

Technology-Based Distance Education Courses for Public Elementary and Secondary Schools: 2002-03 and 2004-05

Statistical Analysis Report



Technology-Based Distance Education Courses for Public Elementary and Secondary School Students: 2002–03 and 2004–05

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Fast Response Survey System

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Executive Summary

Distance education in elementary and secondary grades, defined as credit-granting courses offered to elementary and secondary school students enrolled in the district in which the teacher and student were in different locations, has become an important element of the contemporary educational landscape. Distance education offers a way to help schools and school districts deal with overcrowding, student demand for Advanced Placement (AP) and college-level courses, and individualized schedules. Online distance education, that is, distance education courses delivered via the Internet, is considered by some policymakers as a way of helping schools and school districts address these challenges. A need for data on the prevalence, provision, and delivery of distance education in the nation called for a systematic study of this phenomenon.

This report is based on a survey of public school districts conducted by the National Center for Education Statistics (NCES), Institute of Education Sciences, U.S. Department of Education, using the Fast Response Survey System (FRSS). The report presents national estimates of the prevalence and characteristics of technology-based distance education courses in public schools nationwide in school year 2004–05. The report also compares those data with the baseline data that were collected in an earlier survey for 2002–03¹ and provides longitudinal analysis of change in the districts that responded in both 2002–03 and 2004–05 surveys. For the purpose of 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 student were in different locations. These courses could be delivered via audio, video (live or prerecorded), or Internet or other computer technologies. Distance education courses could originate from the respondent’s district or from other entities, such as a state virtual school or postsecondary institution. Online distance education courses were defined as Internet courses using synchronous (i.e., simultaneous) computer-based instruction and Internet courses using asynchronous (i.e., not simultaneous) computer-based instruction.

¹The sample for the FRSS survey in 2004–05 consisted of 2,312 public school districts in the 50 states and the District of Columbia. The weighted response rate was 95.6 percent. The sample for the FRSS survey in 2002–03 consisted of 2,305 public school districts in the 50 states and the District of Columbia. The weighted response rate was 96.0 percent.

Technology-Based Distance Education Courses for Public School Students

During 2004–05, about one-third (37 percent) of public school districts had students enrolled in technology-based distance education courses (table 1). No change was observed in the percentage of districts with students enrolled in technology-based distance education between the 2002–03 and 2004–05 school years.²

Ten percent of all public schools nationwide had students enrolled in technology-based distance education courses during 2004–05, an increase from 9 percent in 2002–03 (table 2). Technology-based distance education was more commonly offered by high schools than by schools at any other instructional level: 39 percent of public high schools offered technology-based distance education courses in 2004–05, compared to 20 percent of combined or ungraded schools, 5 percent of middle or junior high schools, and 1 percent of elementary schools. Among all public schools with students enrolled in technology-based distance education, 72 percent were high schools (table 3).

Enrollments in Technology-Based Distance Education Courses

In 2004–05, there were an estimated 506,950 technology-based distance education course enrollments in public school districts (table 4). 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, course enrollments may include duplicated counts of students. Of this total number of technology-based distance education course enrollments, 61 percent were in high schools, 33 percent were in combined or ungraded schools, 3 percent were in middle or junior high schools, and 2 percent were in elementary schools (table 5). Between 2002–03 and 2004–05, the number of enrollments in technology-based distance education courses increased by 60 percent overall, from an estimated 317,070 enrollments in 2002–03 to 506,950 enrollments in 2004–05 (table 4).

The number of enrollments in technology-based distance education courses in 2004–05 varied considerably among districts, although most districts reported small numbers of distance education course enrollments. Twenty-four percent of districts reported between 1 and 5 technology-based distance

²Significance tests used in this report are based on general sampling theory. The 1.96 critical value was used for the *t*-tests at the 0.05 significance level.

education course enrollments, 13 percent reported 6 to 10 course enrollments, 20 percent reported 11 to 20 course enrollments, 24 percent reported 21 to 50 course enrollments, 9 percent reported 51 to 100 course enrollments, and 9 percent reported more than 100 course enrollments in technology-based distance education (table 6). Seventy-one percent of districts with students enrolled in technology-based distance education courses in 2004–05 planned to expand their distance education courses in the future (table 8).

Entities Delivering Technology-Based Distance Education Courses

Postsecondary institutions were the leading providers of technology-based distance education courses in 2004–05. About half (47 percent) of districts with technology-based distance education enrollments had students in distance education courses delivered by a postsecondary institution (table 9). A third (33 percent) of districts with students in technology-based distance education had courses delivered by another local school district or schools in other districts in their state, 24 percent had students enrolled in distance education courses delivered by a state virtual school in their state, and 21 percent had students enrolled in courses delivered centrally from their district. About one-fifth (21 percent) of districts offering technology-based distance education courses delivered them to students who were not regularly enrolled in the district (table 11).

Among districts with students in technology-based distance education courses, there was an increase between 2002–03 and 2004–05 in the percentage of districts that had those courses delivered to their students centrally from their district (16 percent of districts in 2002–03 compared to 21 percent in 2004–05) (table 9). The percentage of districts with technology-based distance education that had courses delivered by state virtual schools within their state also increased over this period, from 18 percent in 2002–03 to 24 percent in 2004–05. No change took place in the percentage of districts offering technology-based distance education courses that delivered them to students not regularly enrolled in the district.

Advanced Placement and Dual Credit College-Level Courses Offered Through Technology-Based Distance Education

Twenty-five percent of districts with students enrolled in technology-based distance education had students enrolled in Advanced Placement (AP) courses offered through distance education (table 12), while 40 percent of districts with technology-based distance education had students enrolled in dual credit college-level courses offered through distance education (table 14). Thirty-six percent of districts with students in AP courses delivered through technology-based distance education had those courses delivered by a postsecondary institution, 36 percent by a public school or district, and 35 percent by a state virtual school (table 13). Ninety-two percent of districts with students enrolled in dual credit college-level courses delivered through technology-based distance education received those courses from postsecondary institutions, while 25 percent had these college-level courses delivered by a public school or school district (table 15).

The combined enrollments in AP and dual credit college-level technology-based distance education courses accounted for 14 percent of all technology-based distance education enrollments in 2002–03, and 15 percent of all technology-based distance education enrollments in 2004–05 (table 16).

Technologies Used for Delivering Distance Education Courses

The survey explored technologies used as primary modes of instructional delivery for any distance education courses and for the greatest number of distance education courses in which students were enrolled. Technologies included Internet courses using synchronous (“real-time”) computer-based instruction, Internet courses using asynchronous (not simultaneous) computer-based instruction, two-way interactive video, one-way prerecorded video, and other technologies.

In 2004–05, the technology most frequently used as a primary mode of delivery for any distance education courses was asynchronous Internet instruction (reported by 58 percent of districts with technology-based distance education enrollments), followed by two-way interactive video (reported by 47 percent of districts with technology-based distance education enrollments) (table 17). Between 2002–03 and 2004–05, the use of Internet technologies employing asynchronous instruction as a primary mode of delivery increased by 11 percentage points, from 47 percent of districts to 58 percent of districts with technology-based distance education, making it the technology most commonly used for delivering any

distance education courses in 2004–05. At the same time, a decrease took place in the use of two-way interactive video, which was the most commonly used technology in 2002–03 for delivery of any distance education courses, from 55 percent of districts with technology-based distance education in 2002–03 to 47 percent of such districts in 2004–05.

In 2004–05, two-way interactive video and asynchronous Internet-based technologies were listed as the primary modes of instructional delivery for the greatest number of technology-based distance education courses, with 41 percent of districts with technology-based distance education reporting two-way interactive video and 40 percent of such districts reporting asynchronous Internet technologies (table 18). Between 2002–03 and 2004–05, the use of two-way interactive video as the primary mode of delivery for the greatest number of distance education courses decreased by 8 percentage points, from 49 percent to 41 percent, and the use of asynchronous Internet technologies increased by 6 percentage points, from 34 percent to 40 percent of districts with technology-based distance education.

Online Distance Education Courses

Seventy-one percent of districts with students enrolled in technology-based distance education courses in 2004–05 had students enrolled in online distance education courses (table 19). Between 2002–03 and 2004–05, the percentage of districts with technology-based distance education courses that had students enrolled in online courses increased by 13 percentage points, from 58 percent to 71 percent.

In 2004–05, among the districts with students in online distance education courses, 86 percent had students accessing those courses from school, 59 percent had students accessing online courses from home, and 8 percent had students accessing online courses from some other location (table 19).

Among the districts with students accessing online distance education from home, 19 percent provided or paid for a computer for all students who were doing so, 18 percent of those districts paid for the Internet service provider for all of those students, and 8 percent provided or paid for some other item for all those students, such as software or phone service for dial-up Internet services (table 20). Additionally, 10 percent of those districts provided or paid for a computer for some students who were accessing online courses at home, 9 percent paid for the Internet service provider for some students who were doing so, and 2 percent provided or paid for some other item for some of those students.

Longitudinal Analysis of Change: 2002–03 to 2004–05

About a quarter (26 percent) of school districts that existed in both 2002–03 and 2004–05 had students enrolled in technology-based distance education in both school years, while about half (52 percent) of the districts did not have students enrolled in technology-based distance education in either year (table 21). Eleven percent of the districts did not have students enrolled in technology-based distance education courses in 2002–03 but did have such enrollments in 2004–05, and an equal percentage of districts (11 percent) had students enrolled in distance education courses in 2002–03 but not in 2004–05.

The analysis of change in the number of enrollments in technology-based distance education courses was based on the estimated 7,020 districts that reported having technology-based distance education enrollments in 2002–03 or 2004–05, or both, and excluded districts that did not have technology-based distance education enrollments in either of the years under study. Thirty-five percent of districts that did not have technology-based distance education enrollments in 2002–03 reported 1 to 5 such enrollments in 2004–05, while 14 percent of those districts reported 6 to 10 enrollments (table 22). Five percent of districts without any technology-based distance education enrollments in 2002–03 had more than 100 such enrollments in 2004–05. About a third of districts with large numbers of technology-based distance education enrollments in 2002–03 tended to maintain the same level of such enrollments in 2004–05, with 34 percent of districts with 21 to 50 technology-based distance education enrollments in 2002–03 also reporting 21 to 50 such enrollments in 2004–05, and 32 percent of districts with 51 to 100 such enrollments in technology-based distance education courses in 2002–03 also reporting 51 to 100 such enrollments in the year 2004–05. Sixty-three percent of districts with more than 100 technology-based distance education enrollments in 2002–03 reported having more than 100 such enrollments in 2004–05, and 9 percent of those districts no longer had any technology-based distance education in 2004–05.

