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Distance Education Courses for Public Elementary and Secondary School Students: 2002–03

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U.S. Department of Education
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March 2005

U.S. Department of Education
Institute of Education Sciences
NCES 2005–010

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Summary

Background

Nontraditional methods of instructional delivery at the postsecondary level, such as technology-based distance education course offerings, have been a topic of considerable attention and debate. Research on this topic suggests that distance education course offerings and enrollments have proliferated at postsecondary education institutions within recent years (Lewis, Alexander, and Farris 1997; Lewis et al. 1999; Waits and Lewis 2003). There is also some anecdotal evidence that technology-based education at the elementary and secondary levels enables school districts to expand the range of courses available to their students and may facilitate more flexibility in student schedules and instructional delivery (Wildavsky 2001; Doherty 2002; Kennedy-Manzo 2002; Trotter 2002). To date, however, no nationally representative study has examined technology-based distance education availability, course offerings, and enrollments in the nation's elementary and secondary schools. To address this gap, the Office of Educational Technology in the U.S. Department of Education requested the "Distance Education Courses for Public Elementary and Secondary School Students" survey to collect and analyze nationally representative data on technology-based distance education in public elementary and secondary school districts. It provides baseline data, gathered for the 2002–03 12-month school year, on the prevalence of technology-based distance education courses across the nation, as well as estimated enrollments of public elementary and secondary school students in these distance education courses. It also identifies the types of technologies most commonly used for delivering distance education courses. The survey also provides information on districts' reasons for having distance education courses and factors districts report that prevent their expansion of distance education course offerings.

The survey was mailed to public school district superintendents, who were asked to review the questionnaire and determine the person in the district who was best suited to complete it. Suggested respondents were the director of curriculum, the technology coordinator, or the distance education coordinator. Respondents were provided with a definition and description of distance education courses. For this study, distance education courses were defined as credit-granting courses offered to elementary and secondary school students enrolled in the district in which the teacher and students were in different locations. Distance education courses could originate from the respondent's district or from other entities, such as a state virtual school or postsecondary institution. These courses could be delivered via audio, video (live or prerecorded), or Internet or other computer technologies. Additionally, the distance education courses could include occasional face-to-face interactions between the teacher and the students.

Districts were also instructed to include information about distance education Advanced Placement or college-level courses in which students in their district were enrolled. For purposes of this survey, respondents were instructed to exclude information about supplemental course materials, virtual field trips, online homework, staff professional development, or courses conducted mainly via written correspondence.

The survey asked whether there were any public elementary or secondary school students in the district enrolled in distance education courses. Respondents were instructed to report only about distance education enrollments of students regularly enrolled in the district and to include all distance education courses in which students in the district were enrolled, regardless of where the courses originated. If the respondents indicated that there were public elementary or secondary school students in the district enrolled in distance education courses, they were asked to report the number of schools in their district with students enrolled in distance education courses by instructional level of the school. Respondents were also asked to report the number of distance education course enrollments in schools in their district by instructional level of the school and curriculum area. Other survey items asked which technologies were used as primary modes of instructional delivery for distance education courses, which entities delivered distance education courses, whether any students accessed online distance education courses (and if so, from which locations), and the district's reasons for having distance education courses. Finally, respondents were asked whether their district had any plans to expand their distance education courses, and if so, which factors, if any, might be keeping them from expanding those courses.

This survey was conducted by the National Center for Education Statistics (NCES) using the Fast Response Survey System (FRSS). FRSS is designed to administer short, focused, issue-oriented surveys that place minimal burden on respondents and have a quick turnaround from data collection to reporting. Questionnaires for the survey were mailed in fall 2003 to a representative sample of 2,305 public school districts in the 50 states and District of Columbia. The sample was selected from the 2001–02 NCES Common Core of Data (CCD) "Local Education Agency Universe Survey" file, which was the most current file available at the time of selection. Data have been weighted to yield national estimates. The sampling frame includes 15,218 public school districts—14,229 regular public school districts and 989 "other education agencies" with at least 1 charter school (see appendix A for a more detailed discussion of the sample and sampling frame). The number of districts in the survey universe decreased to an estimated 15,040 because some of the districts were determined to be ineligible for the FRSS survey during data collection. The unweighted response rate was 94 percent and the weighted response rate was 96 percent. Detailed information about the survey methodology is provided in appendix A, and the questionnaire can be found in appendix B.

The primary focus of this report is to present national estimates. In addition, selected survey findings are presented by the following district characteristics, which are defined in more detail in appendix A:

- district enrollment size (less than 2,500, 2,500 to 9,999, 10,000 or more—referred to as small, medium, and large, respectively);
- metropolitan status (urban, suburban, rural);
- region (Northeast, Southeast, Central, West); and
- poverty concentration (less than 10 percent, 10 to 19 percent, 20 percent or more—referred to as low, medium, and high, respectively).

In general, comparisons by these district characteristics are presented only where significant differences were detected and followed meaningful patterns. It is important to note that many of the district characteristics used for independent analysis may also be related to each other. For example, district enrollment size and metropolitan status are related, with urban districts typically being larger than rural districts. Other relationships between these analysis variables may exist. However, this E.D. TAB report focuses on the bivariate relationships between district characteristics and the data gathered in the survey, rather than more complex analyses, to provide descriptive information about technology-based distance education.[1]

All specific statements of comparison made in this report have been tested for statistical significance through *t*-tests and are significant at the 95 percent confidence level or better. However, only selected findings are presented for each topic in the report. Throughout this report, differences that may appear large (particularly those by district characteristics) may not be statistically significant. This may be due to relatively large standard errors surrounding the estimates, particularly among subgroups. A detailed description of the statistical tests supporting the survey findings can be found in appendix A.

Selected Findings

The findings in this report are organized as follows:

- distance education courses for public school students;

[1] E.D. TAB reports focus on the presentation of selected descriptive data in tabular format.

- technologies used for delivering distance education courses;
- entities delivering distance education courses;
- reasons for having distance education courses; and
- future expansion of distance education courses.

Distance Education Courses for Public School Students

The survey asked whether there were any public elementary or secondary school students in the district enrolled in distance education courses in 2002–03 (12-month school year). Districts with students enrolled in distance education courses were asked to indicate the number of schools with at least one student enrolled in distance education courses and the number of enrollments in distance education courses of students regularly enrolled in the district.

Prevalence of Distance Education Courses in Public School Districts

- During the 2002–03 12-month school year, about one-third of public school districts (36 percent) had students in the district enrolled in distance education courses (table 1). This represents an estimated 5,500 out of a total of 15,040 public school districts.
- A greater proportion of large districts than medium or small districts had students enrolled in distance education courses (50 vs. 32 and 37 percent, respectively) (table 1). In addition, a greater proportion of districts located in rural areas than in suburban or urban areas indicated that they had students enrolled in distance education courses (46 compared with 28 and 23 percent, respectively).
- A greater proportion of districts located in the Southeast and Central regions had students enrolled in distance education courses than did districts in the Northeast and West (45 and 46 percent compared with 21 and 32 percent) (table 1). The proportion of districts with students enrolled in distance education courses was lower in the Northeast than in other regions (21 vs. 32 to 46 percent).
- A smaller proportion of districts with the lowest poverty concentration had students enrolled in distance education courses than did districts with higher concentrations of poverty (33 compared with 42 percent for both districts with medium or high poverty concentration) (table 1).

Prevalence of Distance Education Courses in Public Schools

- An estimated 8,200 public schools had students enrolled in distance education courses during the 2002–03 12-month school year (table 2). This represents approximately 9 percent of all public schools nationwide (table 3).

- Although a greater proportion of large districts than medium or small districts had students enrolled in distance education courses (table 1), a greater proportion of schools in small districts had students enrolled in distance education courses than did schools in medium or large districts (15 vs. 6 percent for both medium and large districts) (table 3). In other words, when small districts do offer distance education, they are more likely to involve a greater proportion of their schools.

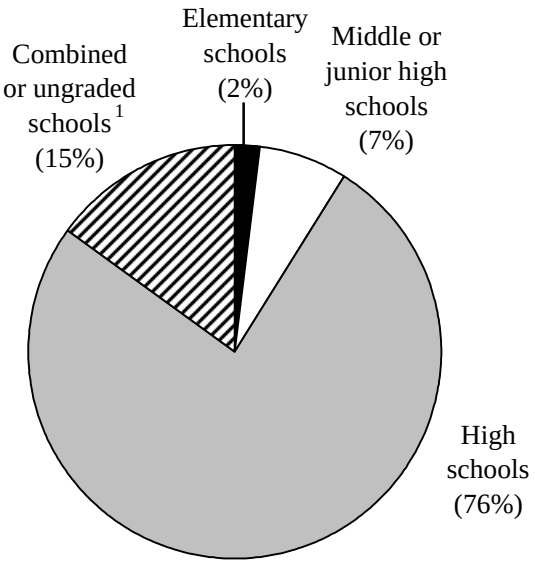
- A higher proportion of schools in rural districts than schools in either suburban or urban districts had students enrolled in distance education courses (15 compared to 7 and 5 percent, respectively) (table 3). In addition, a greater proportion of schools in the Central region had students enrolled in distance education courses than did schools in the Northeast (12 vs. 5 percent, respectively).

- The percentage of schools with students enrolled in distance education courses varied substantially by the instructional level of the school. Overall, 38 percent of public high schools offered distance education courses, compared with 20 percent of combined or ungraded schools,[2] 4 percent of middle or junior high schools, and fewer than 1 percent of elementary schools (table 3).

- Among all public schools with students enrolled in distance education, 76 percent were high schools, 15 percent were combined or ungraded schools, 7 percent were middle or junior high schools, and 2 percent were elementary schools (table 4 and figure 1).

[2] Combined or ungraded schools are those in which the grades offered in the school span both elementary and secondary grades or that are not divided into grade levels.

Figure 1. Percentage distribution of public schools with students enrolled in distance education courses, by instructional level: 2002–03



[1] Combined or ungraded schools are those in which the grades offered in the school span both elementary and secondary grades or that are not divided into grade levels.

NOTE: Percentages are based on unrounded numbers. Percentages are based on the estimated 8,210 schools with students enrolled in distance education courses in 2002–03.

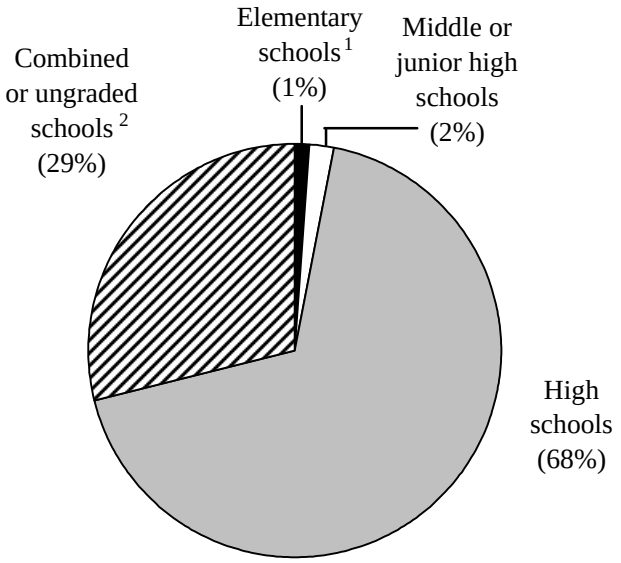
SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Distance Education Enrollments by Instructional Level

- In 2002–03, there were an estimated 328,000 enrollments in distance education courses among students regularly enrolled in public school districts[3] (table 5). If a student was enrolled in multiple courses, districts were instructed to count the student for each course in which he or she was enrolled. Thus, enrollments may include duplicated counts of students.

- Of the total enrollments in distance education courses, 68 percent were in high schools, 29 percent were in combined or ungraded schools, 2 percent were in middle or junior high schools, and 1 percent[4] were in elementary schools (table 6 and figure 2).

Figure 2. Percentage distribution of enrollments in distance education courses of students regularly enrolled in the districts, by instructional level: 2002–03



[1] Interpret data with caution. The coefficient of variation for elementary schools is greater than 50 percent.

[2] Combined or ungraded schools are those in which the grades offered in the school span both elementary and secondary grades or that are not divided into grade levels.

NOTE: Percentages are based on unrounded numbers. Percentages are based on the estimated 327,670 enrollments in distance education courses in 2002–03.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

[3] To put this number into context, NCES reported 47,222,778 students enrolled in public elementary and secondary schools in fall 2000. It is important to note that distance education enrollments collected in the FRSS survey may include duplicated counts of students (i.e., the number of students enrolled in distance education courses could be smaller than the estimated 328,000 enrollments in distance education courses), while the NCES estimate of 47,222,778 students enrolled in public elementary and secondary schools is an unduplicated count (Snyder and Hoffman 2003, p. 51).

[4] Interpret data with caution. The coefficient of variation for elementary schools is greater than 50 percent.

Distance Education Enrollments by Curriculum Area

- Distance education enrollments in various curricular areas ranged from an estimated 8,200 in general elementary school curriculum and 11,700 in computer science to 74,600 in social studies/social sciences (table 7).

- About one-quarter (23 percent) of all enrollments in distance education courses of students regularly enrolled in the districts were in social studies/social sciences, 19 percent were in English/language arts, 15 percent were in mathematics, 12 percent were in natural/physical science, 12 percent were in foreign languages, and 14 percent were in other unspecified curriculum areas (table 8). Enrollments in general elementary school curriculum and computer science accounted for the smallest proportions of distance education enrollments (3 and 4 percent, respectively).

- The proportion of students enrolled in foreign language distance education courses was greater for small districts compared to medium or large districts (19 vs. 11 and 6 percent, respectively) (table 8). Furthermore, the proportion of students enrolled in foreign language distance education courses was greater for rural districts than for suburban or urban districts (22 vs. 10 and 5 percent, respectively).

Advanced Placement or College-Level Courses Offered Through Distance Education

- Fifty percent of the districts with students enrolled in distance education courses had students enrolled in Advanced Placement or college-level courses offered through distance education in 2002–03 (table 9). This represents an estimated 2,700 districts.

- There were an estimated 45,300 enrollments in Advanced Placement or college-level courses offered through distance education in 2002–03 (table 10). This represents 14 percent of the total enrollments in distance education.

- The proportion of all distance education enrollments that are in Advanced Placement or college-level distance education courses is greater in small districts compared to medium or large districts (24 vs. 10 and 7 percent, respectively) (table 10).

- The proportion of all distance education enrollments that are in Advanced Placement or college-level distance education courses is greater in rural districts compared to urban or suburban districts (27 vs. 4 and 11 percent, respectively) (table 10). Additionally, suburban districts had a higher proportion (11 percent) of all distance education enrollments in Advanced Placement or college-level distance education courses than urban districts (4 percent).

