Percent of homeschooled students ages 5 to 17 in kindergarten through grade 12 or the grade equivalent whose parents selected each factor as their most important reason for homeschooling: 2018-19**



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

<sup>1</sup> Includes special needs other than a physical or mental health problem.

NOTE: Respondents could choose only one reason as their most important. The reasons presented in this figure are ordered in the same order as figure 7. Data were weighted using the final interview weight (FPWT). More precise estimates and standard errors are in table A.4. Detail may not sum to total because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Parent and Family Involvement in Education Survey of the National Household Education Surveys Program (PFI-NHES), 2019.

<sup>10</sup> Though the difference between the percentage of parents who selected providing religious instruction (13 percent) as their most important reason and those who selected to emphasize family life together (8 percent) may seem different, there is no statistical significance using the Student's *t* statistic. In addition, no measurable difference was found between the percentage of homeschooled students whose parents selected to emphasize family life together (8 percent) as their most important reason and those who selected to provide a nontraditional approach to their child's education (8 percent), their child has other special needs (7 percent), and to provide moral instruction (7 percent).

## FIND OUT MORE

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<https://nces.ed.gov/pub-search/pubsinfo.asp?pubid=2023101>

Readers may also be interested in the following NCES products related to topics covered in this Statistics in Brief:

- Bielick, S. (2008). *1.5 Million Homeschooled Students in the United States in 2007* (NCES 2009-030). <https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2009030>.
- Bielick, S., Chandler, K., and Broughman, S. (2001). *Homeschooling in the United States: 1999* (NCES 2001-033). <https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2001033>.
- Cui, J., and Hanson, R. (2019). *Homeschooling in the United States: Results From the 2012 and 2016 Parent and Family Involvement Survey* (NCES 2020-001). <https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2020001>.
- Hanson, R., and Pugliese, C. (2020). *Parent and Family Involvement in Education: 2019* (NCES 2020-076). <https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2020076>.
- Henke, R., Kaufman, P., Broughman, S., and Chandler, K. (2000). *Issues Related to Estimating the Home Schooled Population in the United States With National Household Survey Data* (NCES 2000-311). <https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2000311>.
- Jackson, M., Kaiser, A., Battle, D., Wan, C., Quenneville, G., Kincel, B., and Cox, C. (2022). *National Household Education Surveys Program of 2019: Data File User's Manual* (NCES 2021-030REV). <https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2021030rev>.
- Princiotta, D., and Bielick, S. (2006). *Homeschooling in the United States: 2003* (NCES 2006-042). <https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2006042>.
- Princiotta, D., Bielick, S., and Chapman, C. (2004). *1.1 Million Homeschooled Students in the United States in 2003*. (NCES 2004-115). <https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2004115>.
- Redford, J., Battle, D., and Bielick, S. (2017). *Homeschooling in the United States: 2012* (NCES 2016-096REV). <https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2016096rev>.
- Wang K., Rathbun, A., and Musu, L. (2019). *School Choice in the United States: 2019* (NCES 2019-106). <https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2019106>.

# Technical Notes

## NHES Program Overview

Initiated in January 1999, the NCES National Household Education Surveys Program (NHES) consists of a set of surveys that collect information on a range of educational topics from a nationally representative sample of U.S. households. The topics covered include those that cannot be collected directly from school personnel or students. These topics have included early childhood care and education, children's readiness for school, before- and after-school activities, adult basic and work-related education, family involvement in education, school choice, and homeschooling.

This report uses data on homeschooling and virtual education from the 2019 Parent and Family Involvement in Education (PFI) survey of the 2019 NHES. Earlier administrations of the NHES—in 1996,<sup>11</sup> 1999, 2003, 2007, 2012, and 2016—also collected data on homeschooling. Data on full-time participation in virtual education are new to the 2019 PFI.

More information on the NHES and its topical surveys is available on the NHES home page at <https://nces.ed.gov/nhes/>. An overview of findings from the 2019 PFI (excluding homeschooled students) is available in Hanson and Pugliese (2020).

## Survey Methodology

The PFI data collection was conducted by the U.S. Census Bureau on behalf of NCES, from January through August of 2019. This section provides a brief description of the study methodology. For more extensive information on the study

methodology and data collection procedures, readers are advised to consult the *National Household Education Surveys Program of 2019: Data File User's Manual* (Jackson et al. 2022).<sup>12</sup>

The 2019 NHES sample was selected using a two-stage address-based sampling frame. The first sampling stage selected residential addresses, with oversampling of households from census tracts with higher percentages of Black and Hispanic households; at this stage, households were asked to complete a screener questionnaire. At the second stage, the results of the screener were used to sample one child from each household to be the focus of a topical survey. The 2019 NHES included two topical surveys: the PFI survey and the Early Childhood Program Participation (ECPP) survey. A within-household sampling scheme controlled for the number of children sampled for topical questions in each household. No household received more than one survey; one child was sampled for either the PFI or ECPP survey.

The 2019 data were collected through a multi-modal administration process, mainly using web with paper surveys for nonresponse follow-up. Telephone interviews were used for a small number of cases (when respondents called in with a question and agreed to complete via telephone). The survey materials were offered in both English and Spanish.

The 2019 PFI has a target population of noninstitutionalized children in the U.S., ages 3 to 20, who were enrolled in kindergarten

through 12th grade in a public or private school, or who were homeschooled for the equivalent grades, in 2018-19. The parents of roughly 16,450 students responded to the PFI. As in past NHES reports on homeschooling, the analysis for this report (excluding the data-quality analyses in appendix B) was restricted to students ages 5 to 17, reducing the sample to about 15,700 students. When weighted, the sample represents the total of approximately 51.4 million enrolled or homeschooled students in the United States ages 5 to 17.

## Variables and Definitions

Exhibit 1 lists the variables used in the analysis to answer study questions 1-3.

Students were classified as homeschooled if the parent indicated in the following two survey items that the child was homeschooled for all or some classes or subjects:

Item 4 (variable HOMESCHLX)  
*Some parents decide to educate their children at home rather than send them to a public or private school located in a physical building.*

*Is this child being schooled at home instead of at school for at least some classes or subjects?*

- Yes
- No

Item 5 (variable HMSCHARR)  
*Which of the following statements best describes your homeschooling arrangement for this child?*

- This child is homeschooled for all classes or subject areas, which may include co-ops, virtual/ cyber/online courses, and home instruction provided by a tutor or teacher*

<sup>11</sup> The 1996 data collection was experimental, and official statistics were not developed from the collection.

<sup>12</sup> The NHES 2019 *Data File User's Manual* (Jackson et al. 2022) also provides a 2019 homeschooling rate and full-time virtual education rate, but those rates were calculated differently; see "Rate comparisons to *Data File User's Manual*" in appendix B for details.