Analysis of the longitudinal data for districts with technology-based distance education in both school years revealed that the majority of districts did not change their most frequently used technology between the years. Seventy percent of the districts that used asynchronous Internet technologies for the greatest number of distance education courses in 2002–03 continued using this technology as their primary mode for the greatest number of distance education courses in 2004–05 (table 23). Eighty-two percent of the districts that used two-way interactive video for the greatest number of distance education courses in 2002–03 continued using this technology for the greatest number of distance education courses in 2004–05.

Conclusions

Findings from the 2002–03 and 2004–05 surveys suggest that technology-based distance education has established its presence in the nation’s public schools. Rapid technological developments and widespread availability of the Internet in public schools has made online education increasingly accessible and common among schools and districts. However, more traditional video-based technologies remain widely used as well. Also, although postsecondary institutions are the leading providers of technology-based distance education to public school districts and schools, districts themselves increasingly provide technology-based distance education courses to students, as well as increasingly use distance education courses provided by their state virtual schools.

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1. Introduction

This report presents survey data collected by the National Center for Education Statistics (NCES) about technology-based distance education courses in public school districts nationwide. 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. The following specific research questions are addressed in this report:

- What percentage of public school districts have students enrolled in technology-based distance education courses?
- What percentage of public schools have students enrolled in technology-based distance education courses, and does the percentage differ by instructional level?
- What is the number of technology-based distance education enrollments in public schools, and does the number differ by instructional level?
- What is the completion status of technology-based distance education enrollments in public schools?
- Do districts with students enrolled in technology-based distance education courses plan to expand their technology-based distance education courses?
- What entities deliver technology-based distance education courses to public school students?
- To what extent do districts use technology-based distance education to offer Advanced Placement (AP) and college-level courses to their students?
- What technologies are used to deliver technology-based distance education courses?
- Where do students access online distance education courses, and do districts provide financial or other infrastructure support to students to facilitate their access to online courses from home?
- Do the data differ by district enrollment size, metropolitan status, region, or poverty concentration?
- How have the findings for 2004–05 changed from the baseline data collected for 2002–03?

Data from two NCES surveys, requested by the Office of Educational Technology (OET) in the U.S. Department of Education, are presented in this report. These surveys, “Distance Education Courses for Public School Elementary and Secondary Students: 2002–03,” and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” were both conducted by NCES using the Fast Response Survey System (FRSS). Findings from the first survey were presented in a previous NCES report (Setzer and Lewis 2005). The current report provides full statistical analysis of the data from the 2004–05 survey, compares those data with the baseline data from 2002–03, and provides longitudinal analysis of change in the districts that responded to both the 2002–03 and 2004–05 surveys. See appendix A for a more detailed discussion of the comparisons between the 2002–03 and 2004–05 surveys.

The remainder of this introductory section presents background information and a brief review of the literature on technology-based distance education in elementary and secondary schools, followed by a description of the study methodology and an overview of the organization of this report.

Background

Distance education is defined in the literature as the provision of educational materials, content, and instruction from teachers to students who are in different locations (as discussed in Arafah 2004, pp. 9–10). It may encompass various forms of course delivery, from written correspondence to prerecorded video to real-time online technologies. 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). As a highly proliferated nontraditional method of instructional delivery at the postsecondary level, technology-based distance education has been at the center of considerable attention and debate.

The provision of technology-based distance education courses in public elementary and secondary schools is of increasing interest to both policymakers and school districts, as educators struggle to meet the challenges of overcrowded schools, student demand for courses, and delivery of advanced courses to students in rural settings (McDermon 2005–06; U.S. Department of Education 2004; Southwick 2003). Discussion on the proliferation of distance education is frequently seen in the media, including publications such as *Education Week*, *eSchool News*, the *New York Times*, and others (e.g., Cavanaugh 2006; Dillon 2006; *eSchool News* 2006).

There are some anecdotal reports that technology-based distance education at the elementary and secondary levels enables school districts to expand the range of courses available to their students, such as courses in advanced mathematics and science, foreign languages, or other core and noncore subjects, and may facilitate more flexibility in student schedules and instructional delivery (Thomas 1999; Yamashiro and Zucker 1999; Clark 2001, 2003; Wildavsky 2001; Doherty 2002; Kennedy-Manzo 2002; Trotter 2002; Cavanaugh 2006). Some accounts suggest that students also choose distance education courses to pass required courses that they have failed or that they need to take to fulfill state graduation requirements (Cavanaugh 2006). Media and industry reports indicate that courses preparing students for SAT tests and AP courses have also been an important part of the distance education course offering in high school settings in particular (Interactive Educational Systems Design 2002; Borja 2007; Miller 2007). The use of distance education makes it possible for schools to offer more AP courses to their students, thereby accommodating individual schedules and catering to individual interests. A recent report from the Sloan Foundation, based on a study of public school districts, indicates that perceived importance by districts of online learning mostly relates to (in the order of importance) 1) offering courses not otherwise available at the school, 2) meeting the needs of specific groups of students, 3) offering AP or college-level courses, 4) reducing scheduling conflicts for students, and 5) permitting students to retake courses they failed (Picciano and Seaman 2007).

Distance education increasingly relies on various technologies to facilitate teacher-student interaction from afar. Those technologies include prerecorded video, interactive video, asynchronous and synchronous Internet technologies, and others. Among these, online (Internet-based) technology is considered by some policymakers to be the cornerstone of the educational landscape of the future¹ (U.S. Department of Education 2004). According to a recent industry report, some of the most important reasons for schools and districts to adopt online courses are being able to deliver broader curriculum cost-effectively, expanding college preparation/Advanced Placement courses, providing equal access to curriculum for schools with limited resources, and resolving scheduling conflicts (Interactive Educational Systems Design 2002). The reported barriers to online course implementation that were mentioned include lack of funding, lack of evidence that online courses are effective, difficulty finding online courses that would meet local needs and standards, lack of interest at the school level, and lack of interest at the district level.

Some within the distance education field have come to view virtual (cyber) schools offering online distance education as a way to meet varied student needs at elementary and secondary instructional

¹Online technology has become highly accessible in American schools, with nearly 100 percent of public schools in the United States having access to the Internet and 97 percent of them using high-speed broadband connections by fall 2005. The number of students in the U.S. public schools for each Internet-connected computer in 2005 was 3.8, a decrease from the 12.1 to 1 ratio in 1998 (Wells and Lewis 2006).

levels (Clark 2001; Berge and Clark 2005). Most virtual schools tend to be at the high school level; however, some are also offering courses at the middle and elementary school levels. By 2007, 23 states had established virtual schools (Technology Counts 2007), although the funding models for such state-sponsored efforts remain different across the country. Some arrangements are entirely dependent on state funding, others draw upon a mix of state and federal funding, while still others collect tuition or course fees from school districts and parents (Borja 2005).

Study Methodology and Analyses

To address the existing gap in knowledge about technology-based distance education in the nation's public elementary and secondary schools, OET has twice requested the FRSS survey, "Distance Education Courses for Public Elementary and Secondary School Students." The first FRSS survey provided baseline data, gathered for the 12-month 2002–03 school year, on the prevalence of technology-based distance education courses across the nation. The study found that approximately 36 percent of public school districts and 9 percent of all public schools nationwide had students enrolled in technology-based distance education courses during the 12-month 2002–03 school year. The current 2004–05 study is the second collection of nationally representative data undertaken by NCES on this subject.²

As with the 2002–03 baseline survey, the 2004–05 study was conducted through the NCES FRSS. The FRSS is designed to collect small amounts of policy-relevant data on a quick turnaround basis from nationally representative samples of various educational sectors, such as public schools and school districts. In both school years, the FRSS distance education 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 both studies, 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. The technologies included Internet courses using synchronous (i.e., simultaneous

²The time frame for the first survey was the 12-month 2002–03 school year. It included technology-based distance education courses during the summer of 2002 or the summer of 2003, depending on how records were kept at the district. The time frame for the second survey was the 12-month 2004–05 school year. It included technology-based distance education courses during the summer of 2004 or the summer of 2005, depending on how records were kept at the district.

or “real time”) computer-based instruction, Internet courses using asynchronous (i.e., not simultaneous) computer-based instruction, two-way interactive video (i.e., two-way video with two-way audio), one-way prerecorded video, and other 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 2004–05 FRSS 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 the completion status of those enrollments. Other survey items asked about students’ enrollment in AP and dual credit college-level courses offered via distance education, which entities delivered distance education courses, which technologies were used as primary modes of instructional delivery for distance education courses, and locations from which students accessed online distance education courses. Finally, respondents were asked whether their district had any plans to expand their distance education courses in the future.³ The questionnaires used in both 2002–03 and 2004–05 are provided in appendix C.

Questionnaires for the 2004–05 survey were mailed in fall 2005 to a nationally representative sample of 2,312 public school districts in the 50 states and the District of Columbia. The sample was selected from the 2003–04 NCES Common Core of Data (CCD) “Local Education Agency Universe Survey” file, which was the most current file available at the time of selection. Of the districts selected for the sample, 22 were deemed ineligible for the survey during data collection,⁴ and 2,176 completed questionnaires. The questionnaire responses were weighted to produce national estimates. The unweighted response rate was 95.0 percent, and the weighted response rate was 95.6 percent. To permit longitudinal analyses of the survey data, the sample of districts for the 2004–05 study was designed to

³To allow comparisons with the 2002–03 study, the 2004–05 study asked most of the questions that were included in the baseline questionnaire.

⁴Detailed information about why districts were identified as ineligible can be found in appendix A.

maximize overlap with the district sample for the 2002–03 baseline study. Of 2,312 districts in the 2004–05 sample, 2,242 districts also had been sampled for the 2002–03 survey, resulting in an overlap of 97 percent between the samples for the two surveys (see appendix A for a more detailed discussion of the sample and sampling frame). Although the study was designed primarily as a cross-sectional study, the use of the overlapping sample provides a longitudinal component that can be used to analyze responses from the two surveys. Such analyses require repeated measurements for the same districts that would not otherwise be possible with independent cross-sectional samples.