Technologies Used for Delivering Distance Education Courses

Districts that reported offering distance education courses were asked about the types of technologies used as primary modes of instructional delivery for any distance education courses in which students in the district were enrolled. The technologies included Internet courses using synchronous (i.e., simultaneous or "real-time") computer-based instruction, Internet courses using asynchronous (i.e., not simultaneous) computer-based instruction, two-way interactive video, one-way prerecorded video, and other technologies. Districts were also asked about online distance education courses, including where students were accessing distance education courses, and whether the district provided or paid for specific services (i.e., computer, Internet service provider, other) for students accessing online distance education courses from home.

Technologies Used as Primary Modes of Instructional Delivery

- More districts reported two-way interactive video (55 percent) or Internet courses using asynchronous computer-based instruction (47 percent) than Internet courses using synchronous computer-based instruction (21 percent), one-way prerecorded video (16 percent), or some other technology (4 percent) as a primary mode of delivery (table 11).[5]

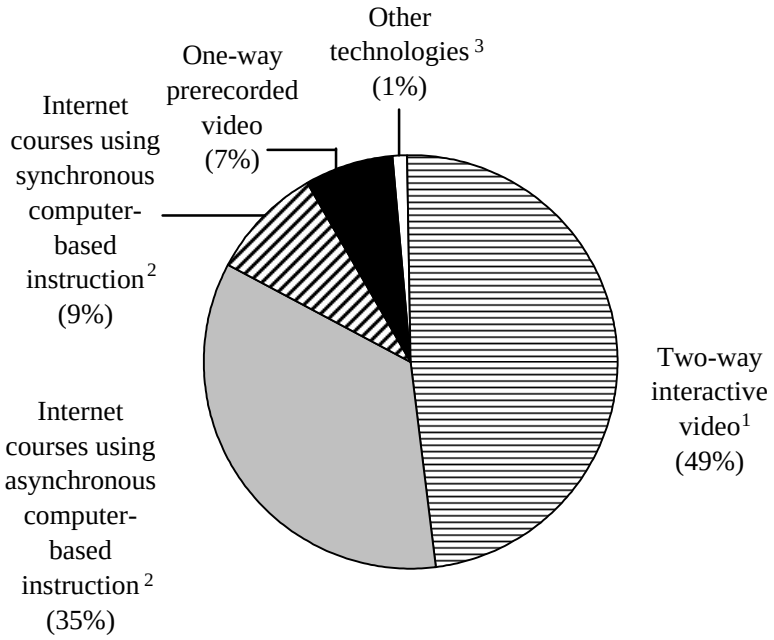
- In small districts, two-way interactive video was the technology most often cited as a primary instructional delivery mode for distance education courses (60 percent vs. 5 to 42 percent for all remaining technologies) (table 11). However, in both medium and large districts, Internet courses using asynchronous computer-based instruction was the technology most often cited as a primary delivery mode (60 percent vs. 3 to 44 percent for all remaining technologies in medium districts; 72 percent vs. 6 to 33 percent for all remaining technologies in large districts).

- In both urban and suburban districts, Internet courses using asynchronous computer-based instruction was the technology cited most often as a primary instructional delivery mode for distance education courses (69 percent vs. 3 to 38 percent for all remaining technologies in urban districts; 58 percent vs. 4 to 39 percent for all remaining technologies in suburban districts) (table 11). However, in rural districts, two-way interactive video was the technology cited most often as a primary delivery mode (64 vs. 5 to 40 percent for all remaining technologies).

[5] Percentages sum to more than 100 because some districts used different types of technology as primary modes of instructional delivery for different distance education courses.

- When asked which technology was used to deliver the greatest number of distance education courses, 49 percent of districts selected two-way interactive video, more than any other technology (table 12). Thirty-five percent of districts selected Internet courses using asynchronous computer-based instruction, 9 percent selected Internet courses using synchronous computer-based instruction, 7 percent selected one-way prerecorded video, and 1 percent selected other technologies (table 12 and figure 3).

Figure 3. Percentage distribution of districts reporting that various technologies were used for the greatest number of distance education courses in which students in their district were enrolled: 2002–03



[1] Two-way interactive video refers to two-way video with two-way audio.

[2] Asynchronous is not simultaneous, whereas synchronous is defined as simultaneous or "real-time" interaction.

[3] Other technologies mentioned included teleconferencing, CD-ROM, and other software packages.

NOTE: Percentages are based on unrounded numbers. Percentages are based on the estimated 5,480 districts with students enrolled in distance education courses in 2002–03. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Online Distance Education Courses

- Fifty-nine percent of districts with students enrolled in distance education courses had students enrolled in online distance education courses (i.e., courses delivered over the Internet) in 2002–03 (table 13).

- A greater proportion of large districts than medium or small districts had students enrolled in online distance education courses (80 vs. 71 and 53 percent, respectively) (table 13). Medium districts also had a greater proportion of students enrolled in online

distance education courses than small districts (71 vs. 53 percent, respectively). In addition, a smaller proportion of rural districts than suburban or urban districts had students enrolled in online distance education courses (51 vs. 71 and 74 percent, respectively).

- Of those districts with students enrolled in online distance education courses, 92 percent had students accessing online courses from school, 60 percent had students accessing online courses from home, and 8 percent had students accessing online courses from some other location[6] (table 13).

- A greater proportion of large districts than medium or small districts had students accessing online distance education courses from home (77 vs. 66 and 55 percent, respectively) (table 13). Furthermore, a greater proportion of medium-size districts than small districts had students accessing online distance education courses from home (66 vs. 55 percent). In addition, the proportion of rural districts with students accessing online distance education courses from home was less than the proportion of suburban and urban districts with students accessing online courses from home (53 vs. 67 and 78 percent, respectively). No differences were detected in online access from home by poverty concentration.

- Among districts with students accessing online distance education courses from home, 24 percent provided or paid for a computer for all students and 8 percent did so for some students (table 14). Additionally, 27 percent provided or paid for the Internet service provider for all students and 7 percent did so for some students. Finally, 6 percent provided or paid for some other item (e.g., software programs, phone service for dial–up Internet service) for all students and 2 percent did so for some students.

- A greater proportion of small districts than medium or large districts provided or paid for computers for all students (29 vs. 17 and 11 percent, respectively) (table 14). Similarly, a greater proportion of small districts than medium or large districts provided or paid for an Internet service provider for all students (32 vs. 20 and 15 percent, respectively). In addition, the proportion of rural districts that provided or paid for computers for all students was greater than the proportion of suburban or urban districts that provided or paid for computers for all students (33 vs. 16 and 9 percent, respectively).

Entities Delivering Distance Education Courses

Districts that reported offering distance education courses were asked which entities delivered distance education courses to students regularly enrolled in their district. Entities included

- a cyber (i.e., online) charter school in the district;

- other schools in the district;

- their district (i.e., delivered centrally from the district);

[6] Percentages sum to more than 100 because students in districts could access online courses from more than one location.

- another local school district, or schools in another district, in their state;
- education service agencies within their state (e.g., Board of Cooperative Educational Services [BOCES], Council on Occupational Education [COE], Intermediate Units [IU]), not including the state education agency or local school districts;
- a state virtual school in their state (i.e., state-centralized K–12 courses available through Internet- or web-based methods);
- a state virtual school in another state;
- districts or schools in other states (other than state virtual schools);
- a postsecondary institution;
- an independent vendor; and
- other entities.

Districts were also asked whether they delivered distance education courses to students who were not regularly enrolled in their district (e.g., to students from other districts, private school students, or homeschooled students).

Entities Delivering Courses

- Of those districts with students enrolled in distance education courses in 2002–03, about half (48 percent) had students enrolled in distance education courses delivered by a postsecondary institution (table 15). Thirty-four percent of districts had students enrolled in distance education courses delivered by another local school district, or schools in other districts, within their state. Eighteen percent of districts had students enrolled in distance education courses delivered by education service agencies within their state, 18 percent by a state virtual school within their state, and 18 percent by an independent vendor. Sixteen percent of districts had students enrolled in distance education courses delivered centrally from their own district. Eight percent of districts had students enrolled in distance education courses delivered by other schools in the district (other than cyber charter schools). The proportion of school districts delivering distance education courses through various other entities ranged from 3 to 4 percent.
- A greater proportion of large districts than medium or small districts had students enrolled in distance education courses delivered by other schools in the district (28 vs. 15 and 5 percent, respectively) (table 16). Medium districts also had a greater proportion of students enrolled in distance education courses delivered by other schools in the district than small districts (15 vs. 5 percent). Additionally, a greater proportion of urban districts than either suburban or rural districts had students enrolled in distance education courses delivered by other schools in the district (25 vs. 9 and 6 percent, respectively).

- A greater proportion of small districts than medium or large districts had students enrolled in distance education courses delivered by another local school district, or schools in other districts, within their state (39 percent vs. 25 and 13 percent, respectively) (table 16). Furthermore, a greater proportion of medium-size districts than large districts had students enrolled in distance education courses delivered by another local school district, or schools in other districts, within their state (25 vs. 13 percent). Additionally, there were more rural districts than either suburban or urban districts that had students enrolled in distance education courses delivered by another local school district, or schools in other districts, within their state (40 percent vs. 25 and 20 percent, respectively).

- A smaller proportion of small districts than medium or large districts had students enrolled in distance education courses delivered by a state virtual school in their state (15 vs. 27 percent each, respectively) (table 16). Additionally, a greater proportion of districts in the Southeast than in other regions had students enrolled in distance education courses delivered by a state virtual school in their state (43 vs. 6 to 17 percent).

- A greater proportion of small districts than medium or large districts had students enrolled in distance education courses delivered by postsecondary institutions (54 vs. 30 and 33 percent, respectively) (table 16). In addition, there was a smaller proportion of urban districts than suburban or rural districts that had students enrolled in distance education courses delivered by postsecondary institutions (22 vs. 44 and 53 percent, respectively).

- There was a greater proportion of large districts than small districts with students enrolled in distance education courses delivered by independent vendors (28 vs. 16 percent, respectively) (table 16). Compared to rural districts, both urban and suburban districts had greater proportions of students enrolled in distance education courses delivered by independent vendors (15 vs. 29 and 23 percent, respectively).

Delivery of Courses to Students Not Regularly Enrolled in the District

- During the 2002–03 12-month school year, about one-fifth (21 percent) of districts that offered distance education delivered courses to students who were not regularly enrolled in the district (e.g., to students from other districts, private school students, or homeschooled students) (table 17).

- A smaller proportion of districts in the Southeast than in the Northeast or Central regions delivered distance education courses to students not regularly enrolled in the district (13 vs. 29 and 22 percent, respectively) (table 17).

Reasons for Having Distance Education Courses

Districts who reported offering distance education courses were asked how important various reasons were for having distance education courses in the district in 2002–03. Reasons included offering courses not otherwise available at the school, offering Advanced Placement or college-level courses, addressing growing populations and limited space, reducing scheduling conflicts for students, permitting students who failed a course to take it again, meeting the needs of specific groups of students, and generating more district revenues.[7]

- The reason most frequently cited as very important for having distance education courses in the district was offering courses not otherwise available at the school (80 percent) (table 18). Other reasons frequently cited as very important were meeting the needs of specific groups of students (59 percent) and offering Advanced Placement or college-level courses (50 percent). Reducing scheduling conflicts for students was mentioned as very important by 23 percent of districts. The remaining reasons were listed as very important by 4 to 17 percent of districts.

- Generating more district revenues as well as addressing growing populations and limited space were rated as not important more often than other reasons for having distance education courses (77 and 72 percent, respectively, vs. 9 to 64 percent) (table 18).

- A greater proportion of small districts than medium or large districts rated offering courses not otherwise available at the school as a somewhat or very important reason for having distance education (93 vs. 86 and 82 percent, respectively) (table 19). In addition, a greater proportion of rural districts than urban or suburban districts considered this to be a somewhat or very important reason for offering distance education courses (95 vs. 79 and 86 percent, respectively).

- A greater proportion of high-poverty districts than medium- or low-poverty districts rated meeting the needs of specific groups of students as a somewhat or very important reason for having distance education (88 vs. 79 and 80 percent, respectively) (table 19).

- A greater proportion of small districts than medium or large districts rated offering Advanced Placement or college-level courses as a somewhat or very important reason for having distance education (74 vs. 54 and 59 percent, respectively) (table 19). In addition, a greater proportion of rural districts than urban or suburban districts cited this as a somewhat or very important reason for having distance education (76 vs. 49 and 59 percent, respectively).

- A greater proportion of large districts than medium or small districts cited reducing scheduling conflicts for students as a somewhat or very important reason for having distance education (70 vs. 52 and 56 percent, respectively) (table 19).

[7] Although respondents were able to specify some other reason for having distance education, the only available options for this response were somewhat important and very important (see appendix B). Therefore, these "other" responses are not discussed further.

- A greater proportion of large districts than medium or small districts reported permitting students who failed a course to take it again as a somewhat or very important reason for having distance education (50 vs. 34 and 30 percent, respectively) (table 19). In addition, a greater proportion of urban districts than suburban or rural districts cited this reason as somewhat or very important for having distance education (47 vs. 33 and 31 percent, respectively) (table 19).

- A greater proportion of large districts than medium or small districts rated addressing growing populations and limited space as a somewhat or very important reason for having distance education (44 vs. 33 and 21 percent, respectively) (table 19). Furthermore, a smaller proportion of small districts than medium districts rated this as a somewhat or very important reason for having distance education (21 vs. 33 percent, respectively).

- A greater proportion of high-poverty districts than low-poverty districts cited generating more district revenues as a somewhat or very important reason for having distance education (21 vs. 11 percent, respectively) (table 19).

Future Expansion of Distance Education Courses

Districts that reported offering distance education courses were asked whether they planned to expand their distance education courses in the future. Those districts that planned to expand were asked about the extent to which various factors, if any, might be keeping them from expanding distance education courses. The factors included course development and/or purchasing costs; limited technological infrastructure to support distance education; concerns about course quality; restrictive federal, state, or local laws or policies; concerns about receiving funding based on student attendance for distance education courses; or some other reason.

- Seventy-two percent of districts with students enrolled in distance education courses planned to expand their distance education courses in the future (table 20). No differences were detected by district characteristics in plans to expand distance education courses.

- Costs were cited as a major factor more often than any other factor as preventing districts from expanding their distance education courses (table 21). Thirty-six percent of districts that were planning to expand their distance education courses selected course development and/or purchasing costs as a major factor preventing their expansion (table 21).