## Exhibit 1. Variables used in the main body of the report

Variable label	Variable name
Homeschooled for some classes or subjects	HOMESCHLX
Homeschooling arrangement	HMSCHARR
Reason to homeschool—school environment	HSSAFETYX
Reason to homeschool—dissatisfied with instruction	HSDISSATX
Reason to homeschool—religious instruction	HSRELGON
Reason to homeschool—moral instruction	HSMORAL
Reason to homeschool—health problem	HSDISABLX
Reason to homeschool—temporary illness	HSILLX
Reason to homeschool—special needs	HSSPCLNDX
Reason to homeschool—nontraditional education	HSALTX
Reason to homeschool—emphasize family life together	HSFMLY
Reason to homeschool—other	HSOTHERX
Most important reason to homeschool	HSMOSTX
Homeschooled child enrolled in school	HSENRL
Hours attend school each week	SCHLHRSWK
Internet homeschool instruction	HSINTNET
Child enrolled in online, virtual, or cyber courses	EINTNET
Current grade	ALLGRADEX
Age of child as of Dec 31, 2018	AGE2018
Detailed race and ethnicity of child	RACEETH2
Census region where child lives	CENREG
Child sex	CSEX
First parent/guardian highest grade level completed	P1EDUC
Second parent/guardian highest grade level completed	P2EDUC
Locale of household	ZIPLOCL
Final interview weight	FPWT
Final interview replicate weight 1–80	FPWT1-FPWT80

SOURCE: U.S. Department of Education, National Center for Education Statistics, Parent and Family Involvement in Education Survey of the National Household Education Surveys Program (PFI-NHES), 2019.

<p>— <i>This child is homeschooled for <u>some</u> classes or subject areas and is also enrolled in a public or private school</i></p> <p>— <i>This child is <u>not</u> homeschooled. This child is enrolled in a public or private school for all classes or subject areas</i></p> <p>From this initial pool of homeschooled students, cases were excluded if the parent reported in later items that the student</p>	<p>was homeschooled only because of a temporary illness (item 22, variables HSSAFETYX-HSOTHERX), or that the student attended a public or private school for more than 24 hours a week (item 42, variable SCHLHRSWK).</p> <p>Students were classified as enrolled in full-time virtual education if the parent indicated in the following item that all of the child’s courses were virtual:</p>	<p>Item 9/43<sup>13</sup> (variables HSINTNET, EINTNET)</p> <p><i>Is this child enrolled in any online, virtual, or cyber courses?</i></p>
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<sup>13</sup> Throughout this report, items that are in both the homeschooled and enrolled sections of the PFI are listed such that the first item listed (prior to the slash) is from the homeschooled section and the second item (after the slash) is from the enrolled section.

*Do not include courses that use the Internet only for selected assignments.*

- Yes, all the child's courses are online, virtual, or cyber*
- Yes, about half or more than half of the child's courses are online, virtual, or cyber*
- Yes, less than half of the child's courses are online-virtual, or cyber*
- No, none of this child's courses are online, virtual, or cyber*

From this initial pool of full-time virtual education students, cases were excluded if the parent of a homeschooled child reported that the child was homeschooled only because of a temporary illness (item 22, variables HSSAFETYX-HSOTHERX), or if the parent of an enrolled student reported that the child was in virtual education only because of a temporary illness (item 44, variables ADVCCRSE-ONLINEOTH).

## Sources of Error in the Estimates

Estimates produced using data from the NHES are subject to two types of errors: sampling error and nonsampling error. Nonsampling error involves errors made in the collection and processing of data. Sampling error occurs because the data are collected from a sample, rather than a census, of the population.

**Nonsampling Error.** Nonsampling error includes variations in the estimates caused by population coverage limitations and data collection, processing, and reporting procedures. The sources of nonsampling error are typically problems such as unit and item nonresponse, differences in respondents' interpretations of the meaning of survey questions, response differences related to the time of the year when the survey

was conducted, the tendency for respondents to give socially desirable responses, and mistakes in data preparation. In general, it is difficult to identify and estimate either the amount of nonsampling error or the bias caused by this error. For each NHES survey, efforts were made to prevent such errors from occurring and to compensate for them, where possible. For instance, during the survey design phase, cognitive interviews were conducted to assess respondents' knowledge of the survey topics, their comprehension of questions and terms, and the sensitivity of items.

**Sampling Error.** The sample of households selected for the NHES is just one of many possible samples that could have been selected from all households based on addresses. Therefore, estimates produced from this survey may differ from estimates that would have been produced from other samples. This type of variability is called sampling error because it arises from using a sample of households rather than all households. The standard error is a measure of the variability due to sampling when estimating a statistic; standard errors for estimates presented in this report were computed using a jackknife replication method. Standard errors can be used as a measure of the precision expected from a particular sample. For example, the probability that a complete census count would differ from the sample estimate by less than 1.96 standard errors is about 95 percent. Standard errors for all estimates presented in this report are provided in appendix A.

## Weighting

To produce estimates that represent national totals (rather than sample characteristics), the analyses in this report (excluding appendix B) were weighted using the probabilities of selection of the respondents and

other adjustments to account for nonresponse and coverage bias. The weight used in this report is FPWT.

## Response Rates and Nonresponse Bias

The 2019 NHES screener survey was completed by 108,978 households, for a weighted household unit response rate of 63.1 percent. The PFI questionnaire was completed for 16,446 students, for a weighted PFI unit response rate of 83.4 percent, and an overall unit response rate (the product of the screener and PFI response rates) of 52.6 percent.

Because the NCES Statistical Standards require a bias analysis if the response rate at any phase of a data collection falls below 85 percent, the 2019 NHES included a bias analysis to evaluate whether nonresponse at the unit and item levels impacted the estimates. A number of strategies were used to evaluate the level of bias in the 2019 NHES estimates. Results of these analyses suggest a small number of demographic characteristics were underrepresented in the NHES survey but that this underrepresentation is ameliorated with nonresponse weighting adjustments. Chapter 10 in Jackson et al. (2022) contains a detailed description of these nonresponse bias analyses.

## Statistical Procedures

Comparisons of estimates in the main body of this report (excluding appendix B) have been tested for statistical significance using the Student's *t* statistic to ensure that the differences are larger than those that might be expected due to sampling variation. All statements cited in the main body of the report are statistically significant at the  $p < .05$  significance level (indicating that there is less than a 5 percent chance that the difference

occurred by chance), using two-tailed statistical tests. Student's  $t$  values were computed to test the difference between estimates with the following formula:

$$t = \frac{E_1 - E_2}{\sqrt{se_1^2 + se_2^2}}$$

where  $E_1$  and  $E_2$  are the estimates to be compared and  $se_1$  and  $se_2$

are their corresponding standard errors.

The threshold for determining significance at the 95 percent level for all comparisons in this report was  $t = 1.96$ . The standard errors of the estimates for different subpopulations can vary considerably and should be taken into account when drawing conclusions about the estimates

being compared. No adjustments for multiple comparisons were made in the analyses presented in this report. As a result, an increase in Type I error is possible. Type I error is the observation of a statistical difference when, in fact, there is none. Readers are cautioned not to make causal inferences about the data presented in this report.