When reviewing the cross-sectional and longitudinal analyses, the reader should be aware that while cross-sectional analyses present data across districts, the longitudinal analyses present data showing change taking place at the individual district level. Specifically, the cross-sectional analyses indicate whether the overall proportion of districts in the nation with technology-based distance education increased, decreased, or stayed about the same over time, while the longitudinal analyses show what proportion of individual districts that had technology-based distance education in the first year of data collection still had it, and what proportion dropped it, in the second year of data collection. The longitudinal analyses also show what proportion of individual districts that did not have technology-based distance education in the first year of data collection started having students enrolled in this type of education courses in the second year of data collection. Similarly, while the cross-sectional analyses present data about the overall change in the proportions of districts in the nation that used particular technologies to deliver distance education courses, the longitudinal analyses make it possible to observe the proportions of individual districts that used a particular technology in the first year of data collection and then continued using it or switched to a different technology in the second year of data collection. In short, the cross-sectional and longitudinal analyses present complementary data examining different aspects of change over time. A more detailed discussion of the comparisons between the 2002–03 and 2004–05 surveys is provided in appendix A.

The data 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 also exist. This report is purely descriptive in nature. The variables examined here demonstrate the range of information that is available from the study (see the survey questionnaire in appendix C).

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. However, not all statistically significant differences are reported. Throughout this report, differences that appear large (particularly those by district characteristics) may not be statistically significant, possibly 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.

Organization of This Report

This report presents information about technology-based distance education in public elementary and secondary schools in the 2004–05 school year and changes from the 2002–03 school year. The discussion is divided into chapters that reflect the major topics addressed by the questionnaire. Chapter 2 describes the prevalence of technology-based distance education courses in public school districts and public schools. Chapter 3 discusses technology-based distance education course enrollments at various instructional levels. It also presents completion status of course enrollments taken via technology-based distance education in 2004–05, as well as districts’ plans to expand technology-based distance education offerings in the future. Chapter 4 presents information about the entities that deliver technology-based distance education courses to students and reports about technology-based distance education course delivery by districts to students who are not regularly enrolled in the district. Chapter 5 reports on the prevalence of AP and college-level courses delivered via technology-based distance education and presents the types of entities that deliver these AP and college-level courses to students. Chapter 6 outlines technologies that are used for delivering distance education courses. Chapter 7 presents a closer look at courses delivered online, including information on districts’ provision or payment for the infrastructure needed to access online courses from home. Chapter 8 presents longitudinal analysis of the data, including changes in prevalence of technology-based distance education courses and in technologies that are used for course delivery. Chapter 9 summarizes the findings and provides conclusions from the

study. A detailed discussion of the survey methodology and tables of standard errors for all data presented in this report are included as technical appendixes (appendixes A and B). The 2002–03 and 2004–05 FRSS questionnaires are presented in appendix C.

2. Technology-Based Distance Education Courses for Public School Students

The FRSS 2004–05 survey collected information on several key measures of availability of technology-based distance education in public elementary and secondary schools. First, the survey asked whether there were any public elementary or secondary school students in the district enrolled in technology-based distance education courses in 2004–05 (12-month school year). Districts with students enrolled in such distance education courses were asked to indicate the number of schools with at least one student enrolled in technology-based distance education courses.

Prevalence of Technology-Based Distance Education Courses in Public School Districts

During the 12-month 2004–05 school year, 37 percent of public school districts had students in the district enrolled in technology-based distance education courses (table 1). This represents an estimated 5,670 of a total 15,190 public school districts in the country.⁵

The percentage of districts that had students enrolled in technology-based distance education courses in 2004–05 varied by district size, metropolitan status, region, and poverty concentration. Fifty percent of large districts had students enrolled in technology-based distance education courses, as compared to 35 percent of medium-sized districts and 37 percent of small districts (table 1). In addition, a greater percentage of districts located in rural areas than districts in suburban or urban areas indicated that they had students enrolled in technology-based distance education courses (45 percent compared to 32 and 25 percent, respectively). Examination of regional differences indicates that larger percentages of districts located in the Southeast and Central regions had students enrolled in technology-based distance education than districts located in the Northeast and West (46 and 45 percent of districts compared to 22 and 35 percent, respectively). The percentage of districts with students enrolled in technology-based distance education courses was lower in the Northeast than in other regions (22 percent vs. 35 to 46 percent). The percentage of districts having students enrolled in technology-based distance education

⁵ Whether a district had students enrolled in technology-based distance education courses does not provide information about the number of schools with technology-based courses in the district, the number of technology-based distance education courses, or the number of enrollments in technology-based distance education courses.

courses also varied by districts' poverty concentration. Thirty-five percent of districts in the lowest poverty areas had students enrolled in technology-based distance education courses, as compared to 42 percent of districts with medium poverty concentration and 43 percent of districts with high poverty concentration.

Table 1. Number of public school districts in the nation, number of public school districts with students enrolled in technology-based distance education courses, and percent of public school districts with students enrolled in technology-based distance education courses, by district characteristics: 2002–03 and 2004–05

District characteristic	Number of districts		Number of districts with students enrolled in technology-based distance education courses		Percent of districts with students enrolled in technology-based distance education courses	
	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05
All public school districts	15,040	15,190	5,470	5,670	36	37
District enrollment size						
Less than 2,500.....	11,080	11,120	4,050	4,150	37	37
2,500 to 9,999.....	3,100	3,090	1,010	1,070	32	35
10,000 or more	820	850	410	430	50	50
Metropolitan status						
Urban	1,220	1,530	290	380	23	25
Suburban.....	6,150	6,700	1,680	2,120	27	32
Rural	7,660	6,950	3,500	3,160	46	45
Region						
Northeast	3,040	2,910	640	630	21	22
Southeast	1,750	1,750	790	800	45	46
Central	5,390	5,650	2,490	2,550	46	45
West.....	4,850	4,880	1,540	1,690	32	35
Poverty concentration						
Less than 10 percent.....	4,850	5,210	1,610	1,840	33	35
10 to 19 percent.....	5,330	5,070	2,220	2,140	42	42
20 percent or more.....	3,690	3,330	1,560	1,440	42	43

NOTE: Percentages are based on unrounded numbers. For the 2002–03 study sample, there were 3 cases for which district enrollment size was missing and 112 cases for which poverty concentration was missing. For the 2004–05 study sample, there were 7 cases for which district enrollment size was missing and 103 cases for which poverty concentration was missing. Poverty estimates for school districts were based on Title I data provided to the U.S. Department of Education by the U.S. Census Bureau. Detail may not sum to totals because of rounding or missing data for district characteristics.

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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

Prevalence of Technology-Based Distance Education Courses in Public Schools

Ten percent of all public schools nationwide had students enrolled in technology-based distance education courses during the 12-month 2004–05 school year (table 2). This represents an estimated 9,050 public schools nationwide.⁶

Table 2. Percent of public schools in the nation with students enrolled in technology-based distance education courses, by instructional level and district characteristics: 2002–03 and 2004–05

District characteristic	All instructional levels		Elementary schools		Middle or junior high schools		High schools		Combined or ungraded schools ¹	
	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05
All public school districts.....	9	10	#	1	4	5	38	39	20	20
District enrollment size										
Less than 2,500.....	15	16	#	1!	4	4	44	44	29	28
2,500 to 9,999.....	6	7	#	#	4	4	31	33	10	13
10,000 or more.....	6	7	#	#	4	6	34	38	8	8
Metropolitan status										
Urban.....	5	5	#	#	3	3	26	26	4	4
Suburban.....	7	9	#	1	4	6	34	39	13	16
Rural.....	15	16	#	1!	4	5	47	48	32	30
Region										
Northeast.....	5	6	#	1	1!	4	26	27	12!	11
Southeast.....	10	12	#	#	6	8	45	49	14	14
Central.....	12	12	#	1!	3	4	46	46	28	29
West.....	8	9	#	#	4	4	31	34	19	21
Poverty concentration										
Less than 10 percent.....	8	10	#	1	4	5	35	40	29	23
10 to 19 percent.....	10	11	#	#	4	5	40	44	23	18!
20 percent or more.....	9	10	#	1	4	5	40	37	16	21!

Rounds to zero.

! Interpret data with caution; the coefficient of variation is greater than 30 percent.

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

NOTE: Percentages are based on unrounded numbers. Percentages are based on the estimated 89,310 schools in the nation in 2002–03 and 89,610 schools in the nation in 2004–05. Poverty estimates for school districts were based on Title I data provided to the U.S. Department of Education by the U.S. Census Bureau.

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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

⁶ This number is derived from the total number of schools in the nation. For the school year 2004–05, this number was estimated at 89,610. See table A-2 in the Technical Notes (appendix A) for the counts of the number of schools in the nation by instructional level and district characteristics.

The percentage of schools that had students enrolled in technology-based distance education in 2004–05 varied by district size, metropolitan status, and region. Although a greater percentage of large districts than medium or small districts had students enrolled in technology-based distance education courses (table 1), a greater percentage of schools in small districts had students enrolled in such distance education courses than did schools in medium or large districts (16 percent for small districts vs. 7 percent for both medium-sized and large districts) (table 2).

A higher percentage of schools in rural districts than schools in suburban or urban districts had students enrolled in technology-based distance education courses (16 percent compared to 9 and 5 percent, respectively) (table 2). Also, a greater percentage of schools in suburban districts than schools in urban districts had students enrolled in such distance education courses. In addition, greater percentages of schools in the Central and Southeast regions had students enrolled in technology-based distance education courses than did schools in the West and Northeast (12 percent for both Central and Southeast compared to 9 and 6 percent, respectively).

The percentage of schools with students enrolled in technology-based distance education courses varied substantially by the instructional level of the school. Overall, 39 percent of public high schools offered technology-based distance education courses, as compared to 20 percent of combined or ungraded schools,⁷ 5 percent of middle or junior high schools, and 1 percent of elementary schools (table 2).

Between 2002–03 and 2004–05, the percentage of schools that had students enrolled in technology-based distance education courses at all instructional levels increased from 9 percent in 2002–03 to 10 percent in 2004–05 (table 2).

⁷Combined 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.

Table 3 and figure 1 present the percentage distribution of public schools with students enrolled in technology-based distance education courses by instructional level. Among all public schools with students enrolled in technology-based distance education, 72 percent were high schools, 16 percent were combined or ungraded schools, 8 percent were middle or junior schools, and 3 percent were elementary schools.