- Fifty-four percent of districts that were planning to expand their distance education courses said restrictive federal, state, or local laws or policies were not a factor preventing them from expanding (table 21). In addition, districts said the following were not factors preventing them from expanding distance education courses: limited technological infrastructure to support distance education (41 percent), concerns about

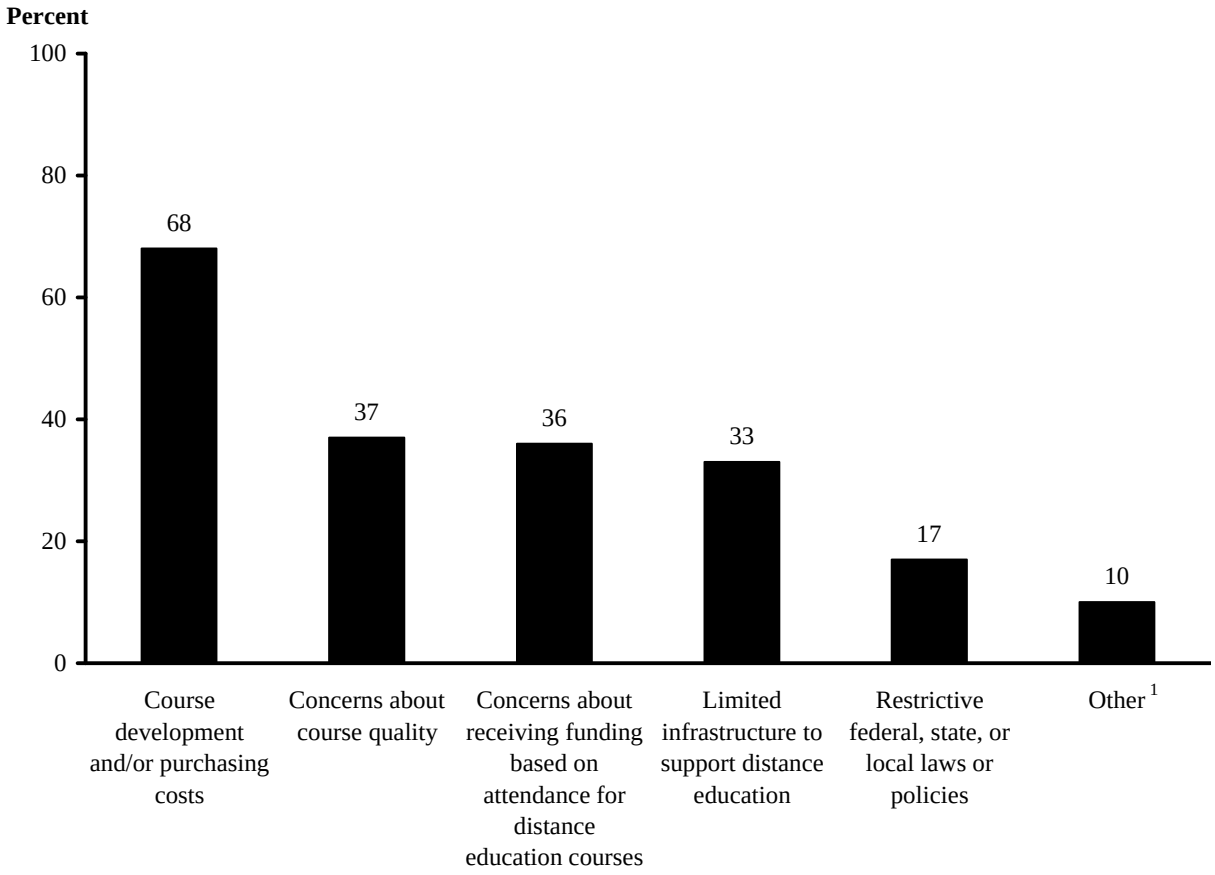
receiving funding for distance education courses based on student attendance (40 percent), and concerns about course quality (30 percent).

- Among public school districts with plans to expand their distance education courses, approximately two-thirds (68 percent) said course development and/or purchasing costs were a moderate or major factor keeping the district from expanding distance education courses, followed by concerns about course quality (37 percent); concerns about receiving funding for distance education courses based on attendance (36 percent); limited infrastructure to support distance education (33 percent); restrictive federal, state, or local laws or policies (17 percent); and some other reason (10 percent) (table 22 and figure 4).

- A greater proportion of urban districts than rural districts cited restrictive federal, state, or local laws or policies as a major or moderate factor preventing expansion of distance education courses (30 vs. 15 percent, respectively) (table 22). Additionally, a greater proportion of urban districts than suburban or rural districts cited receiving funding based on attendance for distance education courses as a major or moderate factor preventing them from expanding (54 vs. 38 and 34 percent, respectively).

- A smaller proportion of districts in the Northeast than in other regions cited receiving funding based on attendance for distance education courses as a major or moderate factor preventing expansion (20 vs. 36 to 43 percent) (table 22).

Figure 4. Percent of districts indicating that various factors were preventing them from expanding distance education courses to a moderate or major extent: 2002–03



[1] Other responses mentioned included scheduling conflicts, staffing issues, and lack of need.

NOTE: Percentages are based on unrounded numbers. Percentages are based on the estimated 3,960 districts that indicated they were planning to expand distance education courses.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

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Tables of Estimates and Standard Errors

Table 1. Number of districts in the nation, number of districts with students enrolled in distance education courses, and percent of districts with students enrolled in distance education courses, by district characteristics: 2002–03

District characteristic	Number of districts	Number of districts with students enrolled in distance education courses	Percent of districts with students enrolled in distance education courses
All public school districts	15,040	5,480	36
District enrollment size			
Less than 2,500	11,080	4,060	37
2,500 to 9,999	3,100	1,010	32
10,000 or more	820	410	50
Metropolitan status			
Urban	1,220	280	23
Suburban	6,150	1,700	28
Rural	7,660	3,500	46
Region			
Northeast	3,040	640	21
Southeast	1,750	790	45
Central	5,390	2,500	46
West	4,850	1,540	32
Poverty concentration			
Less than 10 percent	4,850	1,620	33
10 to 19 percent	5,330	2,220	42
20 percent or more	3,690	1,560	42

NOTE: Percentages are based on unrounded numbers. For the FRSS study sample, there were 3 cases for which district enrollment size was missing and 112 cases for which poverty concentration was missing. Detail may not sum to totals because of rounding or missing data.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 1-A. Standard errors for the number of districts in the nation, number of districts with students enrolled in distance education courses, and percent of districts with students enrolled in distance education courses, by district characteristics: 2002–03

District characteristic	Number of districts	Number of districts with students enrolled in distance education courses	Percent of districts with students enrolled in distance education courses
All public school districts	63	172	1.2
District enrollment size			
Less than 2,500	67	160	1.5
2,500 to 9,999	14	54	1.7
10,000 or more	6	20	2.4
Metropolitan status			
Urban	84	35	2.5
Suburban	130	107	1.7
Rural	134	127	1.6
Region			
Northeast	144	61	1.9
Southeast	97	66	3.0
Central	171	154	2.1
West	183	114	2.1
Poverty concentration			
Less than 10 percent	53	102	2.0
10 to 19 percent	53	107	2.0
20 percent or more	38	99	2.6

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 2. Number of schools in the nation, and number of schools with students enrolled in distance education courses, by instructional level and district characteristics: 2002–03

District characteristic	Number of schools					Number of schools with students enrolled in distance education courses				
	All instructional levels	Elementary schools	Middle or junior high schools	High schools	Combined or ungraded schools[1]	All instructional levels	Elementary schools	Middle or junior high schools	High schools	Combined or ungraded schools[1]
All public school districts	89,310	50,880	15,520	16,610	6,310	8,210	130	580	6,250	1,250
District enrollment size										
Less than 2,500	30,580	14,300	5,310	7,490	3,480	4,520	40!	190	3,300	990
2,500 to 9,999	26,310	16,130	4,620	4,350	1,200	1,670	20	160	1,360	130
10,000 or more	32,390	20,440	5,590	4,760	1,610	2,020	60	240	1,590	120
Metropolitan status										
Urban	20,400	12,700	3,240	3,090	1,380	960	50!	90	760	60
Suburban	40,430	23,870	7,480	7,010	2,060	2,980	30	280	2,400	270
Rural	28,480	14,310	4,790	6,510	2,870	4,260	40!	210	3,090	920
Region										
Northeast	16,460	10,230	2,750	2,620	860	820	30!	30!	670	100
Southeast	18,840	10,620	3,550	3,390	1,290	1,960	40!	220	1,520	170
Central	25,620	14,410	4,440	4,970	1,810	3,010	40!	150	2,320	510
West	28,390	15,620	4,790	5,630	2,360	2,410	20!	180	1,750	460
Poverty concentration										
Less than 10 percent	27,910	16,720	5,300	4,750	1,140	2,260	30!	200	1,700	330
10 to 19 percent	33,230	18,630	5,980	6,380	2,240	3,390	70!	240	2,560	520
20 percent or more	26,090	15,060	4,080	4,770	2,180	2,420	30	150	1,900	350

! Interpret data with caution. The coefficient of variation is greater than 50 percent.

[1] Combined or ungraded schools are those in which the grades offered in the school span both elementary and secondary grades or that are not divided into grade levels.

NOTE: Percentages are based on unrounded numbers. For the FRSS study sample, there were 3 cases for which district enrollment size was missing and 112 cases for which poverty concentration was missing. Detail may not sum to totals because of rounding or missing data.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 2-A. Standard errors for the number of schools in the nation, and number of schools with students enrolled in distance education courses, by instructional level and district characteristics: 2002–03

District characteristic	Number of schools					Number of schools with students enrolled in distance education courses				
	All instructional levels	Elementary schools	Middle or junior high schools	High schools	Combined or ungraded schools	All instructional levels	Elementary schools	Middle or junior high schools	High schools	Combined or ungraded schools
All public school districts	1,176	774	240	297	396	229	42	62	198	140
District enrollment size										
Less than 2,500	634	444	197	243	301	175	30	45	161	123
2,500 to 9,999	474	316	109	144	95	119	9	35	100	39
10,000 or more	957	606	175	150	227	113	31	27	94	19
Metropolitan status										
Urban	888	499	167	186	281	110	30	22	86	13
Suburban	810	500	158	201	160	168	17	41	145	52
Rural	709	466	170	236	204	162	28	47	115	124
Region										
Northeast	830	580	133	142	129	88	16	17	76	30
Southeast	931	575	192	163	108	128	26	34	108	35
Central	867	508	157	183	263	174	28	34	123	90
West	977	624	220	235	264	172	14	37	141	82
Poverty concentration										
Less than 10 percent	609	357	152	144	115	144	16	33	113	78
10 to 19 percent	817	529	149	218	175	154	39	34	141	84
20 percent or more	781	480	164	168	280	134	9	42	115	72

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 3. Percent of schools in the nation with students enrolled in distance education courses, by instructional level and district characteristics: 2002–03

District characteristic	All instructional levels	Elementary schools	Middle or junior high schools	High schools	Combined or ungraded schools[1]
All public school districts	9	#	4	38	20
District enrollment size					
Less than 2,500	15	#	4	44	29
2,500 to 9,999	6	#	3	31	11
10,000 or more	6	#	4	33	8
Metropolitan status					
Urban	5	#	3	25	4
Suburban	7	#	4	34	13
Rural	15	#	4	47	32
Region					
Northeast	5	#	1!	25	12
Southeast	10	#	6	45	14
Central	12	#	3	47	28
West	8	#	4	31	20
Poverty concentration					
Less than 10 percent	8	#	4	36	29
10 to 19 percent	10	#	4	40	23
20 percent or more	9	#	4	40	16

Rounds to zero.

! Interpret data with caution. The coefficient of variation is greater than 50 percent.

[1] Combined or ungraded schools are those in which the grades offered in the school span both elementary and secondary grades or that are not divided into grade levels.

NOTE: Percentages are based on unrounded numbers. Percentages are based on the estimated 89,310 public schools in the nation in 2002–03.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 3-A. Standard errors for the percent of schools in the nation with students enrolled in distance education courses, by instructional level and district characteristics: 2002–03

District characteristic	All instructional levels	Elementary schools	Middle or junior high schools	High schools	Combined or ungraded schools
All public school districts	0.3	0.1	0.4	1.2	1.8
District enrollment size					
Less than 2,500	0.6	0.2	0.8	2.1	2.9
2,500 to 9,999	0.4	0.1	0.8	2.0	3.0
10,000 or more	0.3	0.1	0.5	1.9	1.6
Metropolitan status					
Urban	0.5	0.2	0.6	2.7	1.3
Suburban	0.4	0.1	0.6	1.7	2.4
Rural	0.6	0.2	1.0	1.7	2.9
Region					
Northeast	0.5	0.2	0.6	2.7	3.7
Southeast	0.5	0.2	0.9	2.7	2.3
Central	0.6	0.2	0.8	1.7	4.6
West	0.5	0.1	0.7	2.0	2.6
Poverty concentration					
Less than 10 percent	0.5	0.1	0.6	2.0	5.5
10 to 19 percent	0.4	0.2	0.6	1.7	3.2
20 percent or more	0.5	0.1	1.0	2.0	3.1

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 4. Percentage distribution of schools with students enrolled in distance education courses, by instructional level and district characteristics: 2002–03

District characteristic	Elementary schools	Middle or junior high schools	High schools	Combined or ungraded schools[1]
All public school districts	2	7	76	15
District enrollment size				
Less than 2,500	1!	4	73	22
2,500 to 9,999	1	9	81	8
10,000 or more	3	12	79	6
Metropolitan status				
Urban	5!	10	79	6
Suburban	1	9	81	9
Rural	1!	5	73	22
Region				
Northeast	3!	4	81	12
Southeast	2!	11	78	9
Central	1!	5	77	17
West	1!	8	73	19
Poverty concentration				
Less than 10 percent	1!	9	75	15
10 to 19 percent	2!	7	76	15
20 percent or more	1	6	78	14

! Interpret data with caution. The coefficient of variation is greater than 50 percent.

[1] Combined or ungraded schools are those in which the grades offered in the school span both elementary and secondary grades or that are not divided into grade levels.

NOTE: Percentages are based on unrounded numbers. Percentages are based on the estimated 8,210 schools with students enrolled in distance education courses in 2002–03. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 4-A. Standard errors for the percentage distribution of schools with students enrolled in distance education courses, by instructional level and district characteristics: 2002–03

District characteristic	Elementary schools	Middle or junior high schools	High schools	Combined or ungraded schools
All public school districts	0.5	0.8	1.5	1.6
District enrollment size				
Less than 2,500	0.7	1.0	2.6	2.5
2,500 to 9,999	0.5	2.0	2.7	2.2
10,000 or more	1.5	1.3	2.1	0.9
Metropolitan status				
Urban	3.0	1.8	3.6	1.4
Suburban	0.5	1.3	2.3	1.6
Rural	0.7	1.1	2.6	2.5
Region				
Northeast	1.9	2.0	4.4	3.7
Southeast	1.3	1.6	2.4	1.7
Central	0.9	1.1	2.9	2.4
West	0.6	1.4	3.0	3.2
Poverty concentration				
Less than 10 percent	0.7	1.4	3.1	3.1
10 to 19 percent	1.1	1.0	2.7	2.4
20 percent or more	0.4	1.7	2.8	2.8

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 5. Number of enrollments in distance education courses of students regularly enrolled in the districts, by instructional level and district characteristics: 2002–03

District characteristic	All instructional levels	Elementary schools	Middle or junior high schools	High schools	Combined or ungraded schools[1]
All public school districts	327,670	2,780!	6,280	222,090	96,530
District enrollment size					
Less than 2,500	117,730	80!	1,260	74,160	42,240!
2,500 to 9,999	85,640	230!	1,750	44,780	38,880
10,000 or more	124,300	2,480!	3,270	103,150	15,410!
Metropolitan status					
Urban	103,390	2,390!	2,120	63,020	35,860
Suburban	123,410	110!	2,520	81,500	39,280!
Rural	100,870	270!	1,640	77,570	21,390
Region					
Northeast	42,070!	100!	190!	17,420	24,350!
Southeast	59,010	1,390!	2,530	50,410	4,680
Central	108,140	940!	1,050	60,560	45,590
West	118,450	350!	2,510	93,700	21,900!
Poverty concentration					
Less than 10 percent	77,380	570!	2,030	57,320	17,470!
10 to 19 percent	97,300	1,450!	1,710	77,810	16,330
20 percent or more	93,280	760	2,540	83,100	6,880

! Interpret data with caution. The coefficient of variation is greater than 50 percent.