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## Appendix A. Supporting Tables

**Table A.1. Homeschooling, full-time virtual education, and instruction-at-home rates for students ages 5 to 17 in kindergarten through grade 12 or the grade equivalent, by student and family characteristics: 2018–19**

Characteristic	(Standard errors in parentheses)					
	Homeschooling rate (including full-time virtual homeschoolers) <sup>1</sup>		Full-time virtual education rate <sup>2</sup>		Instruction-at- home rate <sup>3</sup>	
<b>Overall rate</b>	<b>2.8</b>	<b>(0.18)</b>	<b>1.2</b>	<b>(0.10)</b>	<b>3.7</b>	<b>(0.19)</b>
Locale of student's household						
City	2.5	(0.29)	1.0	(0.17)	3.4	(0.34)
Suburban	2.4	(0.26)	1.4	(0.17)	3.4	(0.29)
Town	2.2	(0.39)	1.1	(0.28)	3.0	(0.47)
Rural	4.7	(0.54)	1.4	(0.27)	5.5	(0.56)
Student's sex						
Male	2.7	(0.23)	1.2	(0.14)	3.5	(0.24)
Female	2.9	(0.25)	1.3	(0.14)	3.9	(0.26)
Student's race/ethnicity						
Asian or Pacific Islander, non-Hispanic	‡	(†)	‡	(†)	0.8 !	(0.36)
Black, non-Hispanic	1.2	(0.36)	1.5	(0.36)	2.5	(0.51)
Hispanic	1.9	(0.32)	0.9	(0.19)	2.7	(0.36)
White, non-Hispanic	4.0	(0.28)	1.5	(0.15)	4.9	(0.30)
Other race, non-Hispanic <sup>4</sup>	2.8	(0.60)	0.8	(0.25)	3.5	(0.63)
Student's grade level						
Kindergarten–2nd grade	2.8	(0.35)	0.3 !	(0.09)	3.1	(0.37)
3rd–5th grade	2.9	(0.32)	0.6	(0.12)	3.3	(0.35)
6th–8th grade	3.4	(0.44)	2.0	(0.33)	4.6	(0.46)
9th–12th grade	2.3	(0.26)	2.0	(0.21)	3.8	(0.32)
Parents' highest education level						
Less than high school	2.9	(0.69)	1.6	(0.47)	4.0	(0.81)
High school graduate or equivalent	1.8	(0.34)	1.5	(0.32)	2.7	(0.40)
Vocational/technical or some college	2.9	(0.30)	1.8	(0.21)	4.1	(0.35)
Bachelor's degree	3.3	(0.32)	0.8	(0.14)	3.9	(0.33)
Graduate or professional school	3.1	(0.34)	0.7	(0.12)	3.6	(0.36)
Family poverty status <sup>5</sup>						
Poor	2.6	(0.49)	1.9	(0.44)	3.9	(0.57)
Nonpoor	2.9	(0.19)	1.1	(0.09)	3.7	(0.19)
Region						
Northeast	2.0	(0.35)	1.1	(0.28)	3.0	(0.43)
South	3.4	(0.29)	1.5	(0.20)	4.2	(0.32)
Midwest	2.3	(0.30)	1.1	(0.20)	3.0	(0.35)
West	3.1	(0.36)	1.1	(0.17)	4.0	(0.39)

See notes at end of table.



**Table A.1. Homeschooling, full-time virtual education, and instruction-at-home rates for students ages 5 to 17 in kindergarten through grade 12 or the grade equivalent, by student and family characteristics: 2018–19—Continued**

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† Not applicable.

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

‡ Reporting standards not met. The coefficient of variation for this estimate is 50 or greater.

<sup>1</sup> Homeschooled students are those who are homeschooled for all or some classes, excluding those enrolled in school for more than 24 hours per week or who are homeschooled only because of a temporary illness. Full-time virtual homeschoolers are homeschooled students for whom all courses are taken virtually but also fit the definition of a homeschooled student.

<sup>2</sup> Full-time virtual education includes students for whom all courses are taken virtually, excluding those who are taking virtual courses only because of a temporary illness, regardless of whether the parent considers the child to be homeschooled or not.

<sup>3</sup> Instruction-at-home rate is the rate at which students are homeschooled or in full-time virtual education regardless of whether the parent considers the child to be homeschooled or not.

<sup>4</sup> Other race, non-Hispanic includes American Indian/Alaska Native children who are not Hispanic and children who are Two or more races and not Hispanic.

<sup>5</sup> Determined by the federal government, the poverty threshold is the income necessary to meet the household's needs, given the household's size and composition. Income is collected in categories in the survey, rather than as an exact amount, and therefore the poverty measures used in this table are approximations of poverty. Thresholds to define poverty are based on weighted averages from 2018 Census poverty thresholds. A household is considered "poor" if a household of a particular size matches the income categories listed here: household size is 2-3 and household income is less than or equal to \$20,000; household size is 4-6 and household income is less than or equal to \$30,000; household size is 7-8 and household income is less than or equal to \$40,000; and household size is 9 or more and household income is less than or equal to \$50,000. Otherwise, the household is considered to be "nonpoor."

NOTE: Data were weighted using the final interview weight (FPWT) and the final interview replicate weights (FPWT1-FPWT80).

SOURCE: U.S. Department of Education, National Center for Education Statistics, Parent and Family Involvement in Education survey of the National Household Education Surveys Program (PFI-NHES), 2019.

**Table A.2. Percentage of students ages 5 to 17 in kindergarten through grade 12 or the grade equivalent who are in full-time virtual education and in-person education, by school enrollment pattern: 2018–19**

Enrollment pattern	(Standard errors in parentheses)			
	Full-time virtual education		In-person education	
Enrolled	0.9	(0.09)	99.1	(0.09)
Homeschooled	13.4	(2.27)	86.6	(2.27)
Instruction-at-home	33.6	(2.50)	66.4	(2.50)

NOTE: In the 2019 NHES redesign, combining of the PFI-Homeschool questionnaire and the PFI-Enrolled questionnaire allowed parents of full-time virtual school students to report about the child’s virtual schooling experience, regardless of whether the parent considers the child to be homeschooled or not. If the parent did not report their child was homeschooled, they were asked about virtual education in the items for public and private school enrollment. Full-time virtual education includes students for whom all courses are taken virtually, excluding those who are taking virtual courses only because of a temporary illness, regardless of whether the parent considers the child to be homeschooled or not. In-person education excludes those in full-time virtual education, whether homeschooled or enrolled in public or private school in a physical building. Enrolled students are those who are not homeschooled and can include students who take all or some courses virtually or in a public or private school in a physical building. Homeschooled students are those who are homeschooled for all or some classes, excluding those enrolled in school for more than 24 hours per week or who are homeschooled only because of a temporary illness. Instruction-at-home are students who are homeschooled or in full-time virtual education regardless of whether the parent considers the child to be homeschooled or not. Data were weighted using the final interview weight (FPWT) and the final interview replicate weights (FPWT1-FPWT80). Detail may not sum to totals due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Parent and Family Involvement in Education Survey of the National Household Education Surveys Program (PFI-NHES), 2019.

**Table A.3. Enrollment, homeschooling, full-time virtual education, and instruction-at-home rates for students ages 5 to 17 in kindergarten through grade 12 or the grade equivalent: 2018–19**

Instruction type	Rate	Standard error
Enrolled in-person	96.3	0.19
Instruction-at-home	3.7	0.19
Homeschooled	2.8	0.18
Full-time virtual education	1.2	0.10
Homeschooled in-person	2.5	0.17
Full-time virtual homeschooled only	0.4	0.07
Full-time virtual enrolled only	0.9	0.08

NOTE: Enrolled in-person students are those who are not homeschooled and excludes those in full-time virtual education. Instruction-at-home are students who are homeschooled or in full-time virtual education regardless of whether the parent considers the child to be homeschooled or not. Homeschooled students are those who are homeschooled for all or some classes, excluding those enrolled in school for more than 24 hours per week or who are homeschooled only because of a temporary illness. Full-time virtual education includes students for whom all courses are taken virtually, excluding those who are taking virtual courses only because of a temporary illness, regardless of whether the parent considers the child to be homeschooled or not. Homeschooled in-person students excludes those in full-time virtual education. Full-time virtual homeschooled are homeschooled students for whom all courses are taken virtually. Full-time virtual enrolled students are students for whom all courses are taken virtually and the parent did not consider the student homeschooled, excluding those who are taking virtual courses only because of a temporary illness. Data were weighted using the final interview weight (FPWT) and the final interview replicate weights (FPWT1-FPWT80). Detail may not sum to totals due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Parent and Family Involvement in Education Survey of the National Household Education Surveys Program (PFI-NHES), 2019.