Table 3. Percentage distribution of public schools with students enrolled in technology-based distance education courses, by instructional level and district characteristics: 2002–03 and 2004–05

District characteristic	Elementary schools		Middle or junior high schools		High schools		Combined or ungraded schools ¹	
	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05
All public school districts with students enrolled in technology-based distance education	2	3	7	8	76	72	15	16
District enrollment size								
Less than 2,500	1!	3!	4	5	73	68	22	25
2,500 to 9,999	1!	3	10	10	81	78	8	9
10,000 or more	3	4!	12	15	79	76	6	6
Metropolitan status								
Urban	5!	5!	10	9	80	81	6	6!
Suburban	1!	4	9	12	80	74	9	10
Rural	1!	2!	5	5	73	68	21	25
Region								
Northeast	3!	12	3	10	81	67	12	12
Southeast	2	2	11	13	78	75	9	10
Central	1!	3!	5	6	77	71	17	20
West	1!	1!	8	7	73	73	19	19
Poverty concentration								
Less than 10 percent	1!	5	9	10	75	71	15	15
10 to 19 percent	2!	2!	7	9	76	77	15	13
20 percent or more	1	3!	6	7	79	68	14	21

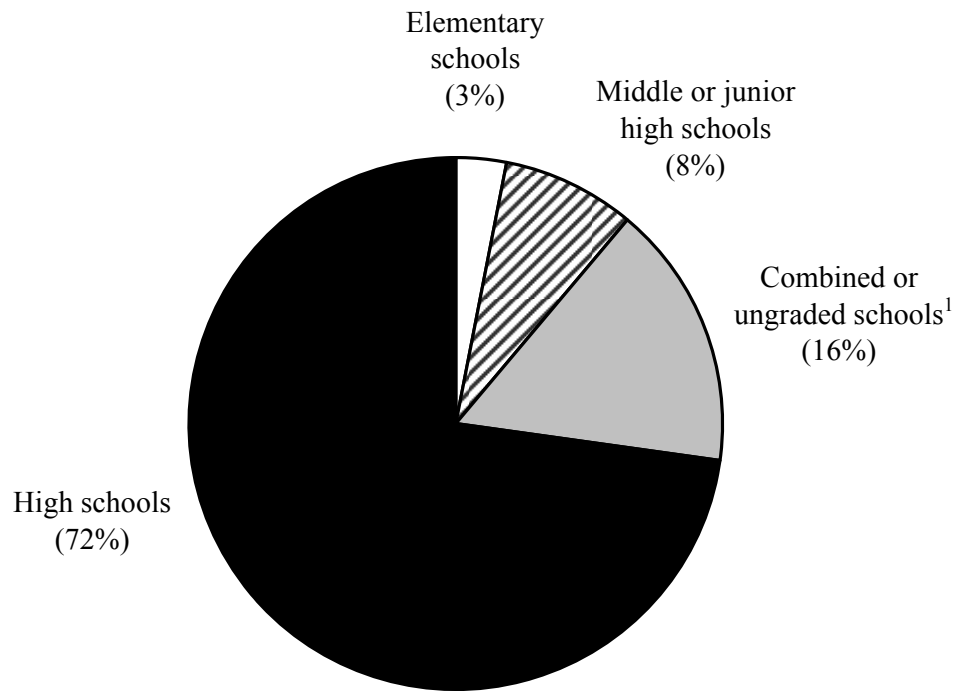
! Interpret data with caution; the coefficient of variation is greater than 30 percent.

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 technology-based distance education courses in 2002–03 and 9,050 schools with students enrolled in technology-based distance education courses in 2004–05. Poverty estimates for school districts were based on Title I data provided to the U.S. Department of Education by the U.S. Census Bureau. 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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

Figure 1. Percentage distribution of public schools with students enrolled in technology-based distance education courses, by instructional level: 2004–05



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 9,050 schools with students enrolled in technology-based distance education courses in 2004–05. 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: 2004–05,” FRSS 89, 2005.

3. Enrollments in Technology-Based Distance Education Courses

Districts with students enrolled in technology-based distance education courses were asked to indicate the number of enrollments in technology-based distance education courses of students regularly enrolled in the districts. Course completion status was also explored. Additionally, districts were asked about their plans for the future expansion of distance education courses.

Technology-Based Distance Education Enrollments by Instructional Level

In 2004–05, there were an estimated 506,950 enrollments in technology-based distance education courses in public school districts (table 4). If a student was enrolled in multiple distance education courses, districts were instructed to count the student once for each course in which he or she was enrolled. Thus, distance education enrollments may include duplicated counts of students.⁸ Between 2002–03 and 2004–05, the number of enrollments in technology-based distance education courses increased by 60 percent, from an estimated 317,070 enrollments in 2002–03 to 506,950 enrollments in 2004–05.

In 2002–03, three districts in the sample had enrollments in technology-based distance education courses that exceeded the total unduplicated number of enrollments in the district, indicating enrollment in more than one distance education course per student. The weighted sum of the distance education enrollments in these three districts constituted 18 percent of the distance education enrollments in the nation in 2002–03. In 2004–05, seven districts in the sample had enrollments in technology-based distance education courses that exceeded the total unduplicated number of enrollments in the district. The weighted sum of the distance education enrollments in these seven districts constituted 25 percent of the distance education enrollments in the nation in 2004–05. If the weighted sums of the distance education

⁸To put the number of enrollments in distance education courses in context, NCES reported 48,794,911 students enrolled in public elementary and secondary schools in 2004–05. It is important to note that distance education enrollments collected in the Fast Response Survey System (FRSS) survey may include duplicated counts of students, while the NCES estimate of 48,794,911 students enrolled in public elementary and secondary schools is an unduplicated count (Sable and Hill 2006, p. 9). That is, the unduplicated number of students enrolled in distance education courses could be smaller than the estimated 506,950 enrollments in distance education courses, since a student enrolled in multiple distance education courses was counted for each course in which he or she was enrolled.

enrollments for these districts are removed from the sums of the distance education enrollments for the two years, the number of enrollments in technology-based distance education courses would be an estimated 260,890 in 2002–03 and 380,240 in 2004–05 (not shown in tables).⁹

Table 4. Number of enrollments in technology-based distance education courses of students regularly enrolled in the public school districts, by instructional level and district characteristics: 2002–03 and 2004–05

District characteristic	All instructional levels		Elementary schools		Middle or junior high schools		High schools		Combined or ungraded schools ¹	
	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05
All public school districts with students enrolled in technology-based distance education.....	317,070	506,950	2,780!	12,540!	6,390	15,150	214,140	309,630	93,760	169,630!
District enrollment size										
Less than 2,500.....	116,300	210,200	80!	610!	1,250!	6,060!	72,730	103,190	42,240!	100,340!
2,500 to 9,999.....	82,370	102,730	230!	6,650!	1,870!	2,570	44,170	48,420	36,110	45,080
10,000 or more.....	118,390	193,440	2,480!	5,280!	3,270	6,520	97,240	157,440	15,410!	24,210
Metropolitan status										
Urban.....	98,100	136,100	2,390!	3,340!	2,120!	2,640!	57,730	70,540	35,860	59,580
Suburban.....	119,880	267,420	110!	8,790!	2,520	8,890!	77,980	168,320	39,280!	81,420!
Rural.....	99,080	103,430	270!	410!	1,760	3,620!	78,440	70,770	18,620	28,630
Region										
Northeast.....	41,950!	108,300!	100!	570!	190!	3,870!	17,300	16,860	24,350!	87,000!
Southeast.....	59,240	112,830	1,390!	1,900!	2,530	5,030	50,640	89,800	4,680	16,090
Central.....	106,690	128,650	940!	9,870!	1,050!	2,130!	59,110	70,450	45,590	46,190!
West.....	109,190	157,180	350!	200!	2,620	4,110!	87,090	132,520	19,130!	20,350!
Poverty concentration										
Less than 10 percent.....	75,740	112,320	570!	10,120!	2,020	4,070	55,670	80,150	17,470!	17,980!
10 to 19 percent.....	95,510	151,050	1,450!	2,020!	1,830	4,800	78,680	124,540	13,560	19,700
20 percent or more.....	86,110	106,610	760!	400!	2,540!	6,280!	75,930	78,590	6,880	21,340

¹ Interpret data with caution; the coefficient of variation is greater than 30 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: Sums are based on 5,470 districts in the nation with students enrolled in technology-based distance education courses in 2002–03, and on 5,670 districts in the nation with students enrolled in technology-based distance education courses in 2004–05. 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 2002–03 study sample, there were 3 cases for which district enrollment size was missing and 112 cases for which poverty concentration was missing. For the 2004–05 study sample, there were 7 cases for which district enrollment size was missing and 103 cases for which poverty concentration was missing. Poverty estimates for school districts were based on Title I data provided to the U.S. Department of Education by the U.S. Census Bureau. Detail may not sum to totals because of rounding or missing data for district characteristics.

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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

⁹ The two districts with the largest distance education enrollments were in the sample in both years. These two districts accounted for 55,700 distance education enrollments in 2002–03 and 86,180 distance education enrollments in 2004–05.

Of the total enrollments in 2004–05 in technology-based distance education courses, 61 percent were in high schools and 33 percent were in combined or ungraded schools; the remaining enrollments were in middle or junior high schools and elementary schools (table 5 and figure 2).

Table 5. Percentage distribution of enrollments in technology-based distance education courses of students regularly enrolled in the public school districts, by instructional level and district characteristics: 2002–03 and 2004–05

District characteristic	Elementary schools		Middle or junior high schools		High schools		Combined or ungraded schools ¹	
	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05
All public school districts with students enrolled in technology-based distance education	1!	2!	2	3	68	61	30	33
District enrollment size								
Less than 2,500	#	#	1!	3!	63	49!	36!	48!
2,500 to 9,999	#	6!	2!	3!	54	47	44	44
10,000 or more	2!	3!	3	3	82	81	13!	13
Metropolitan status								
Urban	2!	2!	2!	2!	59	52	37	44
Suburban	#	3!	2!	3!	65	63	33!	30!
Rural	#	#	2	3!	79	68	19	28
Region								
Northeast	#	1!	#	4!	41!	16!	58!	80
Southeast	2!	2!	4	4	85	80	8	14
Central	1!	8!	1!	2!	55	55	43	36
West	#	#	2!	3!	80	84	18!	13!
Poverty concentration								
Less than 10 percent	1!	9!	3	4!	74	71	23!	16!
10 to 19 percent	2!	1!	2	3	82	82	14	13
20 percent or more	1!	#	3!	6!	88	74	8	20

Rounds to zero.