[1] Combined or ungraded schools are those in which the grades offered in the school span both elementary and secondary grades or that are not divided into grade levels.

NOTE: Percentages are based on unrounded numbers. Enrollments may include duplicated counts of students, since districts were instructed to count a student enrolled in multiple courses for each course in which he or she was enrolled. For the FRSS study sample, there were 3 cases for which district enrollment size was missing and 112 cases for which poverty concentration was missing. Detail may not sum to totals because of rounding or missing data.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 5-A. Standard errors for the number of enrollments in distance education courses of students regularly enrolled in the districts, by instructional level and district characteristics: 2002–03

District characteristic	All instructional levels	Elementary schools	Middle or junior high schools	High schools	Combined or ungraded schools
All public school districts	36,233	1,564	1,247	26,660	26,828
District enrollment size					
Less than 2,500	24,742	63	409	7,559	24,346
2,500 to 9,999	7,597	125	639	6,148	3,490
10,000 or more	25,922	1,563	1,030	24,010	11,373
Metropolitan status					
Urban	25,612	1,565	996	25,477	1,650
Suburban	27,446	64	683	8,967	25,200
Rural	8,232	151	465	7,122	4,196
Region					
Northeast	23,613	62	133	3,715	23,364
Southeast	6,454	1,230	725	6,311	1,255
Central	7,378	590	365	6,597	2,823
West	27,630	224	996	25,509	11,645
Poverty concentration					
Less than 10 percent	13,761	535	669	8,000	11,325
10 to 19 percent	10,003	1,229	395	8,286	4,264
20 percent or more	23,194	338	1,030	23,339	1,783

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 6. Percentage distribution of enrollments in distance education courses of students regularly enrolled in the districts, by instructional level and district characteristics: 2002–03

District characteristic	Elementary schools	Middle or junior high schools	High schools	Combined or ungraded schools[1]
All public school districts	1!	2	68	29
District enrollment size				
Less than 2,500	#	1	63	36
2,500 to 9,999	#	2	52	45
10,000 or more	2!	3	83	12!
Metropolitan status				
Urban	2!	2!	61	35
Suburban	#	2	66	32!
Rural	#	2	77	21
Region				
Northeast	#	#	41!	58!
Southeast	2!	4	85	8
Central	1!	1	56	42
West	#	2	79	18!
Poverty concentration				
Less than 10 percent	1!	3	74	23!
10 to 19 percent	1!	2	80	17
20 percent or more	1!	3!	89	7

Rounds to zero.

! Interpret data with caution. The coefficient of variation is greater than 50 percent.

[1] Combined or ungraded schools are those in which the grades offered in the school span both elementary and secondary grades or that are not divided into grade levels.

NOTE: Percentages are based on unrounded numbers. Percentages are based on the estimated 327,670 enrollments in distance education courses in 2002–03. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 6-A. Standard errors for the percentage distribution of enrollments in distance education courses of students regularly enrolled in the districts, by instructional level and district characteristics: 2002–03

District characteristic	Elementary schools	Middle or junior high schools	High schools	Combined or ungraded schools
All public school districts	0.5	0.5	6.7	6.8
District enrollment size				
Less than 2,500	0.1	0.4	16.6	16.9
2,500 to 9,999	0.1	0.7	4.0	3.7
10,000 or more	1.3	1.0	9.3	9.3
Metropolitan status				
Urban	1.6	1.1	12.3	11.0
Suburban	0.1	0.8	16.1	16.7
Rural	0.1	0.5	3.7	3.7
Region				
Northeast	0.3	0.7	51.6	52.4
Southeast	2.1	1.3	3.3	2.2
Central	0.5	0.3	3.1	3.0
West	0.2	1.0	10.3	10.2
Poverty concentration				
Less than 10 percent	0.7	1.0	12.9	13.4
10 to 19 percent	1.3	0.4	4.1	3.9
20 percent or more	0.5	1.4	4.3	3.1

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 7. Number of enrollments in distance education courses of students regularly enrolled in the districts, by curriculum area and district characteristics: 2002–03

District characteristic	All curriculum areas	General elementary school curriculum	English/ language arts	Social studies/ social sciences	Computer science	Natural/ physical science	Mathe-matics	Foreign languages	Other
All public school districts	327,670	8,220	61,590	74,570	11,660	38,920	49,210	39,090	44,430
District enrollment size									
Less than 2,500	117,730	2,890!	21,480	25,550	3,060	12,900	15,060	22,300	14,490
2,500 to 9,999	85,640	370	15,810	18,950	1,970	11,090	13,480	9,290	14,690
10,000 or more	124,300	4,960!	24,300	30,070	6,630	14,930	20,670	7,500	15,250
Metropolitan status									
Urban	103,390	2,340!	21,320	23,240	5,510	15,750	17,710	5,440	12,080
Suburban	123,410	5,220!	23,170	28,060	2,930	13,310	17,900	11,880	20,940
Rural	100,870	660!	17,090	23,270	3,220	9,850	13,600	21,770	11,400
Region									
Northeast	42,070!	2,460!	6,060!	8,280!	3,020!	4,830!	4,730!	5,300	7,380!
Southeast	59,010	1,270!	10,240	12,490	1,420	5,400	8,920	11,120	8,150
Central	108,140	1,070!	21,250	21,500	2,750	14,270	17,040	14,250	16,000
West	118,450	3,420!	24,040	32,290	4,470	14,420	18,520	8,410	12,890
Poverty concentration									
Less than 10 percent	77,380	3,250!	15,300	17,350	2,140	6,900	10,590	9,600	12,250
10 to 19 percent	97,300	1,640!	18,370	23,820	3,000	10,720	15,030	10,600	14,120
20 percent or more	93,280	720!	17,800	22,770	6,290	11,800	14,150	15,330	4,430

! Interpret data with caution. The coefficient of variation is greater than 50 percent.

NOTE: Enrollments may include duplicated counts of students, since districts were instructed to count a student enrolled in multiple courses for each course in which he or she was enrolled. For the FRSS study sample, there were 3 cases for which district enrollment size was missing and 112 cases for which poverty concentration was missing. Detail may not sum to totals because of rounding or missing data.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 7-A. Standard errors for the number of enrollments in distance education courses of students regularly enrolled in the districts, by curriculum area and district characteristics: 2002–03

District characteristic	All curriculum areas	General elementary school curriculum	English/ language arts	Social studies/ social sciences	Computer science	Natural/ physical science	Mathe-matics	Foreign languages	Other
All public school districts	36,233	3,760	8,399	8,896	2,141	6,706	7,145	3,793	6,906
District enrollment size									
Less than 2,500	24,742	2,467	4,540	4,677	590	3,566	3,405	3,313	5,530
2,500 to 9,999	7,597	114	2,123	2,443	428	1,155	1,464	1,530	1,379
10,000 or more	25,922	2,955	6,690	7,217	2,032	5,201	5,960	1,776	3,901
Metropolitan status									
Urban	25,612	1,338	6,798	7,379	2,028	5,289	5,562	1,724	1,189
Suburban	27,446	3,594	4,859	5,529	566	4,301	4,287	2,531	6,993
Rural	8,232	371	2,602	2,794	612	1,425	1,878	2,030	1,846
Region									
Northeast	23,613	2,451	3,856	4,349	2,023	3,462	3,191	2,151	5,327
Southeast	6,454	1,225	2,572	1,622	297	818	1,224	1,953	1,300
Central	7,378	554	2,448	2,042	587	1,295	1,695	2,028	1,570
West	27,630	2,707	7,184	8,032	532	5,334	6,128	1,700	4,115
Poverty concentration									
Less than 10 percent	13,761	2,729	3,678	3,438	523	1,254	2,940	1,650	3,921
10 to 19 percent	10,003	1,232	3,030	2,887	528	1,615	2,044	1,497	2,142
20 percent or more	23,194	408	5,991	6,690	2,114	5,129	5,329	2,598	869

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 8. Percentage distribution of enrollments in distance education courses of students regularly enrolled in the districts, by curriculum area and district characteristics: 2002–03

District characteristic	General elementary school curriculum	English/ language arts	Social studies/ social sciences	Computer science	Natural/ physical science	Mathe-matics	Foreign languages	Other
All public school districts	3	19	23	4	12	15	12	14
District enrollment size								
Less than 2,500	2!	18	22	3	11	13	19	12
2,500 to 9,999	#	18	22	2	13	16	11	17
10,000 or more	4!	20	24	5	12	17	6	12
Metropolitan status								
Urban	2!	21	22	5	15	17	5	12
Suburban	4!	19	23	2	11	15	10	17
Rural	1!	17	23	3	10	13	22	11
Region								
Northeast	6!	14	20	7!	11	11	13!	18
Southeast	2!	17	21	2	9	15	19	14
Central	1!	20	20	3	13	16	13	15
West	3!	20	27	4	12	16	7	11
Poverty concentration								
Less than 10 percent	4!	20	22	3	9	14	12	16
10 to 19 percent	2!	19	24	3	11	15	11	15
20 percent or more	1!	19	24	7	13	15	16	5

Rounds to zero.

! Interpret data with caution. The coefficient of variation is greater than 50 percent.

NOTE: Percentages are based on unrounded numbers. Percentages are based on the estimated 327,670 enrollments in distance education courses in 2002–03. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 8-A. Standard errors for the percentage distribution of enrollments in distance education courses of students regularly enrolled in the districts, by curriculum area and district characteristics: 2002–03

District characteristic	General elementary school curriculum	English/ language arts	Social studies/ social sciences	Computer science	Natural/ physical science	Mathe-matics	Foreign languages	Other
All public school districts	1.0	1.2	1.0	0.8	1.1	1.0	1.5	1.8
District enrollment size								
Less than 2,500	2.0	1.8	1.8	0.7	1.1	0.9	3.7	2.9
2,500 to 9,999	0.1	1.4	1.7	0.5	0.8	1.1	1.8	1.1
10,000 or more	2.4	2.0	1.9	2.1	2.7	2.1	2.0	3.8
Metropolitan status								
Urban	1.4	2.1	2.5	2.5	2.0	1.8	2.2	3.3
Suburban	2.4	1.8	1.7	0.6	2.0	1.5	2.7	3.5
Rural	0.4	1.7	1.9	0.6	1.0	1.2	2.3	1.7
Region								
Northeast	5.8	2.9	2.9	9.3	4.1	3.0	12.5	6.5
Southeast	2.1	3.2	2.1	0.5	0.9	1.6	3.2	1.7
Central	0.5	1.5	1.1	0.5	0.9	1.1	1.8	1.4
West	2.3	2.1	1.9	1.1	2.8	2.3	2.3	4.1
Poverty concentration								
Less than 10 percent	3.4	2.5	1.9	0.9	2.0	2.3	3.1	4.6
10 to 19 percent	1.3	1.8	1.9	0.6	1.0	1.5	1.4	1.8
20 percent or more	0.5	2.5	2.0	3.1	3.1	2.7	5.9	1.5

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 9. Number and percent of districts with students enrolled in distance education courses indicating that students regularly enrolled in the district were enrolled in Advanced Placement or college-level courses offered through distance education, by district characteristics: 2002–03

District characteristic	Number of districts with students enrolled in distance education courses	Number of districts with students enrolled in Advanced Placement or college-level courses offered through distance education	Percent of districts with students enrolled in Advanced Placement or college-level courses offered through distance education
All public school districts	5,480	2,730	50
District enrollment size			
Less than 2,500	4,060	2,140	53
2,500 to 9,999	1,010	400	39
10,000 or more	410	190	48
Metropolitan status			
Urban	280	120	42
Suburban	1,700	760	45
Rural	3,500	1,850	53
Region			
Northeast	640	280	43
Southeast	790	330	42
Central	2,500	1,260	50
West	1,540	860	56
Poverty concentration			
Less than 10 percent	1,620	790	49
10 to 19 percent	2,220	1,040	47
20 percent or more	1,560	870	56

NOTE: Percentages are based on unrounded numbers. Data presented in this table are based on the estimated 5,480 districts with students enrolled in distance education courses in 2002–03. For the FRSS study sample, there were 3 cases for which district enrollment size was missing and 112 cases for which poverty concentration was missing. Detail may not sum to totals because of rounding or missing data.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 9-A. Standard errors for the number and percent of districts with students enrolled in distance education courses indicating that students regularly enrolled in the district were enrolled in Advanced Placement or college-level courses offered through distance education, by district characteristics: 2002–03

District characteristic	Number of districts with students enrolled in distance education courses	Number of districts with students enrolled in Advanced Placement or college-level courses offered through distance education	Percent of districts with students enrolled in Advanced Placement or college-level courses offered through distance education
All public school districts	172	148	2.2
District enrollment size			
Less than 2,500	160	138	2.8
2,500 to 9,999	54	42	3.5
10,000 or more	20	16	3.3
Metropolitan status			
Urban	35	21	6.6
Suburban	107	60	2.9
Rural	127	136	3.2
Region			
Northeast	61	33	4.9
Southeast	66	44	5.3
Central	154	118	3.2
West	114	92	4.3
Poverty concentration			
Less than 10 percent	102	79	4.0
10 to 19 percent	107	90	3.1
20 percent or more	99	101	4.9

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 10. Number and percent of enrollments in Advanced Placement or college-level courses offered through distance education of students regularly enrolled in the district, by district characteristics: 2002–03

District characteristic	Total number of enrollments in distance education courses	Number of enrollments in Advanced Placement or college-level distance education courses	Percent of all distance education enrollments that are in Advanced Placement or college-level distance education courses
All public school districts	327,670	45,320	14
District enrollment size			
Less than 2,500	117,730	27,880	24
2,500 to 9,999	85,640	8,490	10
10,000 or more	124,300	8,960	7
Metropolitan status			
Urban	103,390	4,020	4
Suburban	123,410	13,980	11
Rural	100,870	27,330	27
Region			
Northeast	42,070!	4,360	10!
Southeast	59,010	7,100	12
Central	108,140	14,380	13
West	118,450	19,490	16
Poverty concentration			
Less than 10 percent	77,380	12,040	16
10 to 19 percent	97,300	16,890	17
20 percent or more	93,280	15,120	16

! Interpret data with caution. The coefficient of variation is greater than 50 percent.