**Table A.4. Percentage of students ages 5 to 17 in kindergarten through grade 12 or the grade equivalent who were homeschooled, by reasons parents gave for homeschooling and by their most important reason for homeschooling: 2018–19**

Reason	(Standard errors in parentheses)	
	Selected as a reason <sup>1</sup>	Selected as the most important reason
To provide religious instruction	58.9 (2.89)	13.2 (1.98)
To provide moral instruction	74.7 (2.44)	6.7 (1.31)
Concern about the school environment <sup>2</sup>	80.3 (2.22)	25.4 (2.86)
Dissatisfaction with schools' academic instruction	72.6 (2.65)	14.8 (2.00)
To provide a nontraditional approach to child's education	54.2 (2.69)	7.8 (1.46)
To emphasize family life together	74.6 (2.19)	8.5 (1.98)
Child has other special needs	23.1 (2.25)	7.4 (1.12)
Child has a physical or mental health problem	15.6 (2.15)	2.9 (0.84)
Child has a temporary illness	2.8 (0.79)	‡ (†)
<b>Other reasons<sup>3</sup></b>	<b>33.4 (2.83)</b>	<b>12.8 (2.32)</b>

† Not applicable.

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

<sup>1</sup> Respondents could choose more than one reason.

<sup>2</sup> Based on the response to the question, "You are concerned about the school environment, such as safety, drugs, or negative peer pressure?"

<sup>3</sup> "Other reasons" parents gave for homeschooling include bullying, finances, travel, and a more flexible schedule.

NOTE: Data were weighted using the final interview weight (FPWT) and the final interview replicate weights (FPWT1-FPWT80).

SOURCE: U.S. Department of Education, National Center for Education Statistics, Parent and Family Involvement in Education Survey of the National Household Education Surveys Program (PFI-NHES), 2019.

## Appendix B. Item Quality Analyses

As described below, the 2019 Parent and Family Involvement survey (PFI) entailed a major redesign of previous PFI instruments, combining two separate PFI instruments into one instrument (for both paper and web versions) and expanding the information collected on virtual education. Thus, prior to using the data collected through the 2019 survey to examine homeschooling and virtual education, it was important to assess the quality of the new and revised items in the redesigned PFI. This appendix presents the findings from analyses of the response rates and consistency rates for homeschooling and virtual education items in the 2019 PFI, and documents how these findings supported the definition of homeschooling and informed the definition of full-time virtual education used in this report.

### PFI Changes in 2019

To identify households eligible for the PFI, the NHES includes a screener question that asks for each household child, “Is this child/youth currently in...”: “Homeschool instead of attending a public or private school for some or all classes,” “Public or private school, or preschool,” “College, university, or vocational school,” or “Not in school.” Households with eligible children are then mailed a topical instrument, in this case, the PFI.

In 2012 and 2016, households selected at the screener stage to receive the PFI completed one of two versions of the PFI questionnaire—one for parents of students identified in the screener as enrolled in school (PFI-Enrolled) and one for parents of students identified as homeschooled (PFI-Homeschool). In 2019, the NHES program combined the PFI-Enrolled

and PFI-Homeschool questionnaires into one instrument with separate sections for homeschooled and enrolled students; all screener cases selected for the PFI were routed to this combined PFI, where they completed the relevant PFI sections based on their responses to the initial set of PFI questions asking about the student’s schooling patterns. In addition, a set of detailed virtual education items was added to both the homeschooled and enrolled sections; these items ask parents to identify how much of their child’s coursetaking is virtual, to provide the number of virtual courses taken by their child and the hours of such instruction, and to describe their experiences with virtual education (e.g., reasons for choosing virtual courses for their child).

Given these changes to the PFI, the analyses described here were intended to: (1) evaluate the quality of the homeschooling and virtual education items on the redesigned 2019 PFI, and (2) determine the most appropriate items for measuring homeschooling and full-time virtual education. To evaluate how the items performed in the NHES sample, the analyses were conducted using unweighted data. In accordance with NCES standards, and to maintain respondent confidentiality, the unweighted analyses are mainly presented here as percentages or percentage distributions, rather than response frequencies. When response frequencies are reported, they are rounded to the nearest tens. Finally, all comparisons discussed in this appendix are based on the observed sample data rather than on inferential testing, and should not be assumed to apply to the population of all U.S. students or households.

### Overview of Items

**Table B.1** provides an overview of the homeschooling items in the 2019 screener and PFI that can be used to identify or operationally define homeschooled students. The table provides the unweighted respondent counts and unweighted percentage distributions for each homeschooling item.

The 2019 PFI uses a series of four items to identify students who are homeschooled and for whom the full homeschooling section of the survey applies: item 2h, item 3 (paper respondents only),<sup>1</sup> item 4, and item 5. Items 2h and 3 direct parents to either the homeschooling or enrolled schooling sections of the instrument. After confirming in item 1 (not in table B.1) that the sampled child is enrolled in grades K through 12 (or an ungraded equivalent), parents were asked in item 2 to select the type(s) of education settings the child attends from the following list:

- a) A public school located in a physical building, including charter school;
- b) A private Catholic school located in a physical building;
- c) A private, religious but not Catholic school located in a physical building;
- d) A private, not religious school located in a physical building;
- e) Full-time online, virtual, or cyber school for grades kindergarten through 12;
- f) College, community college, or university that is online, virtual, or cyber;

<sup>1</sup> This appendix mainly focuses on items 2, 4, and 5 because item 3 is only found on the paper survey and is used only to skip respondents based on their responses to item 2.

**Table B.1 Rounded sample counts and percentage distributions for selected homeschooling items in the Screener and Parent and Family Involvement in Education surveys: 2018–19**

Item	Count	Percent
<i>Screener Survey item</i>		
<b>Enrollment (PENROL)</b>		
Homeschool instead of attending a public or private school for some or all classes	700	4
Public or private school, or preschool	15,640	95
College, university or vocational school	10	<1
Not in school	<10	<1
<i>Parent and Family Involvement Survey items</i>		
<b>2h. Child is homeschooled, including co-ops (EDCHSFL)</b>		
Yes	490	6
No	8,390	94
<b>3. Marked "Yes" to Item 2h ("Student is homeschooled, including co-ops") (EDHMSCHL) (paper respondents only)</b>		
Yes	120	3
No	4,100	97
<b>4. Homeschooled some classes or subjects (HOMESCHLX)</b>		
Yes	500	44
No	630	56
<b>5. Homeschooling arrangement (HMSCHARR)</b>		
Homeschooled for all classes or subjects	450	68
Homeschooled for some classes or subjects	50	8
Not homeschooled	160	24
<b>22. Reason for homeschooling - Child has temporary illness (HSILLX)</b>		
Yes	20	4
No	530	96
<b>29. Child also enrolled in a school (HSENRL)</b>		
Yes	130	22
No	450	77
<b>30. School where child is enrolled for most hours (SCHLMOSTHRS) (paper respondents only)</b>		
Public school in physical building	3,590	89
Private school in physical building	380	9
Online, virtual, or cyber school	40	1
Homeschooled only	10	<1
<b>42. Hours child attends a school each week (SCHLHRSWK)</b>		
0 hours. Child's school is not located in a physical building	100	1
1–10 hours	1,460	9
11–24 hours	930	6
More than 24 hours	13,480	84

See notes at end of table.