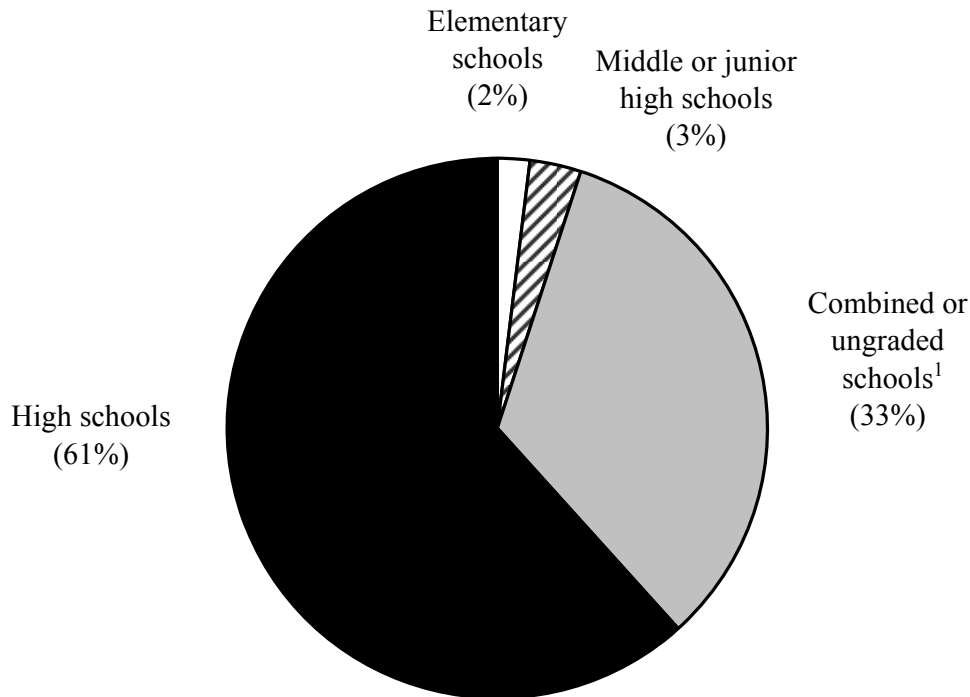
! Interpret data with caution; the coefficient of variation is greater than 30 percent.

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 317,070 enrollments in technology-based distance education courses in 2002–03 and 506,950 enrollments in distance education courses in 2004–05. Poverty estimates for school districts were based on Title I data provided to the U.S. Department of Education by the U.S. Census Bureau. 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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

Figure 2. Percentage distribution of enrollments in technology-based distance education courses of students regularly enrolled in the public school districts, by instructional level: 2004–05



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.

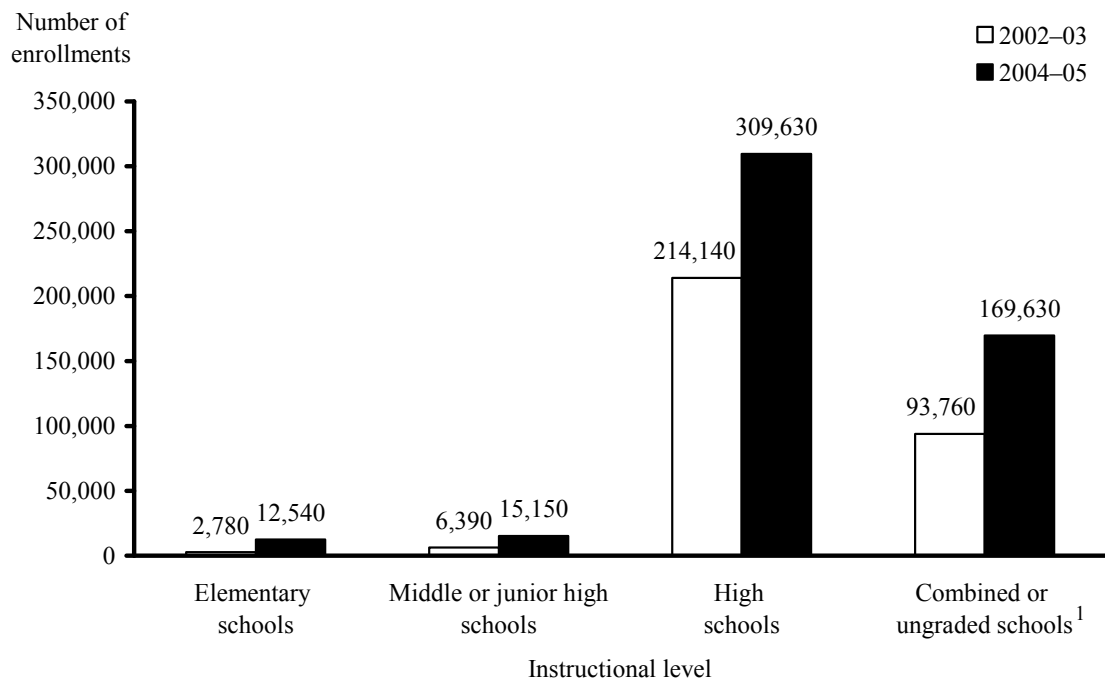
NOTE: Percentages are based on unrounded numbers. Percentages are based on the estimated 506,950 enrollments in technology-based distance education courses in 2004–05. Detail may not sum to totals because of rounding.

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: 2004–05,” FRSS 89, 2005.

Figure 3 and table 4 show the number of enrollments in technology-based distance education courses by instructional level for 2002–03 and 2004–05. Enrollment in technology-based distance education courses among high school students increased from an estimated 214,140 to 309,630 between 2002–03 and 2004–05.¹⁰ While the number of technology-based distance education enrollments increased between 2002–03 and 2004–05, no differences were detected between these two school years in the percentage distribution of technology-based distance education enrollments at different instructional levels (table 5).

¹⁰The total unduplicated enrollment in public secondary schools increased from 4,338,000 in 2002–03 to 4,617,000 in 2004–05 (U.S. Department of Education, National Center for Education Statistics, Common Core of Data, retrieved November 26, 2007, from http://nces.ed.gov/programs/digest/d06/tables/dt06_036.asp).

Figure 3. Number of enrollments in technology-based distance education courses, by instructional level: 2002–03 and 2004–05



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: There were estimated 317,070 enrollments in technology-based distance education courses in 2002–03 and 506,950 enrollments in technology-based distance education courses in 2004–05.

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: 2004–05,” FRSS 89, 2005.

The number of enrollments in technology-based distance education courses in 2004–05 varied considerably among districts, from just a few enrollments per district to more than 100.¹¹ However, the majority of districts (57 percent) reported small numbers of technology-based distance education enrollments (1 to 20 enrollments), with a quarter of the districts (24 percent) having 5 or fewer enrollments, 13 percent having between 6 and 10 enrollments, and 20 percent having 11 to 20 enrollments (table 6). About a quarter (24 percent) of districts reported between 21 and 50 enrollments, 9 percent of districts reported 51 to 100 enrollments, and another 9 percent reported more than 100 enrollments in technology-based distance education courses.

¹¹The category “more than 100 enrollments” included districts with technology-based distance education enrollment ranging from 101 to more than 1,000. In 1 percent of the districts, the number of enrollments in technology-based distance education courses was more than 1,000.

Table 6. Percentage distribution of public school districts with students enrolled in technology-based distance education courses, by the number of distance education enrollments and district characteristics: 2002–03 and 2004–05

District characteristic	Number of technology-based distance education enrollments											
	1–5		6–10		11–20		21–50		51–100		More than 100	
	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05
All public school districts with students enrolled in technology-based distance education.....	26	24	13	13	18	20	29	24	8	9	6	9
District enrollment size												
Less than 2,500.....	27	26	14	15	19	23	31	24	6	8	21	5
2,500 to 9,999.....	25	25	10	10	17	15	27	26	10	12	11	13
10,000 or more.....	13	5	7	9	11	12	15	15	15	13	38	45
Metropolitan status												
Urban.....	20	181	31	9	16	201	17	13	15	7	29	34
Suburban.....	33	26	12	10	16	16	21	25	9	12	8	11
Rural.....	23	24	14	16	19	23	34	25	6	7	4	5
Region												
Northeast.....	33	38	111	131	16	15	28	20	8	8	41	6
Southeast.....	25	17	9	12	15	17	23	20	11	14	17	19
Central.....	24	21	13	14	21	24	33	27	6	9	3	5
West.....	27	27	16	13	16	18	25	23	8	7	8	12
Poverty concentration												
Less than 10 percent.....	30	29	15	13	18	19	25	23	7	9	5	7
10 to 19 percent.....	29	24	14	14	15	19	29	26	7	9	6	8
20 percent or more.....	18	17	9	15	23	25	33	23	10	10	8	10

! Interpret data with caution; the coefficient of variation is greater than 30 percent.

NOTE: Data presented in this table are based on the estimated 5,470 districts with students enrolled in technology-based distance education courses in 2002–03 and 5,670 districts with students enrolled in technology-based distance education courses in 2004–05. For the 2002–03 study sample, there were 3 cases for which district enrollment size was missing and 112 cases for which poverty concentration was missing. For the 2004–05 study sample, there were 7 cases for which district enrollment size was missing and 103 cases for which poverty concentrations was missing. Poverty estimates for school districts were based on Title I data provided to the U.S. Department of Education by the U.S. Census Bureau. Detail may not sum to totals because of rounding or missing data for district characteristics.

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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

Having a large number of enrollments in technology-based distance education was related to district size, metropolitan status, and region. The percentage of districts with more than 100 technology-based distance education enrollments in 2004–05 increased with district size, from 5 percent of small districts, to 13 percent of medium-sized districts, to 45 percent of large districts (table 6). Also, the percentage of urban districts that had more than 100 enrollments in technology-based distance education courses was larger than the percentages of suburban or rural districts (34 percent vs. 11 and 5 percent, respectively). Additionally, the percentage of districts located in the West and Southeast that had more

than 100 enrollments in technology-based distance education courses was larger than the percentage of districts located in the Northeast and Central regions (12 and 19 percent vs. 6 and 5 percent, respectively).