NOTE: Percentages are based on unrounded numbers. Enrollments may include duplicated counts of students, since districts were instructed to count a student enrolled in multiple courses for each course in which he or she was enrolled. Percentages presented in this table are based on the estimated 327,670 enrollments in distance education courses in 2002–03. For the FRSS study sample, there were 3 cases for which district enrollment size was missing and 112 cases for which poverty concentration was missing. Detail may not sum to totals because of rounding or missing data.

SOURCE: U.S. Department of Education, National Center for Education Statistics Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 10-A. Standard errors for the number and percent of enrollments in Advanced Placement or college-level courses offered through distance education of students regularly enrolled in the district, by district characteristics: 2002–03

District characteristic	Total number of enrollments in distance education courses	Number of enrollments in Advanced Placement or college-level distance education courses	Percent of all distance education enrollments that are in Advanced Placement or college-level distance education courses
All public school districts	36,233	5,126	2.1
District enrollment size			
Less than 2,500	24,742	3,777	6.2
2,500 to 9,999	7,597	2,631	3.0
10,000 or more	25,922	2,662	2.6
Metropolitan status			
Urban	25,612	944	1.5
Suburban	27,446	3,289	3.1
Rural	8,232	4,494	4.1
Region			
Northeast	23,613	1,234	8.6
Southeast	6,454	1,195	2.1
Central	7,378	2,192	2.0
West	27,630	4,443	5.6
Poverty concentration			
Less than 10 percent	13,761	2,828	4.1
10 to 19 percent	10,003	4,043	4.0
20 percent or more	23,194	2,065	5.7

SOURCE: U.S. Department of Education, National Center for Education Statistics Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 11. Percent of districts reporting that various technologies were used as primary modes of instructional delivery for any distance education courses in which students in their district were enrolled, by district characteristics: 2002–03

District characteristic	Internet courses using synchronous computer-based instruction[1]	Internet courses using asynchronous computer-based instruction[1]	Two-way interactive video[2]	One-way prerecorded video	Other technologies[3]
All public school districts	21	47	55	16	4
District enrollment size					
Less than 2,500	19	42	60	16	5
2,500 to 9,999	21	60	44	15	3
10,000 or more	31	72	33	19	6
Metropolitan status					
Urban	21	69	38	20	3
Suburban	24	58	39	14	4
Rural	19	40	64	16	5
Region					
Northeast	19	47	54	8	12
Southeast	30	52	48	19	5
Central	21	41	58	16	2
West	15	56	53	18	4
Poverty concentration					
Less than 10 percent	18	55	46	13	4
10 to 19 percent	25	42	55	17	4
20 percent or more	17	45	64	16	6

[1] Synchronous refers to simultaneous or "real-time" interaction, whereas asynchronous is defined as not simultaneous.

[2] Two-way interactive video refers to two-way video with two-way audio.

[3] Other technologies mentioned included teleconferencing, CD-ROM, and other software packages.

NOTE: Percentages are based on unrounded numbers. Percentages are based on the estimated 5,480 districts with students enrolled in distance education courses in 2002–03. Percentages sum to more than 100 because some districts used different types of technologies as primary modes of instructional delivery for different distance education courses.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 11-A. Standard errors for the percent of districts reporting that various technologies were used as primary modes of instructional delivery for any distance education courses in which students in their district were enrolled, by district characteristics: 2002–03

District characteristic	Internet courses using synchronous computer-based instruction	Internet courses using asynchronous computer-based instruction	Two-way interactive video	One-way prerecorded video	Other technologies
All public school districts	1.6	1.8	1.9	1.6	0.8
District enrollment size					
Less than 2,500	2.1	2.4	2.4	2.0	1.0
2,500 to 9,999	2.2	2.7	3.2	2.3	1.3
10,000 or more	3.0	3.4	3.4	3.0	1.4
Metropolitan status					
Urban	4.3	4.9	5.3	5.0	1.5
Suburban	3.0	2.8	3.1	2.0	1.3
Rural	2.1	2.7	2.4	2.0	1.1
Region					
Northeast	4.5	6.4	5.9	2.4	4.2
Southeast	4.1	5.3	5.0	3.2	1.5
Central	2.6	2.9	3.4	3.1	1.1
West	3.4	3.5	3.9	3.0	1.7
Poverty concentration					
Less than 10 percent	3.2	3.7	3.6	2.9	1.5
10 to 19 percent	2.8	2.8	3.2	2.5	1.2
20 percent or more	2.7	3.6	3.3	2.7	1.9

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 12. Percentage distribution of districts reporting that various technologies were used for the greatest number of distance education courses in which students in their district were enrolled, by district characteristics: 2002–03

District characteristic	Internet courses using synchronous computer-based instruction[1]	Internet courses using asynchronous computer-based instruction[1]	Two-way interactive video[2]	One-way prerecorded video	Other technologies[3]
All public school districts	9	35	49	7	1
District enrollment size					
Less than 2,500	8	29	54	7	1
2,500 to 9,999	9	48	38	5	1!
10,000 or more	11	60	24	3	2
Metropolitan status					
Urban	10	57	31	2!	‡
Suburban	11	47	36	5	1
Rural	7	27	57	7	2
Region					
Northeast	6	39	49	2!	4!
Southeast	14	39	39	7	1!
Central	10	27	54	8	‡
West	4	42	46	6	2!
Poverty concentration					
Less than 10 percent	8	43	42	5	2!
10 to 19 percent	10	31	50	9	1!
20 percent or more	8	30	57	4	2!

! Interpret data with caution. The coefficient of variation is greater than 50 percent.

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

[1] Synchronous refers to simultaneous or "real-time" interaction, whereas asynchronous is defined as not simultaneous.

[2] Two-way interactive video refers to two-way video with two-way audio.

[3] Other technologies mentioned included teleconferencing, CD-ROM, and other software packages.

NOTE: Percentages are based on unrounded numbers. Percentages are based on the estimated 5,480 districts with students enrolled in distance education courses in 2002–03. Detail may not sum to totals because of rounding and not reporting where there are too few cases for a reliable estimate.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 12-A. Standard errors for the percentage distribution of districts reporting that various technologies were used for the greatest number of distance education courses in which students in their district were enrolled, by district characteristics: 2002–03

District characteristic	Internet courses using synchronous computer-based instruction	Internet courses using asynchronous computer-based instruction	Two-way interactive video	One-way prerecorded video	Other technologies
All public school districts	1.2	1.6	1.8	1.0	0.5
District enrollment size					
Less than 2,500	1.5	2.2	2.3	1.4	0.7
2,500 to 9,999	1.6	2.6	3.1	1.3	0.8
10,000 or more	2.1	3.2	3.0	1.2	1.0
Metropolitan status					
Urban	3.5	5.1	4.7	1.3	‡
Suburban	2.2	3.0	3.0	1.5	0.6
Rural	1.5	2.2	2.4	1.5	0.8
Region					
Northeast	2.3	5.8	6.0	1.2	2.5
Southeast	3.1	4.8	5.0	1.9	0.8
Central	1.8	2.7	3.6	1.9	‡
West	1.5	3.1	3.4	2.0	1.1
Poverty concentration					
Less than 10 percent	1.8	3.7	3.7	2.4	1.3
10 to 19 percent	2.0	2.6	3.2	1.9	0.4
20 percent or more	2.0	3.0	3.4	1.5	1.1

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

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), “Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03,” FRSS 84, 2003.

Table 13. Percent of districts with students enrolled in online distance education courses, and percent of those districts indicating the access location of the online courses, by district characteristics: 2002–03

District characteristic	Districts with students enrolled in online distance education courses[1]	Access location for online courses[2]		
		School	Home	Other location
All public school districts	59	92	60	8
District enrollment size				
Less than 2,500	53	95	55	6
2,500 to 9,999	71	87	66	9
10,000 or more	80	87	77	17
Metropolitan status				
Urban	74	89	78	20
Suburban	71	88	67	7
Rural	51	96	53	7
Region				
Northeast	57	87	61	6!
Southeast	67	96	63	8
Central	55	92	56	8
West	61	93	64	9
Poverty concentration				
Less than 10 percent	66	90	64	7
10 to 19 percent	56	93	60	7
20 percent or more	53	95	53	10

! Interpret data with caution. The coefficient of variation is greater than 50 percent.

[1] Percentages are based on the estimated 5,480 districts with students enrolled in distance education courses in 2002–03.

[2] Percentages are based on the estimated 3,200 districts with students enrolled in online distance education courses in 2002–03. Percentages sum to more than 100 because students in districts could access online courses from more than one location.

NOTE: Percentages are based on unrounded numbers.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 13-A. Standard errors for the percent of districts with students enrolled in online distance education courses, and percent of those districts indicating the access location of the online courses, by district characteristics: 2002–03

District characteristic	Districts with students enrolled in online distance education courses	Access location for online courses		
		School	Home	Other location
All public school districts	1.9	1.2	3.0	1.3
District enrollment size				
Less than 2,500	2.6	1.6	4.1	1.6
2,500 to 9,999	2.7	2.6	3.4	2.4
10,000 or more	2.8	2.6	3.4	2.5
Metropolitan status				
Urban	4.9	3.8	6.8	4.9
Suburban	2.4	1.9	3.7	1.4
Rural	2.8	1.3	4.1	2.1
Region				
Northeast	5.9	4.0	7.5	3.0
Southeast	5.2	1.3	6.3	2.6
Central	3.5	2.2	4.3	2.2
West	3.3	2.2	5.5	2.6
Poverty concentration				
Less than 10 percent	3.8	1.9	5.1	1.9
10 to 19 percent	2.8	1.8	4.2	1.9
20 percent or more	3.7	2.1	4.4	3.1

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 14. Percent of districts with students accessing online distance education courses from home, and percent of those districts that provided or paid for various items for all or some of the students accessing online distance education courses from home, by district characteristics: 2002–03

District characteristic	Districts with students accessing online distance education courses from home[1]	Items provided or paid for by the district[2]					
		Computer		Internet service provider		Other[3]	
		For all students	For some students	For all students	For some students	For all students	For some students
All public school districts	60	24	8	27	7	6	2
District enrollment size							
Less than 2,500	55	29	7	32	7	7	‡
2,500 to 9,999	66	17	9	20	5	5	3!
10,000 or more	77	11	11	15	8	5	4
Metropolitan status							
Urban	78	9	16	19	11	‡	7
Suburban	67	16	7	20	6	5	1!
Rural	53	33	8	34	7	8	3!
Region							
Northeast	61	14!	10!	27	10!	‡	‡
Southeast	63	30	6	39	6	4!	‡
Central	56	27	3	26	2!	9	1
West	64	19	15	20	13	4!	5
Poverty concentration							
Less than 10 percent	64	24	5	25	4	5	‡
10 to 19 percent	60	21	6	22	5	5	2!
20 percent or more	53	29	16	36	14	9	5!

! Interpret data with caution. The coefficient of variation is greater than 50 percent.

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

[1] Percentages are based on the estimated 3,200 districts with students enrolled in online distance education courses in 2002–03.

[2] Percentages are based on the estimated 1,920 districts with students accessing online distance education courses from home in 2002–03.

[3] Examples include software programs and phone service for dial-up Internet service.

NOTE: Percentages are based on unrounded numbers.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 14-A. Standard errors for the percent of districts with students accessing online distance education courses from home, and percent of those districts that provided or paid for various items for all or some of the students accessing online distance education courses from home, by district characteristics: 2002–03

District characteristic	Districts with students accessing online distance education courses from home	Items provided or paid for by the district					
		Computer		Internet service provider		Other	
		For all students	For some students	For all students	For some students	For all students	For some students
All public school districts	3.0	3.1	1.7	3.0	1.6	1.6	0.9
District enrollment size							
Less than 2,500	4.1	5.1	2.4	4.7	2.3	2.5	‡
2,500 to 9,999	3.4	3.1	2.6	3.3	2.0	1.9	1.5
10,000 or more	3.4	3.0	2.8	2.8	2.9	1.9	1.6
Metropolitan status							
Urban	6.8	4.0	4.3	7.7	4.3	‡	3.3
Suburban	3.7	3.3	2.5	3.3	2.4	1.5	0.6
Rural	4.1	5.7	2.8	5.7	2.5	2.6	1.7
Region							
Northeast	7.5	7.2	5.1	9.3	5.4	‡	‡
Southeast	6.3	7.2	2.2	7.3	2.6	2.4	‡
Central	4.3	5.0	1.4	5.2	0.9	2.7	0.4
West	5.5	5.2	4.9	5.1	4.8	2.5	2.7
Poverty concentration							
Less than 10 percent	5.1	5.2	2.1	5.0	1.6	1.7	‡
10 to 19 percent	4.2	4.9	2.3	4.7	2.3	2.4	1.2
20 percent or more	4.4	6.3	6.2	6.3	6.2	4.2	3.5

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

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 15. Percentage distribution of districts indicating whether various entities delivered the distance education courses in which students in their district were enrolled: 2002–03

Entity	Yes	No	Don't know
Cyber (online) charter school in the district	3	95	2
Other schools in the district	8	91	1
Their district (delivered centrally from the district)	16	83	1
Another local school district, or schools in other districts, in their state	34	64	2
Education service agencies within their state[1]	18	80	2
State virtual school in their state[2]	18	81	1
State virtual school in another state[2]	4	94	2
Districts or schools in other states[3]	4	94	2
Postsecondary institution	48	50	1
Independent vendor	18	79	3
Other[4]	3	92	5

[1] This category does not include the state education agency or local school districts.

[2] A state virtual school is a state-centralized collection of K–12 courses available through Internet- or web-based methods.

[3] Other than state virtual schools.

[4] Other responses mentioned included consortiums of schools and community education programs.