**Table B.1. Rounded sample counts and percentage distributions for selected homeschooling items in the Screener and Parent and Family Involvement in Education surveys: 2018–19—Continued**

Item	Count	Percent
<b>Q59. Type of school where child is enrolled for most hours (SCHLDESC) (paper respondents only)</b>		
Homeschool for ALL subject areas	150	4
Full-time online, virtual, or cyber school	120	3
Any other type of school	3,370	93

NOTE: Unweighted, unedited data. Data were edited to protect respondent confidentiality, but were not edited to correct for range errors, inconsistent responses, or skip errors, or to impute for missing data. The variable name for each item is listed in parentheses. Item counts and percentages exclude item nonrespondents. Detail may not sum to totals because of rounding. SOURCE: U.S. Department of Education, National Center for Education Statistics, Screener survey and Parent and Family Involvement in Education survey of the National Household Education Surveys Program (PFI-NHES), 2019.

g) College, community college, or university located in a physical building; and

h) Student is homeschooled, including co-ops.

In the web instrument, parents were automatically routed to the homeschooling or enrolled sections based on their response to item 2h. In the paper instrument, item 3 directed parents to the homeschooling section if they marked “yes” to the homeschooling option in item 2h; all other parents were directed to the enrolled schooling section. In 2019, about 490 parents reported that their child was homeschooled in item 2h.

After these initial enrollment questions, the first two items in the homeschooling section (items 4 and 5) confirm that the child is homeschooled:

- Item 4: “Is this child being schooled at home instead of at school for at least some classes or subjects?” (Yes/No) and
- Item 5: “Which of the following statements best describes your homeschooling arrangement for this child?” (This child is homeschooled for all classes or subject areas, which may include co-ops, virtual/cyber/online courses, and home instruction provided by a private tutor or teacher/This child is homeschooled for some classes or subject areas and is also enrolled in a public or private school/This child is not homeschooled. This child is enrolled in a public or private school for all classes or subject areas)

If parents answered that their child was homeschooled for at least some classes or subjects in these two questions, they continued to answer questions in the homeschooling section; otherwise, they were directed to the enrolled schooling section. In item 4, about 500 parents indicated that their child was homeschooled for at least some classes or subjects. In item 5, about 490 parents indicated that their child was homeschooled for all or some classes or subjects. From the group of about 490 parents who indicated in item 5 their child was homeschooled for all or some classes or subjects, cases were excluded when the child was homeschooled only because of temporary illness (in item 22) or when the number of hours the child was enrolled in a school was reported as “More than 24 hours” (in item 42).

As indicated above, item 2e is a response option where parents can indicate if their child is enrolled full-time in a virtual school for grades kindergarten through 12.

Regardless of answers to this question, subsequent virtual education items are asked of all parents. These items are asked once of all parents in the web version of the PFI, but are asked separately in both the homeschooling and enrolled sections of the paper version. The unweighted counts and percentage distributions for the virtual education items are presented in [table B.2](#).

In item 2e, about 300 parents answered that their child was enrolled full time in a virtual school; about 60 parents of homeschooled students and about 240 parents of enrolled students gave this answer (subgroup counts not in tables).

The first item in the virtual education section(s) is item 9/43, which asks for the extent of the child’s enrollment in virtual education.<sup>2</sup> Parents were given

<sup>2</sup> Throughout this appendix, items that are in both the homeschool and traditionally enrolled topical sections are listed such that the first item number listed (prior to the slash) is from the homeschool section and the second item number (after the slash) is from the enrolled section.

four response options: “Yes, all the child’s courses are online, virtual, or cyber,” “Yes, about half or more than half of the child’s courses are online, virtual, or cyber,” “Yes, less than half of the child’s courses are online, virtual, or cyber,” or “No, none of this child’s courses are online, virtual, or cyber.” For this item, about 290 parents indicated that all of their child’s courses were online, virtual, or cyber, with about 70 parents of homeschoolers and about 210 parents of enrolled students choosing this option (subgroup counts not in tables).<sup>3</sup>

This section laid the foundation for the next two sections by presenting basic information about key homeschooling and virtual education items. The next two sections examine item nonresponse rates and logical consistencies among related items.

### Item-level nonresponse rates

High rates of item nonresponse may indicate that a question wording was not understood by parents, or that response options were not

clear or did not adequately describe the parent’s experience; they also indicate a potential for item-level nonresponse bias. In this appendix, item-level nonresponse rates higher than 15 percent are highlighted for consideration per NCES statistical standard 2-2-4 (Seastrom 2014). The appendix also highlights item-level nonresponse rates greater than 10 percent as a more conservative indication of item quality issues. Item-level nonresponse rates were calculated using unweighted data that were not imputed, with one

**Table B.2. Rounded sample counts and percentage distributions for selected virtual education items in the Parent and Family Involvement in Education survey: 2018–19**

Item	Count	Percent
<b>2e. Attends full-time online, virtual, or cyber school for grades kindergarten through 12 (EDCINTK12)</b>		
Yes	300	1.8
No	16,140	98.2
<b>9/43. Enrolled in online, virtual, or cyber courses (HSINTNET/EINTNET)</b>		
Yes, all courses	290	1.7
Yes, half or more courses	210	1.3
Yes, less than half	880	5.4
No	15,070	91.6
<b>13/47. Number of virtual courses child takes (HSINTNUM/INTNUM)</b>		
1 course	630	45.8
2-5 courses	550	40.3
6-10 courses	180	13.0
11 or more courses	10	1.0
<b>15/49: Number of hours child spends in virtual courses per week (HSINTHRS/INTHRS)</b>		
Fewer than 10 hours	940	68.7
10-24 hours	320	23.1
More than 24 hours	110	8.3

NOTE: Unweighted, unedited data. Data were edited to protect respondent confidentiality, but were not edited to correct for range errors, inconsistent responses, or skip errors, or to impute for missing data. The variable name for each item is listed in parentheses. Item numbers and variable names separated by a slash indicate the item or variable in the homeschooled section of the survey, followed by the item or variable in the enrolled section of the survey. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Parent and Family Involvement in Education survey of the National Household Education Surveys Program (PFI-NHES), 2019.

<sup>3</sup> Subgroup sizes do not sum to total due to rounding.

exception.<sup>4</sup> For grid items, the grid sub-items were edited so that blank responses were set to “no” if parents answered “yes” to any other item in the grid, and nonresponse rates were calculated after that editing as the percentage of respondents who did not complete any subitems within the grid.<sup>5</sup>

## Homeschooling items

To examine nonresponse rates for the homeschooling items, this section first examines item nonresponse rates for 2019, and then compares 2019 item nonresponse rates to 2016 rates. In 2019, across all 20 homeschooling items,<sup>6</sup> the average item nonresponse rate was 6.8 percent, with non-grid and grid items having item nonresponse rates of 7.0 percent and 5.8 percent, respectively (table B.3). Both averages are under the more conservative 10 percent threshold for item nonresponse rates. For the sequence of four initial items used to identify homeschoolers (items 2h, 3, 4, and 5), all nonresponse rates were under 10 percent.