Technology-Based Distance Education Enrollments by Completion Status

In 2004–05, the survey asked about the completion status of technology-based distance education enrollments in the districts.¹² The following options for completion status were provided: “course completion with a passing grade,” “course completion without a passing grade,” “incomplete,” “other,” and “don’t know course completion status.” Of the estimated 506,950 enrollments in technology-based distance education courses (table 4), 66 percent were completed with a passing grade and 6 percent were completed without a passing grade (table 7). The completion status was unknown for 21 percent of the enrollments.

Availability of information on course completion differed for districts by metropolitan status. Urban districts, which had the highest percentage of large numbers of technology-based distance education course enrollments (34 percent with more than 100 enrollments) (table 6), at the same time had the largest percentage of courses with an unknown completion status (46 percent) (table 7).

¹²This question was not asked for the 2002–03 year.

Table 7. Percentage distribution of enrollments in technology-based distance education courses of students regularly enrolled in the public school districts, by course completion status and district characteristics: 2004–05

District characteristic	Course completions with a passing grade	Course completions without a passing grade	Incompletes	Other	Don't know course completion status
All public school districts with students enrolled in technology-based distance education courses.....	66	6	4!	4!	21
District enrollment size					
Less than 2,500	77	3!	6!	5!	10!
2,500 to 9,999.....	62	9	3	1!	26!
10,000 or more	56	6	4	5	30
Metropolitan status					
Urban.....	39	8	7!	1!	46
Suburban.....	76	5	3!	3	13!
Rural	75	4!	3!	10!	7
Region					
Northeast	87	8!	1!	#	4!
Southeast	67	9	3	6	15
Central	54	3!	2	8!	33!
West.....	60	3!	9!	1	26
Poverty concentration					
Less than 10 percent.....	63	4	5	2	27!
10 to 19 percent.....	61	5	4	5	24
20 percent or more	67	8	2!	#	23!

Rounds to zero.

! Interpret data with caution; the coefficient of variation is greater than 30 percent.

NOTE: Percentages are based on unrounded numbers. Percentages are based on the estimated 506,950 enrollments in technology-based distance education courses in 2004–05. Poverty estimates for school districts were based on Title I data provided to the U.S. Department of Education by the U.S. Census Bureau. 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 Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

Plans for Future Expansion of Technology-Based Distance Education Courses

Districts that reported offering technology-based distance education courses were asked whether they planned to expand their distance education courses in the future. Seventy-one percent of districts with students enrolled in technology-based distance education courses in 2004–05 planned to expand their distance education courses in the future (table 8). Among districts with technology-based distance education courses, a greater percentage of large districts than medium-sized or small districts planned to expand their distance education courses (86 percent vs. 69 and 70 percent, respectively). Also, a greater percentage of urban than rural and suburban districts with technology-based distance education planned to expand their distance education offerings (86 percent vs. 69 and 71 percent, respectively). A greater percentage of districts with technology-based distance education in the Southeast than such districts in the West and Central regions planned future expansion (81 percent vs. 71 and 67 percent, respectively).

Between 2002–03 and 2004–05, there was no difference in the percentages of all districts with technology-based distance education that planned to expand their distance education courses. However, the percentages of large districts and urban districts with technology-based distance education that planned to expand their distance education courses did increase from 2002–03 to 2004–05. Seventy-six percent of large districts with technology-based distance education expressed interest in 2002–03 in expanding their distance education courses, compared to 86 percent that expressed such interest in 2004–05. The percentage of urban districts with technology-based distance education that expressed interest in expanding their distance education courses increased from 70 percent in 2002–03 to 86 percent in 2004–05.

Table 8. Percent of public school districts with students enrolled in technology-based distance education courses that were planning to expand distance education courses, by district characteristics: 2002–03 and 2004–05

District characteristic	2002–03	2004–05
All public school districts with students enrolled in technology-based distance education courses	72	71
District enrollment size		
Less than 2,500	73	70
2,500 to 9,999	68	69
10,000 or more	76	86
Metropolitan status		
Urban	70	86
Suburban	69	71
Rural	74	69
Region		
Northeast	71	76
Southeast	77	81
Central	71	67
West	73	71
Poverty concentration		
Less than 10 percent	69	67
10 to 19 percent	71	70
20 percent or more	78	78

NOTE: Percentages are based on unrounded numbers. Percentages are based on the estimated 5,470 districts with students enrolled in technology-based distance education courses in 2002–03 and 5,670 districts with students enrolled in technology-based distance education courses in 2004–05. Poverty estimates for school districts were based on Title I data provided to the U.S. Department of Education by the U.S. Census Bureau.

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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

4. Entities Delivering Technology-Based Distance Education Courses

Districts that reported having students enrolled in technology-based distance education courses were asked about the types of entities that delivered the distance education courses. Districts were also asked whether they, or schools located within their district, delivered any distance education courses to students who were not regularly enrolled in the district (e.g., to students from other districts, private school students, or homeschooled students).

Entities Delivering Courses

Districts were asked which entities delivered technology-based distance education courses to students regularly enrolled in their district. Entities included

- an online charter school in the district;¹³
- other schools in the district;
- their district (i.e., delivered centrally from the district);
- 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;

¹³The 2002–03 survey questionnaire worded this entity as “cyber (i.e., online) charter school in the district,” which was unclear to some respondents. The wording on the 2004–05 survey questionnaire was changed to “online charter school in the district.”

- a non-U.S.-based public or private entity (e.g., school, university, private vendor); and
- other entities.

Postsecondary institutions were the leading providers of technology-based distance education courses to public school students in 2004–05. Of those districts that reported having students enrolled in technology-based distance education courses, about half (47 percent) had distance education courses delivered by a postsecondary institution (tables 9 and 10).¹⁴ A third (33 percent) of districts with students in technology-based distance education had courses delivered by another local school district, or schools in other districts, within their state; 24 percent had students enrolled in distance education courses delivered by a state virtual school within their state; and 21 percent had students enrolled in courses delivered centrally from their district. Fifteen percent of districts with enrollments in technology-based distance education had students enrolled in distance education courses delivered by education service agencies within their state, and 14 percent had students enrolled in distance education courses delivered by independent vendors.

Among the districts with technology-based distance education, a lower percentage of small districts than medium-sized and large districts had technology-based distance education courses delivered by other schools in the district (5 percent vs. 12 and 25 percent, respectively), by a state virtual school in their state (22 percent vs. 32 percent for each), by a state virtual school in another state (4 percent vs. 10 and 12 percent, respectively), or by independent vendors (10 percent vs. 23 and 25 percent, respectively) (table 10). However, a greater percentage of small districts than medium-sized or large districts with technology-based distance education had courses delivered by postsecondary institutions (51 percent vs. 40 and 33 percent, respectively).

Among districts with technology-based distance education, greater percentages of urban and suburban districts than rural districts had technology-based distance education courses delivered by independent vendors (19 and 18 percent, respectively, vs. 10 percent) (table 10). A larger percentage of rural districts than urban districts with technology-based distance education had courses delivered by postsecondary institutions (51 percent vs. 35 percent).

¹⁴Districts could have more than one entity delivering technology-based distance education courses.

Table 9. Percentage distribution of public school districts indicating whether various entities delivered the technology-based distance education courses in which students in their district were enrolled: 2002–03 and 2004–05

Entity	Yes		No		Don't know	
	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05
Online charter school in the district	3	4	95	95	2	1!
Other schools in the district	8	8	91	91	1!	1
Their district (delivered centrally from the district)	16	21	83	78	1!	#
Another local school district, or schools in other districts, in their state	34	33	64	66	2	2
Education service agencies within their state ¹	17	15	81	83	2	2
State virtual school in their state ²	18	24	81	75	1	1!
State virtual school in another state ²	4	6	94	92	2	2
Districts or schools in other states ³	4	4	94	94	2	2
Postsecondary institutions	48	47	50	51	1!	2
Independent vendor	18	14	79	84	3	2
Non-U.S.-based public or private entity	—	1!	—	97	—	2
Other ⁴	3	2!	92	98	5	#

— Not available; information not collected in 2002–03.

Rounds to zero.

! Interpret data with caution; the coefficient of variation is greater than 30 percent.

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 This category does not include state virtual schools.

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

NOTE: Percentages in this table are based on the estimated 5,470 districts with students enrolled in technology-based distance education courses in 2002–03 and 5,670 districts with students enrolled in technology-based distance education courses in 2004–05. 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.

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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

Table 10. Percent of public school districts indicating that various entities delivered the technology-based distance education courses in which students in their district were enrolled, by district characteristics: 2002–03 and 2004–05

District characteristic	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	
	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05
All public school districts with students enrolled in technology-based distance education courses	3	4	8	8	16	21	34	33	17	15
District enrollment size										
Less than 2,500.....	3	4	5	5	15	22	39	37	18	15
2,500 to 9,999.....	3!	2!	15	12	17	18	26	24	18	15
10,000 or more	5	4	28	25	22	25	13	18	14	12
Metropolitan status										
Urban.....	8!	12!	26	17!	24	31	21	15!	20	8
Suburban.....	5	4!	9	7	15	17	25	25	19	17
Rural.....	2!	3!	6	7	16	23	40	40	16	14
Region										
Northeast.....	4!	6!	11	3!	21	20	38	24	18	20
Southeast.....	1!	#	16	15	15	14	27	23	18	17
Central.....	3!	5!	7	7	16	24	39	40	17	14
West.....	3!	3!	5	7	15	21	29	30	17	12
Poverty concentration										
Less than 10 percent.....	4	4!	9	8	15	19	33	30	15	16
10 to 19 percent.....	3!	2!	7	8	13	21	33	38	19	15
20 percent or more.....	1!	2!	10	6	21	20	38	30	17	16

See notes at end of table.