NOTE: Percentages are based on unrounded numbers. Percentages in this table are based on the estimated 5,480 districts with students enrolled in distance education courses in 2002–03. Percentages of districts indicating "yes" for the various entities sum to more than 100 because districts could have more than one entity delivering distance education courses. Detail may not sum to totals because of rounding or missing data.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 15-A. Standard errors for the percentage distribution of districts indicating whether various entities delivered the distance education courses in which students in their district were enrolled: 2002–03

Entity	Yes	No	Don't know
Cyber (online) charter school in the district	0.7	0.9	0.5
Other schools in the district	1.0	1.0	0.2
Their district (delivered centrally from the district)	1.3	1.4	0.3
Another local school district, or schools in other districts, in their state	2.4	2.3	0.4
Education service agencies within their state	1.5	1.6	0.5
State virtual school in their state	1.5	1.6	0.3
State virtual school in another state	0.7	0.9	0.4
Districts or schools in other states	0.9	1.0	0.4
Postsecondary institution	2.3	2.3	0.4
Independent vendor	1.8	1.9	0.5
Other	0.7	0.9	0.7

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 16. Percent of districts indicating that various entities delivered the distance education courses in which students in their district were enrolled, by district characteristics: 2002–03

District characteristic	Cyber (online) charter school in the district	Other schools in the district	Their district (delivered centrally from the district)	Another local school district, or schools in other districts, in their state	Education service agencies within their state[1]	State virtual school in their state[2]	State virtual school in another state[2]	Districts or schools in other states[3]	Post-secondary institution	Indepen-dent vendor	Other[4]
All public school districts	3	8	16	34	18	18	4	4	48	18	3
District enrollment size											
Less than 2,500	3	5	15	39	18	15	3	4	54	16	3
2,500 to 9,999	3	15	17	25	18	27	4	3	30	23	4
10,000 or more	5	28	22	13	14	27	8	5	33	28	3
Metropolitan status											
Urban	8!	25	23	20	20	17	6	3!	22	29	‡
Suburban	5	9	15	25	20	19	4	2	44	23	4
Rural	2	6	16	40	16	18	4	5	53	15	2
Region											
Northeast	4	11	21	38	18	6	3!	5	39	21	3!
Southeast	1!	16	15	27	18	43	7	3	23	20	4
Central	3	7	16	38	17	17	4	5	53	13	3
West	3	5	15	29	17	12	3	4	58	25	2!
Poverty concentration											
Less than 10 percent	4	9	3	33	16	15	5	5	49	21	4
10 to 19 percent	3	7	2	33	19	18	4	4	50	18	2!
20 percent or more	1	10	3	38	17	22	3	4	46	14	3

! Interpret data with caution. The coefficient of variation is greater than 50 percent.

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

[1] This category does not include the state education agency or local school districts.

[2] A state virtual school is a state-centralized collection of K-12 courses available through Internet- or web-based methods.

[3] Other than state virtual schools.

[4] Other responses mentioned included consortiums of schools and community education programs.

NOTE: Percentages are based on unrounded numbers. Percentages are based on the estimated 5,480 districts with students enrolled in distance education courses in 2002–03. Percentages sum to more than 100 because districts could have more than one entity delivering distance education courses.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 16-A. Standard errors for the percent of districts indicating that various entities delivered the distance education courses in which students in their district were enrolled, by district characteristics: 2002–03

District characteristic	Cyber (online) charter school in the district	Other schools in the district	Their district (delivered centrally from the district)	Another local school district, or schools in other districts, in their state	Education service agencies within their state	State virtual school in their state	State virtual school in another state	Districts or schools in other states	Post-secondary institution	Independent vendor	Other
All public school districts	0.7	1.0	1.3	2.4	1.5	1.5	0.7	0.9	2.3	1.8	0.7
District enrollment size											
Less than 2,500	0.9	1.0	1.6	3.3	2.0	1.8	0.9	1.2	2.8	2.3	0.9
2,500 to 9,999	1.1	2.4	2.8	2.5	2.3	2.8	1.4	1.0	3.1	3.0	1.2
10,000 or more	1.4	3.1	2.7	2.8	2.6	2.9	2.0	1.6	3.8	3.0	1.1
Metropolitan status											
Urban	4.0	4.2	5.8	5.4	5.9	3.7	2.6	1.8	4.8	5.6	‡
Suburban	1.2	1.6	2.4	2.4	2.0	2.6	1.2	0.9	3.8	2.7	1.5
Rural	0.7	1.2	1.9	3.4	2.1	2.2	1.0	1.4	3.0	2.3	0.9
Region											
Northeast	1.8	3.6	3.9	5.8	3.7	2.0	1.9	2.1	6.0	4.5	1.6
Southeast	0.7	2.6	2.9	4.2	3.2	4.1	2.4	1.1	3.2	3.5	1.3
Central	1.0	1.6	2.1	4.1	2.5	1.8	1.2	1.4	3.9	1.9	1.3
West	1.6	1.3	3.1	3.9	3.0	3.0	1.1	1.4	4.1	4.1	1.1
Poverty concentration											
Less than 10 percent	1.1	1.8	2.5	3.6	3.3	2.5	1.5	1.6	3.6	3.3	1.5
10 to 19 percent	1.1	1.5	2.4	3.6	2.7	2.4	1.3	1.3	3.5	2.9	1.1
20 percent or more	0.6	1.9	3.3	3.9	3.1	2.8	1.4	1.8	4.7	2.5	1.5

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

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), “Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03,” FRSS 84, 2003.

Table 17. Percent of districts indicating that they delivered distance education courses to students who were not regularly enrolled in their district, by district characteristics: 2002–03

District characteristic	Percent
All public school districts	21
District enrollment size	
Less than 2,500	22
2,500 to 9,999	18
10,000 or more	19
Metropolitan status	
Urban	15
Suburban	20
Rural	22
Region	
Northeast	29
Southeast	13
Central	22
West	19
Poverty concentration	
Less than 10 percent	19
10 to 19 percent	22
20 percent or more	22

NOTE: Percentages are based on unrounded numbers. Percentages are based on the estimated 5,480 districts with students enrolled in distance education courses in 2002–03.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 17-A. Standard errors for the percent of districts indicating that they delivered distance education courses to students who were not regularly enrolled in their district, by district characteristics: 2002–03

District characteristic	Percent
All public school districts	1.7
District enrollment size	
Less than 2,500	2.3
2,500 to 9,999	2.3
10,000 or more	2.6
Metropolitan status	
Urban	4.0
Suburban	2.5
Rural	2.2
Region	
Northeast	4.0
Southeast	2.6
Central	3.1
West	3.4
Poverty concentration	
Less than 10 percent	2.8
10 to 19 percent	3.1
20 percent or more	3.7

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 18. Percentage distribution of districts indicating how important various reasons were for having distance education courses in their district: 2002–03

Reason[1]	Not important	Somewhat important	Very important	Don't know
Offering courses not otherwise available at the school	9	11	80	#
Meeting the needs of specific groups of students	15	22	59	3
Offering Advanced Placement or college-level courses	26	19	50	4
Reducing scheduling conflicts for students	41	33	23	2
Permitting students who failed a course to take it again	64	15	17	4
Addressing growing populations and limited space	72	17	8	3
Generating more district revenues	77	12	4	7

Rounds to zero.

[1] Although respondents were able to specify some other reason for having distance education, the only available response options for this category were somewhat important and very important (see appendix B). Therefore, this category is not included in this table.

NOTE: Percentages are based on unrounded numbers. Percentages are based on the estimated 5,480 districts with students enrolled in distance education courses in 2002–03. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 18-A. Standard errors for the percentage distribution of districts indicating how important various reasons were for having distance education courses in their district: 2002–03

Reason	Not important	Somewhat important	Very important	Don't know
Offering courses not otherwise available at the school	1.0	1.2	1.4	0.1
Offering Advanced Placement or college-level courses	1.7	1.9	1.9	0.8
Addressing growing populations and limited space	1.7	1.4	1.0	0.7
Reducing scheduling conflicts for students	2.4	2.4	1.6	0.7
Permitting students who failed a course to take it again	1.6	1.3	1.4	0.8
Meeting the needs of specific groups of students	1.6	1.9	2.0	0.8
Generating more district revenues	2.0	1.6	0.7	1.1

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 19. Percent of districts reporting that various reasons were somewhat or very important for having distance education courses in their district, by district characteristics: 2002–03

District characteristic	Offering courses not otherwise available at the school	Meeting the needs of specific groups of students	Offering Advanced Placement or college-level courses	Reducing scheduling conflicts for students	Permitting students who failed a course to take it again	Addressing growing populations and limited space	Generating more district revenues
All public school districts	91	81	69	56	32	25	16
District enrollment size							
Less than 2,500	93	82	74	56	30	21	15
2,500 to 9,999	86	79	54	52	34	33	14
10,000 or more	82	86	59	70	50	44	19
Metropolitan status							
Urban	79	82	49	61	47	36	18
Suburban	86	79	59	56	33	28	15
Rural	95	83	76	56	31	22	16
Region							
Northeast	91	81	61	48	19	30	4!
Southeast	93	84	67	65	39	46	9
Central	94	82	69	59	26	16	18
West	85	80	74	51	44	26	19
Poverty concentration							
Less than 10 percent	93	80	66	54	27	19	11
10 to 19 percent	91	79	67	54	34	22	15
20 percent or more	91	88	77	62	34	35	21

! Interpret data with caution. The coefficient of variation is greater than 50 percent.

NOTE: Percentages are based on unrounded numbers. Percentages are based on the estimated 5,480 districts with students enrolled in distance education courses in 2002–03.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 19-A. Standard errors for the percent of districts reporting that various reasons were somewhat or very important for having distance education courses in their district, by district characteristics: 2002–03

District characteristic	Offering courses not otherwise available at the school	Meeting the needs of specific groups of students	Offering Advanced Placement or college-level courses	Reducing scheduling conflicts for students	Permitting students who failed a course to take it again	Addressing growing populations and limited space	Generating more district revenues
All public school districts	1.0	1.7	1.7	2.4	1.5	1.5	1.8
District enrollment size							
Less than 2,500	1.4	2.3	2.4	2.9	1.9	1.9	2.5
2,500 to 9,999	1.9	2.7	3.1	3.2	3.0	3.1	2.2
10,000 or more	2.9	2.2	3.8	3.5	3.4	3.5	2.3
Metropolitan status							
Urban	4.9	4.6	6.6	6.8	5.6	7.6	5.2
Suburban	2.2	2.5	3.2	3.3	2.5	2.9	2.1
Rural	1.0	2.2	2.3	3.3	2.2	1.9	2.6
Region							
Northeast	3.8	4.2	4.7	4.9	3.9	5.2	1.8
Southeast	2.2	2.9	4.1	4.3	4.6	4.1	2.1
Central	1.0	2.5	3.0	3.5	2.6	1.9	2.8
West	2.7	3.7	3.9	4.4	3.6	3.4	3.3
Poverty concentration							
Less than 10 percent	1.5	2.6	3.2	4.2	3.2	2.7	2.2
10 to 19 percent	0.2	3.4	2.9	3.2	2.9	2.4	2.7
20 percent or more	2.0	2.8	3.1	4.7	3.2	3.5	3.5

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 20. Percent of districts with students enrolled in distance education courses that were planning to expand distance education courses, by district characteristics: 2002–03

District characteristic	Percent
All public school districts	72
District enrollment size	
Less than 2,500	73
2,500 to 9,999	69
10,000 or more	76
Metropolitan status	
Urban	70
Suburban	69
Rural	74
Region	
Northeast	71
Southeast	77
Central	71
West	73
Poverty concentration	
Less than 10 percent	69
10 to 19 percent	71
20 percent or more	78

NOTE: Percentages are based on unrounded numbers. Percentages are based on the estimated 5,480 districts with students enrolled in distance education courses in 2002–03.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 20-A. Standard errors for the percent of districts with students enrolled in distance education courses that were planning to expand distance education courses, by district characteristics: 2002–03

District characteristic	Percent
All public school districts	2.0
District enrollment size	
Less than 2,500	2.5
2,500 to 9,999	3.2
10,000 or more	2.6
Metropolitan status	
Urban	5.0
Suburban	3.7
Rural	2.6
Region	
Northeast	4.8
Southeast	4.5
Central	3.2
West	3.3
Poverty concentration	
Less than 10 percent	3.5
10 to 19 percent	3.1
20 percent or more	3.8

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 21. Percentage distribution of districts indicating the extent to which various factors were preventing them from expanding distance education courses: 2002–03

Factor	Not at all	Minor extent	Moderate extent	Major extent
Course development and/or purchasing costs	12	20	32	36
Limited technological infrastructure to support distance education	41	26	24	9
Concerns about course quality	30	33	26	11
Restrictive federal, state, or local laws or policies	54	29	10	7
Concerns about receiving funding based on student attendance for distance education courses	40	24	20	16
Other[1]	†	#	4	7

† Not applicable.

Rounds to zero.

[1] Percentage distribution does not sum to 100 because 90 percent of districts did not provide an "other" response. Other factors mentioned included scheduling conflicts, staffing issues, and lack of need.

NOTE: Percentages are based on unrounded numbers. Percentages are based on the estimated 3,960 districts that indicated they were planning to expand distance education courses.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 21-A. Standard errors for the percentage distribution of districts indicating the extent to which various factors were preventing them from expanding distance education courses: 2002–03

Factor	Not at all	Minor extent	Moderate extent	Major extent
Course development and/or purchasing costs	1.8	2.1	2.4	2.4
Limited technological infrastructure to support distance education	2.3	2.3	2.5	1.2
Concerns about course quality				
Restrictive federal, state, or local laws or policies	2.1	2.2	2.0	1.3
Concerns about receiving funding based on student attendance for distance education courses	2.5	2.3	1.4	1.1
Other	†[1]	†[2]	0.8	1.4

† Not applicable.

[1] Category not available.

[2] Standard error is not derived because it is based on an estimate of zero percent.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 22. Percent of districts indicating that various factors were preventing them from expanding distance education courses to a moderate or major extent, by district characteristics: 2002–03

District characteristic	Course development and/or purchasing costs	Concerns about course quality	Concerns about receiving funding based on attendance for distance education courses	Limited infrastructure to support distance education	Restrictive federal, state, or local laws or policies	Other[1]
All public school districts	68	37	36	33	17	10
District enrollment size						
Less than 2,500	70	35	37	35	17	10
2,500 to 9,999	60	43	29	27	13	13
10,000 or more	73	48	41	28	21	9
Metropolitan status						
Urban	65	53	54	23	30	9
Suburban	73	41	38	29	18	13
Rural	67	34	34	36	15	9
Region						
Northeast	65	38	20	28	17	14
Southeast	63	34	37	40	16	8
Central	70	40	36	31	18	11
West	71	33	43	35	15	9
Poverty concentration						
Less than 10 percent	70	41	33	31	19	7
10 to 19 percent	65	34	38	26	14	14
20 percent or more	71	36	38	43	17	9

[1] Other responses mentioned included scheduling conflicts, staffing issues, and lack of need.