The change from separate homeschooled and enrolled schooling PFI questionnaires in 2016 to a combined PFI questionnaire in 2019 warrants an investigation of changes in nonresponse rates between these administrations. Table B.4 includes nonresponse

<sup>4</sup> The final NHES data file is fully imputed, with flag variables created to indicate whether a variable was imputed and the method of imputation. See chapter 6 in the NHES:2019 Data File User's Manual (Jackson et al. 2022) for more information.

<sup>5</sup> Grid items are questions where respondents are asked to respond to multiple sub-items within one question, providing a single response for each sub-item. For example, the PFI homeschooling section includes a question about reasons for homeschooling, and respondents are asked to provide a “yes” or “no” response for each reason from a list provided. Subitems that allowed respondents to write in a response that was not offered (i.e., an “other-specify,” write-in response) are not discussed in the text or included in the item nonresponse analysis.

<sup>6</sup> This total does not include item 3 (asked in paper mode only).

rates for the 14 homeschooling items that were asked in both the 2016 PFI and the 2019 PFI. The 2019 NHES Data File User's Manual (Jackson et al. 2022) used five percentage points as the threshold for a meaningful difference (i.e., of practical significance) for cross-year comparisons; that threshold is used here as well.

Across the 2016 homeschooling items, the average nonresponse rate was 7.7 percent—1.5 percentage points higher than the average nonresponse rate of 6.2 for comparable items in the 2019 PFI (table B.4). Overall, six items from 2019 had item nonresponse rates that differed from the 2016 nonresponse items by at least five percentage points, with the 2019 rates being higher for three of the six. The three items that had higher nonresponse rates in 2019—items 4, 6, and 8—each had a 2019 nonresponse rate below 10 percent.

These analyses of item-level nonresponse rates for the 2019 homeschooling PFI do not suggest problems with these items. The differences in item nonresponse rates between 2016 and 2019 are not large enough or systematic enough to suggest problems with the homeschooling items in the 2019 combined instrument.

## Virtual education items

To evaluate item nonresponse rates for the virtual education items, this analysis combines responses to items that were asked in both the homeschooling and enrolled sections of the questionnaire. Table B.5 shows that, across all virtual education items, the average item nonresponse rate was 5.7 percent, with a higher average rate for non-grid items (6.5 percent) than for grid items (3.7 percent). None of these virtual education items had nonresponse rates above the 15 percent threshold; using the more

conservative 10 percent threshold, only one item (item 13/47, which asks about the number of virtual courses) had a nonresponse rate above this level (11.5 percent). The item nonresponse rate for the initial virtual education section item asking whether the child is enrolled in virtual education (item 9/43) was relatively low, at 0.6 percent.

These analyses of item-level nonresponse rates for the homeschooling and virtual education items on the 2019 PFI do not suggest problems with these items in general. However, additional analyses (not reported here due to confidentiality concerns) found that item nonresponse rates were relatively high for respondents who did not have any education beyond high school. These respondents had an average item nonresponse rate of 16 percent on homeschooled items and 10 percent on virtual education items. These findings suggest that caution is warranted when examining homeschooling or virtual education rates by parents' education level or by factors that are related to parents' education level (e.g., household income).

## Item Consistency

Relatively low rates of consistency between responses to related items may indicate that a pair of items are not measuring a concept in similar ways. An examination of consistencies between item responses aids in the identification of items that are appropriate for measuring the concepts of interest. Consistency rates are presented in table B.6.

## Homeschooling items

**Screeners-to-topical consistency rates.** Consistency between the screener enrollment item and the homeschooling enrollment items is observed when the parent's



**Table B.3. Unweighted item nonresponse rates for homeschooling items in the Parent and Family Involvement in Education survey: 2018–19**

Item	Nonresponse rate (Percent)
<b>Average total item nonresponse rate</b>	<b>6.8</b>
<b>Average item nonresponse rate, nongrid items</b>	<b>7.0</b>
<b>Average item nonresponse rate, grid items</b>	<b>5.8</b>
2. Type of school (EDCPUB-EDCHSFL) <sup>1</sup>	0
3. Mark Yes to 2h (EDHMSCHL) <sup>2</sup>	1.1
4. Homeschooled for some classes or subjects (HOMESCHLX)	6.8
5. Homeschooling arrangement (HMSCHARR)	7.7
6. Homeschool instruction by homeschool group (HSCOOP)	8.1
7. Person providing homeschool instruction (HSWHOX)	6.9
8. Homeschool instruction by tutor (HSTUTOR)	7.3
16. Homeschool teaching style (HSSTYL)	8.1
17. Participated in activities while homeschooled (HSKACTIV)	7.7
18. Online, virtual, or cyber resources (HSINTLIB-HSINTOTH) <sup>1</sup>	5.0
19. Homeschool physical curriculum source (HSCLIBRX-HSCOTH) <sup>1</sup>	12.1
20. Courses online or in person (HSCOURS)	5.4
21. Homeschooled (HOMEKX-HOME12)	0
22. Reason to homeschool (HSSAFETYX-HSOTHERX) <sup>1</sup>	6.2
23. Most important reason to homeschool (HSMOSTX)	7.6
24. Home instruction subject area (HSSUBJ1-HSSUBJ10)	13.1
25. Participate in homeschool activities (HSASSNX)	7.1
26. Participate in homeschool activities—times (HSFREQX)	9.0
27. Member of homeschool organization (HSNATL)	5.6
28. Military family that frequently relocates (HSMLTY)	5.4
29. Homeschooled child enrolled in school (HSENRL)	6.2

<sup>1</sup> Grid item. Nonresponse rates for grid items (items with lettered subitems, each of which requires a response) were calculated using the percentage of respondents who did not respond to any subitems within the grid; other-specify write-in responses were excluded.

<sup>2</sup> Paper-only item. Not included in average nonresponse rates.

NOTE: Unweighted, unedited data. Data were edited to protect respondent confidentiality, but were not edited to correct for range errors, inconsistent responses, or skip errors, or to impute for missing data. The variable name for each item is listed in parentheses.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Parent and Family Involvement in Education survey of the National Household Education Surveys Program (PFI-NHES), 2019.