Table 10. Percent of public school districts indicating that various entities delivered the technology-based distance education courses in which students in their district were enrolled, by district characteristics: 2002–03 and 2004–05—Continued

District characteristic	State virtual school in their state ²		State virtual school in another state ²		Districts or schools in other states ³		Postsecondary institutions	
	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05
All public school districts with students enrolled in technology-based distance education courses	18	24	4	6	4	4	48	47
District enrollment size								
Less than 2,500.....	15	22	3	4	4	4	54	51
2,500 to 9,999.....	27	32	4	10	3!	5	30	40
10,000 or more	27	32	8	12	5	3	33	33
Metropolitan status								
Urban.....	16	24	6!	11!	3!	2!	22	35
Suburban.....	19	24	4	7	2!	3!	44	45
Rural.....	18	25	4	5	5	4	53	51
Region								
Northeast.....	6!	15	3!	8!	5!	4!	39	31
Southeast.....	43	52	7	11	3!	4!	23	27
Central.....	17	24	4	5	5!	4!	53	52
West.....	12	14	3!	4!	4!	3!	58	57
Poverty concentration								
Less than 10 percent.....	15	22	5	10	5!	5!	49	47
10 to 19 percent.....	18	25	4	2	4!	3!	50	51
20 percent or more.....	22	28	3!	5!	4!	4!	46	45

See notes at end of table.

Table 10. Percent of public school districts indicating that various entities delivered the technology-based distance education courses in which students in their district were enrolled, by district characteristics: 2002–03 and 2004–05—Continued

District characteristic	Independent vendor		Non-U.S.-based public or private entity		Other ⁴	
	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05
All public school districts with students enrolled in technology-based distance education courses	18	14	—	1!	3	2!
District enrollment size						
Less than 2,500.....	16	10	—	1!	3!	2!
2,500 to 9,999.....	23	23	—	1!	4	1!
10,000 or more	28	25	—	1!	3	1!
Metropolitan status						
Urban.....	28	19	—	3!	1!	1!
Suburban.....	22	18	—	#	4!	1!
Rural.....	15	10	—	1!	2!	2!
Region						
Northeast.....	21	22	—	‡	3!	1!
Southeast.....	20	17	—	#	4!	3!
Central.....	13	10	—	1!	3!	1!
West.....	24	15	—	1!	2!	2!
Poverty concentration						
Less than 10 percent.....	21	16	—	2!	4!	1!
10 to 19 percent.....	18	14	—	1!	2!	2!
20 percent or more.....	14	12	—	#	3!	1!

— Not available; information not collected in 2002–03.

Rounds to zero.

! Interpret data with caution; the coefficient of variation is greater than 30 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 This category does not include state virtual schools.

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

NOTE: Percentages are based on the estimated 5,470 districts with students enrolled in technology-based distance education courses in 2002–03 and 5,670 districts with students enrolled in technology-based distance education courses in 2004–05. Poverty estimates for school districts were based on Title I data provided to the U.S. Department of Education by the U.S. Census Bureau. 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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

Among the districts with students enrolled in technology-based distance education, greater percentages of districts located in the Central region and the West had technology-based distance education courses delivered by postsecondary institutions than did districts located in the Northeast and Southeast (52 and 57 percent vs. 31 and 27 percent, respectively) (table 10). About half (52 percent) of districts in the Southeast with technology-based distance education had courses delivered by state virtual schools in their state, as compared to 15 percent of such districts in the Northeast, 24 percent in Central states, and 14 percent in the West.¹⁵

Between 2002–03 and 2004–05, an increased percentage of districts with students enrolled in technology-based distance education courses had those courses delivered to their students centrally from their district (16 percent of districts in 2002–03 compared to 21 percent in 2004–05) (tables 9 and 10). Also, the percentage of districts with technology-based distance education that had courses delivered by state virtual schools within their state increased from 18 percent in 2002–03 to 24 percent in 2004–05.

Delivery of Courses to Students Not Regularly Enrolled in the District

During the 12-month 2004–05 school year, about one-fifth (21 percent) of districts offering technology-based distance education courses delivered them to students who were not regularly enrolled in the district (e.g., to students from other districts, private school students, or homeschooled students) (table 11). No differences were observed in the percentages of districts with technology-based distance education courses that delivered such courses in 2004–05 by district size, metropolitan status, region, or poverty concentration.

Among the districts with technology-based distance education, no overall change took place between 2002–03 and 2004–05 in delivery of technology-based distance education courses to students outside of their districts, with 21 percent of such districts providing distance education courses to students not regularly enrolled in the district in both school years (table 11). However, when compared to 2002–03, there was a decrease in delivery of technology-based distance education courses to students not regularly enrolled in the district in the Northeast, from 29 percent in 2002–03 to 18 percent in 2004–05.

¹⁵This high percentage of districts in the Southeast may be due to the Florida Virtual School, the largest virtual school in the country sponsored by state funds.

Table 11. Percent of public school districts indicating that they delivered technology-based distance education courses to students who were not regularly enrolled in their district, by district characteristics: 2002–03 and 2004–05

District characteristic	2002–03	2004–05
All public school districts with students enrolled in technology-based distance education courses	21	21
District enrollment size		
Less than 2,500	22	22
2,500 to 9,999	18	19
10,000 or more	19	22
Metropolitan status		
Urban	15	20
Suburban	20	17
Rural	22	24
Region		
Northeast	29	18
Southeast	13	18
Central	22	23
West	19	21
Poverty concentration		
Less than 10 percent	19	22
10 to 19 percent	22	21
20 percent or more	22	20

NOTE: Percentages are based on the estimated 5,470 districts with students enrolled in technology-based distance education courses in 2002–03 and 5,670 districts with students enrolled in technology-based distance education courses in 2004–05. Poverty estimates for school districts were based on Title I data provided to the U.S. Department of Education by the U.S. Census Bureau.

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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

5. Advanced Placement and College-Level Courses Offered Through Technology-Based Distance Education

Districts that reported having students enrolled in technology-based distance education courses were asked whether any of those distance education enrollments were in Advanced Placement (AP) or dual credit college-level courses.¹⁶ Districts were also asked about the entities that delivered AP and dual credit college-level courses that were offered to students via technology-based distance education.

Advanced Placement Courses

Twenty-five percent of districts with students enrolled in technology-based distance education courses had students enrolled in AP courses offered through technology-based distance education in 2004–05 (table 12). Having students enrolled in AP distance education courses was related to district size, with a greater percentage of large and medium-sized districts than small districts with technology-based distance education reporting distance education enrollments in AP courses (33 and 31 percent, respectively, vs. 23 percent). The percentage of districts with technology-based distance education with students enrolled in AP courses offered through distance education was higher in the Southeast than in the Central region or in the West (44 percent vs. 23 and 15 percent, respectively). Overall, there were an estimated 17,530 enrollments in AP courses offered through technology-based distance education (not shown in tables), representing 3 percent of the total enrollments in technology-based distance education (table 12).

¹⁶While the 2002–03 survey asked only one question about both types of courses combined, the 2004–05 survey asked separate questions about AP and college-level courses.

Table 12. Percent of public school districts with students enrolled in technology-based distance education courses indicating that students regularly enrolled in the district were enrolled in Advanced Placement courses offered through technology-based distance education, and percent of all enrollments in technology-based distance education courses represented by enrollments in Advanced Placement courses, by district characteristics: 2004–05

District characteristic	Percent of districts with students enrolled in Advanced Placement courses offered through technology-based distance education	Percent of all technology-based distance education enrollments that are in Advanced Placement distance education courses
All public school districts with students enrolled in technology-based distance education courses.....	25	3
District enrollment size		
Less than 2,500	23	4!
2,500 to 9,999.....	31	3
10,000 or more	33	3
Metropolitan status		
Urban.....	22	2
Suburban.....	28	3
Rural	23	7
Region		
Northeast	32	2!
Southeast	44	5
Central	23	5
West.....	15	2
Poverty concentration		
Less than 10 percent.....	29	4
10 to 19 percent.....	24	5
20 percent or more	24	6

! Interpret data with caution; the coefficient of variation is greater than 30 percent.

NOTE: Percentages are based on unrounded numbers. Percents of districts with students enrolled in Advanced Placement courses offered through technology-based distance education are based on the estimated 5,670 districts with students enrolled in technology-based distance education courses in 2004–05. 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. Percents of all technology-based distance education enrollments that are in Advanced Placement distance education courses are based on the estimated 506,950 enrollments in technology-based distance education courses in 2004–05. For the 2004–05 study sample, there were 7 cases for which district enrollment size was missing and 103 cases for which poverty concentration was missing. Poverty estimates for school districts were based on Title I data provided to the U.S. Department of Education by the U.S. Census Bureau.

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: 2004–05,” FRSS 89, 2005.

The entities that delivered the AP courses included postsecondary institutions, public schools or school districts, state virtual schools, independent vendors, and other entities. Postsecondary institutions, public schools and school districts, and state virtual schools were the major providers of AP courses offered through technology-based distance education in the country. Among the districts with students in AP courses delivered through technology-based distance education, 36 percent had students enrolled in AP courses delivered by postsecondary institutions, 36 percent by public schools or districts, and 35 percent by state virtual schools (table 13).¹⁷ Thirteen percent of districts had AP courses delivered by independent vendors.

Table 13. Percentage distribution of public school districts indicating whether various entities delivered the Advanced Placement technology-based distance education courses in which students in their district were enrolled: 2004–05

Entity	Yes	No	Don't know
Postsecondary institutions.....	36	63	1!
Public schools or school districts.....	36	63	#
State virtual schools.....	35	64	1!
Independent vendors.....	13	86	1!
Other entity ¹	3!	95	2!

Rounds to zero.

! Interpret data with caution; the coefficient of variation is greater than 30 percent.

¹ Other responses included educational service agencies and other private institutions.

NOTE: Percentages in this table are based on the estimated 1,410 districts with students enrolled in Advanced Placement courses offered through technology-based distance education in 2004–05. Percentages of districts indicating “yes” for the various entities sum to more than 100 because districts could have more than one entity delivering technology-based distance education courses. 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 Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

Dual Credit College-Level Courses

Districts were also asked about dual credit college-level courses offered through technology-based distance education.¹⁸ Forty percent of districts with students enrolled in technology-based distance education courses had students enrolled in dual credit college-level courses offered through distance education in 2004–05 (table 14).

¹⁷ Districts could have more than one entity delivering AP technology-based distance education courses.

¹⁸ Dual credit college-level courses are courses or programs where high school students can earn both high school and postsecondary credits for the same courses.