NOTE: Percentages are based on unrounded numbers. Percentages are based on the estimated 3,960 districts that indicated they were planning to expand distance education courses.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 22-A. Standard errors for the percent of districts indicating that various factors were preventing them from expanding distance education courses to a moderate or major extent, by district characteristics: 2002–03

District characteristic	Course development and/or purchasing costs	Concerns about course quality	Concerns about receiving funding based on attendance for distance education courses	Limited infrastructure to support distance education	Restrictive federal, state, or local laws or policies	Other
All public school districts	2.3	2.3	2.2	2.7	1.9	1.6
District enrollment size						
Less than 2,500	3.0	3.2	2.8	3.4	2.4	1.7
2,500 to 9,999	3.8	4.1	3.0	3.9	3.7	3.5
10,000 or more	4.3	4.3	3.8	3.2	3.3	2.2
Metropolitan status						
Urban	7.7	7.6	6.5	4.1	6.5	3.2
Suburban	2.9	4.0	3.8	3.8	2.5	2.4
Rural	3.2	3.3	3.4	3.5	3.0	2.0
Region						
Northeast	5.4	6.0	6.2	8.7	3.9	4.6
Southeast	4.6	4.8	5.8	5.0	4.1	2.1
Central	3.3	3.6	3.6	4.1	3.3	2.7
West	4.7	4.5	4.5	4.9	4.1	2.7
Poverty concentration						
Less than 10 percent	5.0	4.6	4.5	4.7	3.4	1.9
10 to 19 percent	3.9	3.3	3.8	3.6	2.7	3.3
20 percent or more	3.7	5.0	4.4	5.5	3.7	2.5

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Table 23. Estimates and standard errors for figures 1–4

Item	Estimate	Standard error
Figure 1. Percentage distribution of public schools with students enrolled in distance education courses, by instructional level: 2002–03		
Elementary schools	2	0.5
Middle or junior high schools	7	0.8
High schools	76	1.5
Combined or ungraded schools[1]	15	1.6
Figure 2. Percentage distribution of enrollment in distance education courses of students regularly enrolled in the districts, by instructional level: 2002–03		
Elementary schools	1!	0.5
Middle or junior high schools	2	0.5
High schools	68	6.7
Combined or ungraded schools[1]	29	6.8
Figure 3. Percentage distribution of districts reporting that various technologies were used for the greatest number of distance education courses in which students in their district were enrolled: 2002–03		
Two-way interactive video[2]	49	1.8
Internet courses using asynchronous computer-based instruction[3]	35	1.6
Internet courses using synchronous computer-based instruction[3]	9	1.2
One-way prerecorded video	7	1.0
Other technologies[4]	1	0.5
Figure 4. Percent of districts indicating that various factors were preventing them from expanding distance education courses to a moderate or major extent: 2002–03		
Course development and/or purchasing costs	68	2.3
Concerns about course quality	37	2.3
Concerns about receiving funding based on attendance for distance education courses	36	2.2
Limited infrastructure to support distance education	33	2.7
Restrictive federal, state, or local laws or policies	17	1.9
Other[5]	10	1.6

! Interpret data with caution. The coefficient of variation is greater than 50 percent.

[1] Combined or ungraded schools are those in which the grades offered in the school span both elementary and secondary grades or that are not divided into grade levels.

[2] Two-way interactive video refers to two-way video with two-way audio.

[3] Synchronous refers to simultaneous or "real-time" interaction, whereas asynchronous is defined as not simultaneous.

[4] Other technologies mentioned included teleconferencing, CD-ROM, and other software packages.

[5] Other responses mentioned included scheduling conflicts, staffing issues, and lack of need.

NOTE: Percentages are based on unrounded numbers.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Appendix A

Technical Notes

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Technical Notes

Fast Response Survey System

The Fast Response Survey System (FRSS) was established in 1975 by the National Center for Education Statistics (NCES), U.S. Department of Education. FRSS is designed to collect issue-oriented data within a relatively short timeframe. FRSS collects data from state education agencies, local education agencies, public and private elementary and secondary schools, public school teachers, and public libraries. To ensure minimal burden on respondents, the surveys are generally limited to three pages of questions, with a response burden of about 30 minutes per respondent. Sample sizes are relatively small (usually about 1,000 to 1,500 respondents per survey) so that data collection can be completed quickly. Data are weighted to produce national estimates of the sampled education sector. The sample size permits limited breakouts by classification variables. However, as the number of categories within the classification variables increases, the sample size within categories decreases, which results in larger sampling errors for the breakouts by classification variables.

Sample Design

The sample for the FRSS survey on distance education courses consisted of 2,305 public school districts in the 50 states and the District of Columbia. It was selected from the 2001–02 NCES Common Core of Data (CCD) Local Education Agency Universe file, which was the most current file available at the time of selection. The sampling frame included 14,229 regular public school districts and 989 "other education agencies" with at least one charter school. For the purposes of the study, "regular" school districts included any local school district that was not a component of a supervisory union (i.e., Education Agency type 1 on the CCD), or was a local school district component of a supervisory union sharing a superintendent and administrative services with other local school districts (i.e., Education Agency type 2 on the CCD). Excluded from the sampling frame were districts in the outlying U.S. territories and regular districts with no enrollments.

The school district sampling frame was stratified by district type (regular or charter), enrollment size (less than 1,000, 1,000 to 2,499, 2,500 to 9,999, 10,000 to 99,999, and 100,000 or more), and percentage of children in the district ages 5–17 in families living below the poverty level (less than

10 percent, 10 to 19.99 percent, 20 to 29.99 percent, and 30 percent or more).[1] Districts in the frame were then sorted by type of locale (urban, suburban, rural) and region (Northeast, Southeast, Central, West) to induce additional implicit stratification. These variables are defined in more detail in the Definitions of Analysis Variables section of this report.

Data Collection and Response Rates

Questionnaires and cover letters for the study were mailed to the superintendent of each sampled district in November 2003. The letter introduced the study and requested that the questionnaire be completed by the district's director of curriculum and instruction, the technology coordinator, the distance education coordinator, or another staff member who was most knowledgeable about the district's distance education courses. Respondents were offered the option of completing the survey via the Web or by mail. Telephone follow-up for survey nonresponse and data clarification was initiated in December 2003 and completed at the end of April 2004.

To calculate response rates, NCES uses standard formulas established by the American Association of Public Opinion Research.[2] Thus, unit response rates (RRU) are calculated as the ratio of the weighted number of completed interviews (I) to the weighted number of in-scope sample cases. There are a number of different categories of cases that make up the total number of in-scope cases, including

I = weighted number of completed interviews;
R = weighted number of refused interview cases;
O = weighted number of eligible sample units not responding for reasons other than refusal;
NC = weighted number of noncontacted sample units known to be eligible;
U = weighted number of sample units of unknown eligibility, with no interview; and
e = estimated proportion of sample units of unknown eligibility that are eligible.

[1] Poverty estimates for school districts were based on Title I data provided to the U.S. Department of Education by the Bureau of the Census and contained in U.S. Department of Commerce, Bureau of the Census, Current Population Survey (CPS) "Small Area Income and Poverty Estimates, Title I Eligibility Database, 1999." The No Child Left Behind Act of 2001 directs the Department of Education to distribute Title I basic and concentration grants directly to school districts on the basis of the most recent estimates of children in poverty. For income year 1999, estimates were derived for districts according to their 2001–02 boundaries based on 2000 census data and model-based estimates of poverty for all counties. For detailed information on the methodology used to create these estimates, please refer to www.census.gov/hhes/www/saipe.html.

[2] See American Association for Public Opinion Research (AAPOR), *Standard Definitions: Final Dispositions of Case Codes and Outcome Rates for Surveys* (Ann Arbor, MI: AAPOR, 2000). Note that for this report, there were no sampled units with unknown eligibility.

The unit response rate represents a composite of the components as follows:

$$RRU = \frac{I}{I + R + O + NC + e(U)}$$

Of the 2,305 districts in the sample, 10 were found to be ineligible for the survey because they no longer existed. Another three were found to be ineligible because they did not meet some other criteria for inclusion in the sample (e.g., the district was composed of only one school, which was a charter school that offered only prekindergarten classes, and thus was ineligible for the sample). This left a total of 2,292 eligible districts in the sample. Completed questionnaires were received from 2,158 districts, or 94 percent of the eligible districts[3] (table A-1). The weighted response rate was 96 percent. The weighted number of eligible districts in the survey represent the estimated universe of public school districts in the 50 states and the District of Columbia. The estimated number of districts in the survey universe decreased from the 15,218 districts in the sampling frame to an estimated 15,040 because some of the districts were determined to be ineligible for the FRSS survey during data collection.

[3] Approximately 40 percent of surveys were completed via mail, 29 percent via the Web, 13 percent via phone, and 12 percent via fax.

Table A-1. Number and percent of public school districts in the study, and the estimated number and percent in the nation, for the total sample and for districts with students regularly enrolled in distance education courses in 2002–03, by district characteristics: 2003

District characteristic	Total sample				Districts with students regularly enrolled in distance education courses in 2002–03			
	Respondents (unweighted)		National estimate (weighted)		Respondents (unweighted)		National estimate (weighted)	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All public school districts	2,158	100	15,040	100	812	100	5,480	100
District enrollment size								
Less than 2,500	1,039	48	11,080	74	381	47	4,060	74
2,500 to 9,999	722	34	3,100	21	232	29	1,010	18
10,000 or more	394	18	820	5	199	25	410	7
Metropolitan status								
Urban	282	13	1,220	8	99	12	280	5
Suburban	1,052	49	6,150	41	337	42	1,700	31
Rural	824	38	7,660	51	376	46	3,500	64
Region								
Northeast	459	21	3,040	20	108	13	640	12
Southeast	355	16	1,750	12	182	22	790	14
Central	700	32	5,390	36	297	37	2,500	46
West	644	30	4,850	32	225	28	1,540	28
Poverty concentration								
Less than 10 percent	751	37	4,850	35	249	31	1,620	30
10 to 19 percent	776	38	5,330	38	331	41	2,220	41
20 percent or more	519	25	3,690	27	222	28	1,560	29

NOTE: For the FRSS study sample, there were 3 cases for which district enrollment size was missing and 112 cases for which poverty concentration was missing. Detail may not sum to totals because of rounding or missing data.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Imputation for Item Nonresponse

Although item nonresponse was very low, data were imputed for all missing questionnaire data. These 29 items are listed in table A-2. The missing items included both numerical data, such as counts of enrollments in distance education courses, and categorical data, such as which technologies were used as primary modes of instructional delivery for distance education courses. The missing data were imputed using a "hot-deck" approach to obtain a "donor" district from which the imputed values were derived. Under the hot-deck approach, a donor district that matched selected characteristics of the district with missing data (the recipient district) was identified. The matching characteristics included district type, region, metropolitan status, district enrollment size class, and poverty concentration. Once a donor was found, it was used to derive the imputed values for the district with missing data. For categorical items, the imputed value was simply the corresponding value from the donor district. For numerical items, the imputed value was calculated by taking the donor's response for that item (e.g., number of distance education course enrollments) and dividing that number by the total number of students enrolled in the donor district. This ratio was then multiplied by the total number of students enrolled in the recipient district to provide an imputed value. All missing items for a given district were imputed from the same donor whenever possible.

Data Reliability

While the "Distance Education Courses for Public Elementary and Secondary School Students" survey was designed to account for sampling error and to minimize nonsampling error, estimates produced from the data collected are subject to both types of error. Sampling error occurs because the data are collected from a sample rather than a census of the population, and nonsampling errors are errors made during the collection and processing of the data.

Table A-2. Number of cases with imputed data in the study sample, and number of cases with imputed data the sample represents, by questionnaire items: 2003

Questionnaire item		Respondent sample (unweighted)	National estimate (weighted)
Q4A	Total number of distance education course enrollments	3	14
Q4B	Number of distance education course enrollments in elementary schools	2	9
Q4C	Number of distance education course enrollments in middle or junior high schools	4	18
Q4D	Number of distance education course enrollments in high schools	5	23
Q4E	Number of distance education course enrollments in combined or ungraded schools	2	6
Q5A	General elementary school curriculum	2	9
Q5B	English/language arts	5	25
Q5C	Social studies/social sciences (including history)	5	25
Q5D	Computer science	5	25
Q5E	Natural/physical science (e.g., biology, chemistry, physics)	5	25
Q5F	Mathematics	5	25
Q5G	Foreign languages	5	25
Q5H	Other (specify)	1	1
Q5I	Total number of enrollments across curriculum areas	4	21
Q6	Whether any students regularly enrolled in the district were enrolled in Advanced Placement or college-level courses offered through distance education	1	2
Q6ENRL	Number of enrollments	5	20
Q7A	Internet courses using synchronous (i.e., simultaneous or "real-time") computer-based instruction	2	9
Q7B	Internet courses using asynchronous (i.e., not simultaneous) computer-based instruction	2	9
Q7C	Two-way interactive video (i.e., two-way video with two-way audio)	1	4
Q7D	One-way prerecorded video (including prerecorded videos provided to students, and television broadcast and cable transmission using prerecorded videos)	2	9
Q8	Which one of the technologies was used for the greatest number of distance education courses	1	4
Q13A	Provide computer	2	6
Q13B	Provide Internet service provider	2	6
Q13C	Provide other *(specify)*	1	4
Q14	Whether the district delivered any distance education courses to students who were not regularly enrolled in the district	1	1
Q16A	Course development and/or purchasing costs	1	7
Q16B	Limited technological infrastructure to support distance education	1	7
Q16D	Restrictive federal, state, or local laws or policies	3	15
Q16E	Concerns about receiving funding based on student attendance for distance education courses	1	15

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public School Elementary and Secondary School Students: 2002–03," FRSS 84, 2003.

Sampling Errors

The responses were weighted to produce national estimates (see table A-1). The weights were designed to adjust for the variable probabilities of selection and differential nonresponse. The findings in this report are estimates based on the sample selected and, consequently, are subject to sampling variability. General sampling theory was used to estimate the sampling variability of the estimates and to test for statistically significant differences between estimates.

The standard error is a measure of the variability of an estimate due to sampling. It indicates the variability of a sample estimate that would be obtained from all possible samples of a given design and size. Standard errors are used as a measure of the precision expected from a particular sample. If all possible samples were surveyed under similar conditions, intervals of 1.96 standard errors below to 1.96 standard errors above a particular statistic would include the true population parameter being estimated in about 95 percent of the samples. This is a 95 percent confidence interval. For example, the estimated percentage of public school districts with students regularly enrolled in distance education courses is 36.4 percent and the standard error is 1.2 percent (see tables 1 and 1-A). The 95 percent confidence interval for the statistic extends from [36.4—(1.2 x 1.96)] to [36.4 + (1.2 x 1.96)], or from 34.0 to 38.8 percent. The 1.96 is the *critical value* for a statistical test at the 0.05 significance level (where 0.05 indicates the 5 percent of all possible samples that would be outside the range of the confidence interval).

Because the data from the FRSS distance education courses survey were collected using a complex sampling design, the variances of the estimates from this survey (e.g., estimates of proportions) are typically different from what would be expected from data collected with a simple random sample. Not taking the complex sample design into account can lead to an underestimation of the standard errors associated with such estimates. To generate accurate standard errors for the estimates in this report, standard errors were computed using a technique known as jackknife replication. As with any replication method, jackknife replication involves constructing a number of subsamples (replicates) from the full sample and computing the statistic of interest for each replicate. The mean square error of the replicate estimates around the full sample estimate provides an estimate of the variance of the statistic. To construct the replications, 50 stratified subsamples of the full sample were created and then dropped 1 at a time to define 50 jackknife replicates. A computer program (WesVar) was used to calculate the estimates of standard errors. WesVar is a stand-alone Windows application that computes sampling errors from complex samples for a wide variety of statistics (totals, percents, ratios, log-odds ratios, general functions of estimates in tables, linear regression parameters, and logistic regression parameters).