**Table B.4. Unweighted item nonresponse rates for homeschooling items in the Parent and Family Involvement in Education survey: 2018–19 and 2015–16**

Item	2018–19 (Percent)	2015–16 (Percent)
<b>Average total item nonresponses rate</b>	<b>6.2</b>	<b>7.7</b>
<b>Average item nonresponses rate, non-grid items</b>	<b>6.2</b>	<b>7.6</b>
<b>Average item nonresponse rate, grid items</b>	<b>6.0</b>	<b>8.0</b>
4. Homeschooled for some classes or subjects (HOMESCHLX)	6.8	0.8
5. Homeschooling arrangement (HMSCHARR)	7.7	19.8
6. Homeschool instruction by homeschool group (HSCOOP)	8.1	1.8
7. Person providing homeschool instruction (HSWHOX)	6.9	2.5
8. Homeschool instruction by tutor (HSTUTOR)	7.3	1.6
9. Internet homeschool instruction (HSINTNET)	3.1	5.4
19. Homeschool physical curriculum source is public library (HSCLIBRX-HSCOTH) <sup>1</sup>	5.8	8.2
20. Courses online or in person (HSCOURS)	5.4	4.7
21. Homeschooled (HOMEKX-HOME12)	0	9.6
22. Reason to homeschool (HSSAFETYX-HSOTHERX) <sup>1</sup>	6.2	7.9
23. Most important reason to homeschool (HSMOSTX)	7.6	22.6
25. Participate in homeschool activities (HSASSNX)	7.1	6.3
26. Participate in homeschool activities - times (HSFREQX)	9.0	8.9
27. Member of homeschool organization (HSNATL)	5.6	7.4

<sup>1</sup> Grid item. Nonresponse rates for grid items (items with lettered subitems, each of which requires a response) were calculated using the percentage of respondents who did not respond to any subitems within the grid; other-specify write-in responses were excluded.

NOTE: Unweighted, unedited data. Data were edited to protect respondent confidentiality, but were not edited to correct for range errors, inconsistent responses, or skip errors, or to impute for missing data. The variable name for each item is listed in parentheses.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Parent and Family Involvement in Education survey of the National Household Education Surveys Program (PFI-NHES), 2016 and 2019.

answer on the screener is consistent with all of their answers on the key topical questionnaire items about homeschooling. Among respondents who answered the screener and topical questionnaire (i.e., the PFI), 97.6 percent of respondents were consistent in their responses on the homeschooling status of their children in the screener and in the topical (table B.6). Among the 2.4 percent of inconsistent respondents, 36.7 percent indicated that their child was homeschooled on the screener but indicated in the topical that their child was not homeschooled, and 63.3 percent indicated that their child was not homeschooled on the screener but indicated that their

child was homeschooled on the topical (not in tables).

Looking at consistencies among all respondents results in relatively high consistency rates overall because most parents do not homeschool their children and thus do not report homeschooling on either the screener or topical. For example, among parents who indicated their child was not homeschooled on the screener, more than 99 percent also indicated on topical item 2h that their child was not homeschooled (not in tables). In contrast, among parents who indicated on the screener that their child was homeschooled, 85.3 percent indicated that their

child was homeschooled in topical item 2h (not in tables).

This relatively high inconsistent reporting of homeschooling based on the screener validates the decision to use a combined PFI instrument, which allows all parents to make a more informed choice between homeschooling and enrolled education on the detailed PFI topical questions instead of automatically routing a parent to only the homeschool items or only the enrolled items based on their screener responses.

**Topical consistency rates.**

The 2019 PFI includes four sequential questions that aid in

the identification of students who are homeschooled and that guide parents to the correct topical survey section (items 2-5). Respondents were largely consistent in their responses about homeschooling in these topical survey items. Among respondents who answered the entire sequence of questions that identify homeschoolers, 95.8 percent were consistent in their answers (table B.6).

The consistency rates are high between both consecutive and nonconsecutive homeschooling items. For example, the consistency rate between item 2h and item 4 was 99.7 percent, and the consistency rate between items 4 and item 5 was 98.8 percent (table B.6).

This analysis of consistency rates supports an approach to identifying homeschooled students using the topical PFI items only; the

reported characteristics of the homeschooling experience in the PFI are generally internally consistent. Further, since the homeschooling items have high consistency rates the homeschooling questions in the PFI appear to be reliable items that can be used in generating estimates for homeschooling.

### Virtual education items

Respondents first identified their child's enrollment in full-time virtual education in item 2e, and then in item 9/43, the first item in the PFI's virtual education section. The consistency rate of item 2e and the combined item 9/43 was relatively high; 98.7 percent answered these items consistently (table B.6). Similar rates of consistency, of more than 98 percent, were found between other virtual education items: between

item 2e and item 13/47 (asking about the number of virtual education courses taken), between item 9/43 and item 13/47, and between item 9/43 and item 15/49 (asking about the number of hours spent in virtual education). In sum, parents typically answered questions about their child's virtual education experience in a consistent way.

### Defining Rates

These analyses on the item nonresponse rates and consistency rates for the 2019 PFI homeschooling and virtual education items suggest that respondents generally did not have difficulty providing accurate information about homeschooling and virtual education. In addition, the analyses found no reason to change the items used to operationalize the homeschooling definition in past administrations.

**Table B.5. Unweighted item nonresponse rates for virtual education items in the Parent and Family Involvement in Education survey: 2018–19**

Item	Nonresponse rate (Percent)
<b>Average total item nonresponse rate</b>	<b>5.7</b>
<b>Average item nonresponse rate, non-grid items</b>	<b>6.5</b>
<b>Average item nonresponse rate, grid items</b>	<b>3.7</b>
9/43 Enrolled in virtual courses (HSINTNET/EINTNET)	0.6
10/44 Reason for virtual education (ONLNAP-ONLNOTH/ADVCCRSE-ONLINEOTH) <sup>1</sup>	3.2
11/45 Most important reason (HSIMPONLI/MOSTIMPT)	5.8
12/46 Provider of online, virtual, or cyber course (HSINTPUB-HSINTOH/SPBSCH-SOTHSCH) <sup>1</sup>	4.2
13/47 Number of virtual courses (HSINTNUM/INTNUM)	11.5
14/48 Fee for virtual courses (HSINTFEE/SINSTFEE)	8.8
15/49 Hours in virtual courses (HSINTHRS/INTHRS)	5.9

<sup>1</sup> Grid item. Nonresponse rates for grid items (items with lettered subitems, each of which requires a response) were calculated using the percentage of respondents who did not respond to any subitems within the grid; other-specify write-in responses were excluded.

NOTE: Unweighted, unedited data. Data were edited to protect respondent confidentiality, but were not edited to correct for range errors, inconsistent responses, or skip errors, or to impute for missing data. The variable name for each item is listed in parentheses.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Parent and Family Involvement in Education survey of the National Household Education Surveys Program (PFI-NHES), 2019.

**Homeschooling rate.** To count homeschooled students, this report uses the following formula, which is consistent with the formula used in past years:

*The (weighted) number of respondents who responded “yes” to*

*item 4 and homeschooled for “all” or “some” classes in item 5, excluding the number who indicated in item 22 that the child was homeschooled only because of a temporary illness, or who indicated in item 42 that the child also attended school for more than 24 hours per week.<sup>7</sup>*

The homeschooling rate is then calculated, with weighted data, using the formula above for the numerator and the total number of students as the denominator. Although this definition is theoretically consistent with that used in past years, there is a slight operational difference.