Where appropriate, estimates with a coefficient of variation (CV) greater than 50 percent have been noted. The CV is a ratio of the standard error to the estimate, multiplied by 100 to obtain a percent. The CV is used to compare the variability of two or more estimates, where higher CV values indicate greater variability and lower CV values indicate less variability.

Nonsampling Errors

Nonsampling error is the term used to describe variations in the estimates that may be caused by population coverage limitations and data collection, processing, and reporting procedures. The sources of nonsampling errors are typically problems like unit and item nonresponse,[4] differences in respondents' interpretations of the meaning of questions, response differences related to the particular time the survey was conducted, and mistakes made during data preparation. It is difficult to identify and estimate either the amount of nonsampling error or the bias caused by this error. To minimize the potential for nonsampling error, this study used a variety of procedures, including a pretest of the questionnaire with directors of curriculum and instruction or other people at the district who were deemed to be the most knowledgeable about the district's distance education courses. The pretest provided the opportunity to check for consistency of interpretation of questions and definitions and to eliminate ambiguous items. The questionnaire and instructions were also extensively reviewed by NCES and the data requester at the Office of Educational Technology. In addition, manual and machine editing of the questionnaire responses was conducted to check the data for accuracy and consistency. Cases with missing or inconsistent items were recontacted by telephone to resolve problems. Data were keyed with 100 percent verification for surveys received by mail, fax, or telephone.

Definitions of Analysis Variables

District Enrollment Size—This variable indicates the total number of students enrolled in the district based on data from the 2001–02 CCD. Data on this variable were missing for three districts; districts with missing data were excluded from all analyses involving district enrollment size. The variable was collapsed into the following three categories:

Less than 2,500 students
2,500 to 9,999 students
10,000 or more students

[4] Unit nonresponse typically refers to situations in which the survey was not completed by the respondent. Item nonresponse occurs when an item on the survey is blank or incomplete.

Metropolitan Status—This variable indicates the type of community in which the district is located, as defined in the 2001–02 CCD (which uses definitions based on U.S. Census Bureau classifications). Metropolitan status is the classification of an education agency's service area relative to a Metropolitan Statistical Area (MSA). An MSA is an area consisting of one or more contiguous counties (cities and towns in New England) that contain a core area with a large population nucleus, as well as adjacent communities having a high degree of economic and social integration with that core. An area is defined as an MSA if it is the only MSA in the immediate area and has a city of at least 50,000 population or it is an urbanized area of at least 50,000 with a total metropolitan population of at least 100,000 (75,000 in New England). The categories are described in more detail below.

Urban—Primarily serves a central city of an MSA

Suburban—Serves an MSA but not primarily its central city

Rural—Does not serve an MSA

Region—This variable classifies districts into one of the four geographic regions used by the Bureau of Economic Analysis of the U.S. Department of Commerce, the National Assessment of Educational Progress, and the National Education Association. Data were obtained from the 2001–02 CCD Local Education Agency Universe file. The geographic regions are

Northeast—Connecticut, Delaware, District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont

Southeast—Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia

Central—Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin

West—Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oklahoma, Oregon, Texas, Utah, Washington, and Wyoming

Poverty Concentration—This variable indicates the percentage of children in the district ages 5–17 in families living below the poverty level, based on the Title I data provided to the U.S. Department of Education by the Bureau of the Census. Data on this variable were missing for 112 districts; districts with missing data were excluded from all analyses involving poverty concentration. The variable was collapsed into the following three categories:

Less than 10 percent
10 to 19 percent
20 percent or more

Contact Information

For more information about the survey, contact Bernard Greene, Early Childhood, International, and Crosscutting Studies Division, National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education, 1990 K Street NW, Washington, DC 20006; e-mail: Bernard.Greene@ed.gov; telephone (202) 502–7348.

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Appendix B

Questionnaire

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U.S. DEPARTMENT OF EDUCATION NATIONAL CENTER FOR EDUCATION STATISTICS WASHINGTON, D.C. 20006–5651 **DISTANCE EDUCATION COURSES FOR PUBLIC ELEMENTARY AND SECONDARY SCHOOL STUDENTS: 2002–03** FAST RESPONSE SURVEY SYSTEM	O.M.B. APPROVED No.: 1850–0733

This survey is authorized by law (P.L. 103–382). While participation in this survey is voluntary, your cooperation is critical to make the results of this survey comprehensive, accurate, and timely.

- **Distance education courses are credit-granting courses offered to elementary and secondary school students enrolled in your district in which the teacher and students are in different locations. These courses:**
  - may originate from your district or from other entities (e.g., a state virtual school or a postsecondary institution).
  - can be delivered via audio, video (live or prerecorded), or Internet or other computer technologies, including both synchronous (i.e., simultaneous or "real time") and asynchronous (i.e., not simultaneous) instruction.
  - may include occasional face-to-face interactions between the teacher and the students. For example, a teacher teaching a course at several schools via video-conferencing may rotate between schools, or the teacher and students may be in the same location for occasional lab work or tests.
- **Include information about distance education Advanced Placement or college-level courses in which students in your district were enrolled.**
- **For purposes of this survey, do *not* include information about:**
  - supplemental course materials, virtual field trips, online homework, or staff professional development.
  - courses conducted mainly via written correspondence.
- **Include information for all schools administered by your district (e.g., regular schools, charter schools, magnet schools, alternative schools, special education schools, etc.).**
- **The time frame for this survey is the 12-month 2002–03 school year.** This includes distance education courses during the summer of 2002 or the summer of 2003, depending on how records are kept at your district.

Information Copy - Do Not Complete

IF ABOVE INFORMATION IS INCORRECT, PLEASE MAKE CORRECTIONS DIRECTLY ON LABEL.

Name of person completing form:_____ Telephone:_____

Title/position:_____ E-mail:_____

Best days and times to reach you (in case of questions):_____

THANK YOU. PLEASE KEEP A COPY OF THIS SURVEY FOR YOUR RECORDS.

PLEASE RETURN COMPLETED FORM TO:	IF YOU HAVE ANY QUESTIONS, CONTACT:
Anne Kleiner (7166.29) Westat 1650 Research Boulevard Rockville, Maryland 20850-3195	Anne Kleiner at Westat 800-937-8281, Ext. 2710 or 240-453-2710 Fax: 800-254-0984 E-mail: annekleiner@westat.com

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 1850–0733. The time required to complete this information collection is estimated to average 30 minutes per response, including the time to review instructions, search existing data resources, gather the data needed, and complete and review the information collection. If you have any comments concerning the accuracy of the time estimate or suggestions for improving this form, please write to: U.S. Department of Education, Washington, DC 20202–4651. If you have any comments or concerns regarding the status of your individual submission of this form, write directly to: National Center for Education Statistics, 1990 K Street, NW, Washington, DC 20006.

FRSS Form No. 84 11/2003

Before you answer the questions, please carefully read the instructions and definitions on the front of this questionnaire.

1. In 2002–03 (12-month school year), how many schools were in your district? *Please include all schools administered by your district (e.g., regular schools, charter schools, magnet schools, alternative schools, special education schools, etc.). Enter "0" if there were no schools in your district at that instructional level in 2002–03.*

   a. Total number of schools..... _____

   b. Number of elementary schools..... _____

   c. Number of middle or junior high schools..... _____

   d. Number of high schools..... _____

   e. Number of combined or ungraded schools ..... _____

- *The number of enrollments may include duplicated counts of students; i.e., a student should be counted for each course in which he/she was enrolled.*
- *Report only about distance education enrollments of students regularly enrolled in your district.*
- *Take into account any distance education courses in which students in your district were enrolled, regardless of where the courses originated (i.e., from your district or another entity).*
- *Include enrollments in distance education Advanced Placement or college-level courses in which students in your district were enrolled.*
- *Consider only credit-granting courses. Do not take into account supplemental course materials, virtual field trips, online homework, staff professional development, or courses conducted mainly via written correspondence.*

2. In 2002–03 (12-month school year), were any public elementary or secondary school students in your district enrolled in distance education courses **(as defined on the front of this questionnaire and in the box above)**?

   Yes..... 1 *(Continue with question 3.)* No ..... 2 *(Stop. Complete respondent section on front and return questionnaire.)*

3. Of the schools reported in question 1, how many had **at least one** student enrolled in distance education courses in 2002–03 (12-month school year)? *See box above for instructions. Enter "0" if there were no schools with students enrolled in distance education courses in your district at that instructional level in 2002–03.*

   a. Total number of schools with students enrolled in distance education courses ..... _____

   b. Number of elementary schools with students enrolled in distance education courses..... _____

   c. Number of middle or junior high schools with students enrolled in distance education courses ..... _____

   d. Number of high schools with students enrolled in distance education courses..... _____

   e. Number of combined or ungraded schools with students enrolled in distance education courses ..... _____

4. For 2002–03 (12-month school year), report the number of **enrollments** in distance education courses of students regularly enrolled in your district. *See box above for instructions. Enter "0" if there were no students in your district enrolled in distance education courses at that instructional level in 2002–03.*

   a. Total number of distance education course enrollments ..... _____

   b. Number of distance education course enrollments in elementary schools..... _____

   c. Number of distance education course enrollments in middle or junior high schools ..... _____

   d. Number of distance education course enrollments in high schools..... _____

   e. Number of distance education course enrollments in combined or ungraded schools..... _____

Information Copy - Do Not Complete

5. For 2002–03 (12-month school year), report the number of **enrollments** in distance education courses by curriculum area of students who were regularly enrolled in your district. *See box on previous page for instructions. Enter "0" if there were no students in your district enrolled in distance education courses in that curriculum area in 2002–03.*

a. General elementary school curriculum ..... _____
b. English/language arts ..... _____
c. Social studies/social sciences (including history) ..... _____
d. Computer science ..... _____
e. Natural/physical science (e.g., biology, chemistry, physics) ..... _____
f. Mathematics ..... _____
g. Foreign languages ..... _____
h. Other *(specify)*_____ _____
i. Total number of enrollments across curriculum areas (***Total should equal total in question 4a.)*** ..... _____

6. In 2002–03 (12-month school year), were any students regularly enrolled in your district enrolled in Advanced Placement or college-level courses offered through distance education? *See box on previous page for instructions.*

Yes ..... 1 **(Number of enrollments:_____)** No 2

7. In 2002–03 (12-month school year), which technologies were used as **primary** modes of instructional delivery for **any** distance education courses in which students in your district were enrolled? *(Circle one on each line.)*

- *If a course used multiple technologies to deliver instruction, but one mode predominated, circle yes for the predominant mode for the course.*
- *Please take into account any distance education courses in which students in your district were enrolled, regardless of where the courses originated.*
- *Do not consider technologies used for supplemental course materials or professional development.*

	Yes	No
a. Internet courses using synchronous (i.e., simultaneous or "real time") computer-based instruction (e.g., interactive computer conferencing)	1	2
b. Internet courses using asynchronous (i.e., not simultaneous) computer-based instruction	1	2
c. Two-way interactive video (i.e., two-way video with two-way audio)	1	2
d. One-way prerecorded video (including prerecorded videos provided to students, and television broadcast and cable transmission using prerecorded videos)	1	2
e. Other technologies *(specify)*_____	1	2

8. In 2002–03 (12-month school year), which **one** of the technologies listed in question 7 was used **for the greatest number** of distance education courses in which students in your district were enrolled? (*Circle the letter corresponding to the technology listed in question 7.* ***Circle only one****.)*

a b c d e

9. How important were the following reasons for having distance education courses in your district in 2002–03 (12-month school year)? *Please take into account any distance education courses in which students in your district were enrolled, regardless of where the courses originated. (Circle one on each line.)*

	Not important	Somewhat important	Very important	Don't know
a. Offering courses not otherwise available at the school	1	2	3	4
b. Offering Advanced Placement or college-level courses	1	2	3	4
c. Addressing growing populations and limited space	1	2	3	4
d. Reducing scheduling conflicts for students	1	2	3	4
e. Permitting students who failed a course to take it again	1	2	3	4
f. Meeting the needs of specific groups of students	1	2	3	4
g. Generating more district revenues	1	2	3	4
h. Other *(specify)*_____	—	2	3	—

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10. In 2002–03 (12-month school year), which of the following entities **delivered** the distance education courses in which students in your district were enrolled? *(Circle one on each line.)*

		Yes	No	Don't know
a.	Cyber (i.e., online) charter school in your district	1	2	3
b.	Other schools in your district	1	2	3
c.	Your district (i.e., delivered centrally from the district)	1	2	3
d.	Another local school district, or schools in another district, in your state	1	2	3
e.	Education service agencies within your state (e.g., BOCES, COE, IU), not including the state education agency or local school districts	1	2	3
f.	State virtual school in your state (i.e., state-centralized K-12 courses available through Internet- or web-based methods)	1	2	3
g.	State virtual school in another state	1	2	3
h.	Districts or schools in other states (other than state virtual schools)	1	2	3
i.	Postsecondary institution	1	2	3
j.	Independent vendor	1	2	3
k.	Other *(specify)*_____	1	2	3

11. In 2002–03 (12-month school year), were any students in your district enrolled in **online** distance education courses (i.e., courses delivered over the Internet)?

Yes ..... 1 *(Continue with question 12.)* No ..... 2 *(Skip to question 14.)*

12. In 2002–03 (12-month school year), where were students in your district accessing **online** distance education courses? *Please take into account any online distance education courses in which students in your district were enrolled, regardless of where the courses originated. (Circle one on each line.)*

		Yes	No
a.	At school	1	2
b.	At home	1	2
c.	At some other location (*specify*)_____	1	2

13. In 2002–03 (12-month school year), did your district **provide or pay** for the following items for students accessing online distance education courses from home? *(Circle one on each line.)*

If no online distance education courses were accessed at home, check here ☐ *and skip to question 14.*

		Yes, for all students	Yes, for some students	No
a.	Computer	1	2	3
b.	Internet service provider	1	2	3
c.	Other *(specify)*_____	1	2	3

14. In 2002–03 (12-month school year), did your district (or schools in your district) deliver any distance education courses to students who were **not** regularly enrolled in your district (e.g., to students from other districts, private school students, or home-schooled students)?

Yes ..... 1 No ..... 2 Don't know 3

15. Does your district plan to expand distance education courses?

Yes ..... 1 *(Continue with question 16.)* No ..... 2 *(Stop. Complete respondent section on front and return questionnaire.)*

16. To what extent are the following factors keeping your district (or schools in your district) from **expanding** distance education courses? *(Circle one on each line.)*

		Not at all	Minor extent	Moderate extent	Major extent
a.	Course development and/or purchasing costs	1	2	3	4
b.	Limited technological infrastructure to support distance education	1	2	3	4
c.	Concerns about course quality	1	2	3	4
d.	Restrictive federal, state, or local laws or policies	1	2	3	4
e.	Concerns about receiving funding based on student attendance for distance education courses	1	2	3	4
f.	Other *(specify)*_____	—	2	3	4

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