**Table B.6. Consistency between Screener survey enrollment item and homeschooling items in the Parent and Family Involvement in Education (PFI) survey, among homeschooling PFI items, and among virtual education PFI items: 2018–19**

Items compared	Consistency rate (Percent) <sup>1</sup>
<b>Screener enrollment (PENROL) vs.:</b>	
Overall PFI consistency rate for select items <sup>2</sup>	97.6
2h. Type of school - homeschool (EDCHSFL)	98.5
3. Mark Yes to 2h (EDHMSCHL) (Paper respondents only)	98.0
4. Homeschool for some classes (HOMESCHLX)	98.5
5. Homeschooling arrangement (HMSCHARR)	98.5
30. School child is enrolled for most hours (SCHLMOSTHRS) (paper respondents only)	95.1
<b>PFI homeschooling items</b>	
Overall consistency rate for select homeschooling items (2h. Type of school—homeschool (EDCHSFL) through 5. Homeschooling arrangement (HMSCHARR))	95.8
2h. Type of school—homeschool (EDCHSFL) vs. 3. Mark Yes to 2h (EDHMSCHL) (paper respondents only)	#
2h. Type of school—homeschool (EDCHSFL) vs. 4. Homeschool for some classes (HOMESCHLX)	99.7
2h. Type of school—homeschool (EDCHSFL) vs. 5. Homeschooling arrangement (HMSCHARR)	99.7
3. Mark Yes to 2h (EDHMSCHL) vs. 4. Homeschool for some classes (HOMESCHLX) (Paper respondents only)	99.5
4. Homeschool for some classes (HOMESCHLX) vs. 5. Homeschooling arrangement (HMSCHARR)	98.8
<b>PFI virtual education items</b>	
2e. Type of school—full-time virtual (EDCINTK12) vs. combined 9/43. Enrolled in online, virtual or cyber courses (HSINTNET & EINTNET)	98.7
2e. Type of school—full-time virtual (EDCINTK12) vs. combined 13/47. Number of virtual courses child takes (HSINTNUM & INTNUM)	98.5
Combined 9/43. Enrolled in online, virtual, or cyber courses (HSINTNET & EINTNET) vs. combined 13/47. Number of virtual courses child takes (HSINTNUM & INTNUM)	99.9
Combined 9/43. Enrolled in online, virtual, or cyber courses (HSINTNET & EINTNET) vs. combined 15/49. Number of hours child spends in virtual courses per week (HSINTHRS & INTHRS)	99.5

# Rounds to 100.

<sup>1</sup> The consistency rate for any set of two items is the percentage of respondents who were eligible to respond to both items and provided consistent responses to those items.

<sup>2</sup> The overall PFI consistency rate for select items includes 2h. Type of school - homeschool (EDCHSFL), 3. Mark Yes to 2h (EDHMSCHL) (Paper respondents only), 4. Homeschool for some classes (HOMESCHLX), 5. Homeschooling arrangement (HMSCHARR), and 30. School child is enrolled for most hours (SCHLMOSTHRS) (paper respondents only).

NOTE: Unweighted, unedited data. Data were edited to protect respondent confidentiality, but were not edited to correct for range errors, inconsistent responses, or skip errors, or to impute for missing data. The variable name for each item is listed in parentheses.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Screener survey and Parent and Family Involvement in Education survey of the National Household Education Surveys Program (PFI-NHES), 2019.

<sup>7</sup> Because items 4 and 5 are edited to be consistent with one another, analysts will obtain the same count using either or both of these items.

As noted in Jackson et al. (2022), item 42 in the 2019 PFI differs from the corresponding item in previous years, where a cut-off of more than 25 hours (rather than more than 24 hours) per week was used. Thus, the counts from 2019 differ from previous years' counts by excluding students who were homeschooled but attending school for exactly 25 hours per week. Data from 2016 indicate that about 0.9 percent of the population of homeschoolers attended school for 25 hours per week. Consequently, the 2019 rate of 2.8 percent may be an undercount compared to previous years. If the percent of students who were homeschooled and also enrolled for 25 hours a week in 2016 were applied to 2019, the undercount in 2019 would be 0.03 percent (2.8 percent times 0.9 percent).

#### **Full-time virtual education rate.**

The 2019 PFI includes a number of items that can be used to identify full-time virtual education participants—item 2e identifies full-time enrollment in a virtual school; item 9/43 identifies students for whom all courses are virtual; item 13/47 identifies the number of virtual courses taken, and item 15/49 identifies the number of hours spent in virtual education. The latter two items are difficult to use to identify full-time virtual education participation because there is no set number of courses or hours that correspond to full time. Given a choice between items 2e and 9/43, the evidence suggests that item 9/43 is more appropriate for identifying students enrolled in full-time virtual education.

This item is reasonably consistent with other virtual education items and has a relatively low nonresponse rate. Moreover, the wording of item 9/43 adds to its appropriateness. In item 2e, parents are asked if their child is enrolled in “Full-time online, virtual, or cyber school...” (emphasis added), which is nested

within a set of other items that ask about any attendance and not about full-time attendance. Parents may be less certain about how to respond to item 2e in that context. In addition, it is not clear how parents of students who are participating in virtual education full-time, but enrolled in a traditional in-person school, would answer this question. In item 9/43, parents are asked “Is this child enrolled in any online, virtual, or cyber courses?” and then asked to choose from “Yes, all of the child’s courses are online, virtual, or cyber,” “Yes, about half or more than half of the child’s courses are online, virtual, or cyber,” “Yes, less than half of the child’s courses are online-virtual, or cyber,” and “No, none of this child’s courses are online, virtual, or cyber.” The question more clearly identifies and distinguishes various levels of virtual education and is not restricted to virtual schools. Thus, this report uses the following formula to count students enrolled in full-time virtual education:

*The (weighted) number of respondents who responded “yes, all courses are virtual” to item 9/43, excluding, for homeschooled students, the number who indicated in item 22 that the child was homeschooled only because of a temporary illness and, for enrolled students, the number who indicated in item 44 that the child was taking virtual courses only because of a temporary illness.*

The full-time virtual education rate is then calculated, with weighted data, using the formula above for the numerator and the total number of students as the denominator.

**Rate comparisons to *Data File User’s Manual*.** The 2019 NHES *Data File User’s Manual* (Jackson et al. 2022) provided a preliminary analysis of these rates, using slightly different definitions. The count of homeschooled students in Jackson et al. (2022) was similar to that

used above, except that item 2 (asking about the various types of schooling the child receives, and used to direct respondents to the homeschooling or enrolled sections of the survey) was also used. However, when item 2h indicated that the child was homeschooled and items 4 and 5 indicated the child were not homeschooled, items 4 and 5 over-ruled item 2. Because of this, the *Data File User’s Manual* definition effectively matches the definition used in this report, and the homeschooling rates in both reports are the same (2.8 percent). To count full-time virtual education students, the *Data File User’s Manual* used item 2e, item 9/43, and item 15/49. In other words, parents had to report that their child attended a full-time virtual school, took all courses virtually, and was in virtual education 10 or more hours per week; students were not excluded from this count if they were in virtual education only due to temporary illness. The net result of these differences is that the *Data File User’s Manual* definition for full-time virtual education is more restrictive than the definition used here, with the manual producing a 0.5 percent full-time virtual education rate, compared to the 1.2 percent rate reported here.<sup>8</sup> Because the number of parents who reported their child was enrolled in a full-time virtual school and the number who reported their child was in virtual education 10 or more hours per week was greater than the number who reported that their child took all courses virtually, this smaller percentage reported in the *Data File User’s Manual* necessarily results from inconsistencies in reporting across these items. (Items 2e, 9/43, and 15/49 were not edited for consistency.)

<sup>8</sup> Only two cases were excluded from this report’s full-time virtual education rate due to the illness criterion. Thus, although the exclusion of students who are in virtual education due to a temporary illness is more restrictive than the definition used in the manual, that restriction is outweighed by the restrictions imposed by the item consistency requirement in the manual’s definition.