Table 14. Percent of public school districts with students enrolled in technology-based distance education courses indicating that students regularly enrolled in the district were enrolled in dual credit college-level courses offered through technology-based distance education, and percent of all enrollments in technology-based distance education courses represented by enrollments in dual credit college-level distance education courses, by district characteristics: 2004–05

District characteristic	Percent of districts with students enrolled in dual credit college-level courses offered through technology-based distance education	Percent of all technology-based distance education enrollments that are in dual credit college-level distance education courses
All public school districts with students enrolled in technology-based distance education courses.....	40	12
District enrollment size		
Less than 2,500	47	15
2,500 to 9,999.....	22	8
10,000 or more	20	10!
Metropolitan status		
Urban.....	24	2
Suburban.....	30	11!
Rural.....	48	26
Region		
Northeast.....	20	3
Southeast.....	20	6
Central.....	48	13
West.....	44	21!
Poverty concentration		
Less than 10 percent.....	36	22
10 to 19 percent.....	42	11
20 percent or more	45	14

! Interpret data with caution; the coefficient of variation is greater than 30 percent.

NOTE: Percentages are based on unrounded numbers. Percents of districts with students enrolled in college-level courses offered through technology-based distance education are based on the estimated 5,670 districts with students enrolled in technology-based distance education courses in 2004–05. For the 2004–05 study sample, there were 7 cases for which district enrollment size was missing and 103 cases for which poverty concentration was missing. Poverty estimates for school districts were based on Title I data provided to the U.S. Department of Education by the U.S. Census Bureau.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

Among the districts with technology-based distance education enrollments, a greater percentage of small districts than medium-sized or large districts had students enrolled in dual credit college-level courses offered through technology-based distance education (47 percent vs. 22 and 20 percent, respectively) (table 14). Also, a greater percentage of rural districts than urban and suburban districts with technology-based distance education had enrollments in dual credit college-level courses offered through distance education (48 percent vs. 24 and 30 percent, respectively). Additionally, among districts with technology-based distance education, greater percentages of districts in the Central region

and the West (48 and 44 percent, respectively) had students enrolled in dual credit college-level courses offered through distance education than did districts in the Northeast and Southeast (20 percent each).

There were an estimated 59,410 enrollments in dual credit college-level courses offered through technology-based distance education in 2004–05 (not shown in tables), which represents 12 percent of the total enrollments in technology-based distance education (table 14). The percentage that the enrollments in dual-credit courses represented among all enrollments in distance education was related to district metropolitan status, with rural districts higher than urban districts (26 percent vs. 2 percent).

The entities that delivered the dual credit college-level distance education courses included postsecondary institutions, public schools or school districts, and other entities. Dual credit college-level courses delivered through technology-based distance education were mostly provided by postsecondary institutions (table 15). Among the districts with students in dual credit college-level distance education courses, 92 percent had students who received college-level distance education courses from postsecondary institutions, while 25 percent of those districts had students enrolled in college-level courses delivered by the public schools or school districts.¹⁹

Table 15. Percentage distribution of public school districts indicating whether various entities delivered the dual credit college-level technology-based distance education courses in which students in their district were enrolled: 2004–05

Entity	Yes	No	Don't know
Postsecondary institutions.....	92	7	1!
Public school or school district.....	25	74	1!
Other entity ¹	2!	98	#

Rounds to zero.

! Interpret data with caution; the coefficient of variation is greater than 30 percent.

¹ Other responses included independent vendors, state board of education, and state online schools.

NOTE: Percentages in this table are based on the estimated 2,250 districts with students enrolled in dual credit college-level courses offered through technology-based distance education in 2004–05. 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.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

¹⁹Districts could have more than one entity delivering dual credit college-level distance education courses.

Advanced Placement and Dual Credit College-Level Courses Combined

While the 2002–03 survey asked only one question about both types of courses combined, the 2004–05 survey asked separate questions about AP and college-level courses. In order to make comparisons between 2002–03 and 2004–05, data for AP and dual credit college-level courses for 2004–05 were combined. Fifty-five percent of districts with students enrolled in technology-based distance education courses had students enrolled in one or both types of courses (i.e., AP and/or dual credit college-level courses) offered through distance education in 2004–05 (table 16).

During the 2004–05 school year, 59 percent of small districts with technology-based distance education had students enrolled in AP or college-level courses offered through distance education, as compared to 44 percent of medium-sized and 45 percent of large districts with technology-based distance education (table 16). Also, a greater percentage of rural districts than urban and suburban districts with technology-based distance education had students enrolled in such courses (61 percent vs. 41 and 48 percent, respectively).

When combined, enrollments in AP and dual credit college-level courses accounted for an estimated 76,940 technology-based distance education course enrollments in 2004–05 (not shown in tables). The number of combined AP and college-level enrollments represents 15 percent of all technology-based distance education enrollments in 2004–05 (table 16).

Between 2002–03 and 2004–05, no differences were observed in the percentage of all technology-based distance education enrollments that were in AP or college level dual-credit distance education courses (table 16).

Table 16. Percent of public school districts with students enrolled in technology-based distance education courses indicating that students regularly enrolled in the district were enrolled in Advanced Placement or dual credit college-level courses offered through distance education, and percent of all enrollments in technology-based education courses represented by enrollments in Advanced Placement or dual credit college-level courses offered through technology-based distance education, by district characteristics: 2002–03 and 2004–05

District characteristic	Percent of districts with students enrolled in Advanced Placement or dual credit college-level courses offered through technology-based distance education		Percent of all technology-based distance education enrollments that are in Advanced Placement or dual credit college-level distance education courses	
	2002–03	2004–05	2002–03	2004–05
All public school districts with students enrolled in technology-based distance education courses.....	50	55	14	15
District enrollment size				
Less than 2,500	53	59	24	19
2,500 to 9,999.....	40	44	10	12
10,000 or more	47	45	8	13!
Metropolitan status				
Urban.....	43	41	4	4
Suburban.....	45	48	12	14!
Rural.....	53	61	28	33
Region				
Northeast.....	43	46	10!	5!
Southeast.....	42	53	12	11
Central.....	50	59	13	18
West.....	56	53	18	23
Poverty concentration				
Less than 10 percent.....	49	56	16	26!
10 to 19 percent.....	47	57	18	16
20 percent or more	56	56	18	20

! Interpret data with caution; the coefficient of variation is greater than 30 percent.

NOTE: Percentages are based on unrounded data. Percents of districts with students enrolled in Advanced Placement or dual credit college-level courses offered through technology-based distance education are based on the estimated 5,470 districts with students enrolled in technology-based distance education courses in 2002–03 and 5,670 districts with students enrolled in technology-based distance education courses in 2004–05. For the 2002–03 study sample, there were 3 cases for which district enrollment size was missing and 112 cases for which poverty concentration was missing. For the 2004–05 study sample, there were 7 cases for which district enrollment size was missing and 103 cases for which poverty concentrations was missing. Percents of all technology-based distance education enrollments that are Advanced Placement or dual credit college-level distance education courses are based on the estimated 317,070 enrollments in technology-based distance education courses in 2002–03 and 506,950 enrollments in technology-based distance education courses in 2004–05. Poverty estimates for school districts were based on Title I data provided to the U.S. Department of Education by the U.S. Census Bureau.

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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

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6. Technologies Used for Delivering Distance Education Courses

Districts that reported offering technology-based 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 which one of the technologies was used as a primary mode of instructional delivery for the greatest number of distance education courses.

Technologies Used as the Primary Modes of Instructional Delivery for Any Technology-Based Distance Education Courses

In 2004–05, the technology used by the greatest percentage of districts with technology-based distance education as a primary mode of instructional delivery for any technology-based distance education courses was asynchronous Internet technology (58 percent) (table 17). In addition, two-way interactive video was used as a primary mode of instructional delivery by 47 percent of these districts, and Internet technologies using synchronous computer-based instruction were used as a primary delivery mode by 24 percent of these districts. One-way prerecorded video was used as a primary mode by 11 percent of districts with technology-based distance education, and other technologies (such as teleconferencing and CD-ROM) were used by 2 percent of these districts.²⁰

Among the districts with technology-based distance education, the percentage of districts that used various technologies as the primary modes of instructional delivery for any technology-based distance education courses varied by district size and metropolitan status. The percentage of these districts that used Internet technology with asynchronous computer-based instruction as a primary mode of delivery for any distance education courses increased with district size, from 53 percent of small districts to 71 percent of medium-sized districts and 78 percent of large districts with technology-based distance

²⁰ Percentages sum to more than 100 because some districts used different types of technologies as primary modes of delivery for different distance education courses.

education (table 17). However, a greater percentage of small districts than medium-sized or large districts with technology-based distance education used two-way interactive video technology as a primary mode of delivery for any distance education courses (53 percent vs. 31 and 28 percent, respectively).

Table 17. Percent of public school districts reporting that various technologies were used as primary modes of instructional delivery for any technology-based distance education courses in which students in their district were enrolled, by district characteristics: 2002–03 and 2004–05

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	
	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05
All public school districts with students enrolled in technology-based distance education courses	21	24	47	58	55	47	16	11	4	2
District enrollment size										
Less than 2,500.....	19	22	42	53	60	53	16	10	5	2!
2,500 to 9,999.....	21	28	60	71	45	31	15	14	3	2!
10,000 or more	31	32	71	78	33	28	18	17	6	3!
Metropolitan status										
Urban.....	22	22	68	85	39	19	20	18!	3!	1!
Suburban.....	24	29	58	68	39	32	14	12	4!	2!
Rural.....	19	22	40	48	64	60	16	10	5	3!
Region										
Northeast.....	19	26	46	62	54	33	8	10!	12!	2!
Southeast.....	30	29	52	65	48	43	19	17	5!	7!
Central.....	21	23	41	53	59	54	16	8	2!	1!
West.....	15	24	56	60	53	43	18	14	4!	2!
Poverty concentration										
Less than 10 percent.....	18	25	55	64	47	41	13	11	4!	1!
10 to 19 percent.....	25	26	42	52	55	53	17	9	4!	3!
20 percent or more.....	17	22	45	56	65	51	16	14	6!	3!

! Interpret data with caution; the coefficient of variation is greater than 30 percent.

¹ Synchronous refers to simultaneous or “real-time” interactions, 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 the estimated 5,470 districts with students enrolled in technology-based distance education courses in 2002–03 and 5,670 districts with students enrolled in technology-based distance education courses in 2004–05. Poverty estimates for school districts were based on Title I data provided to the U.S. Department of Education by the U.S. Census Bureau. 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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

In addition, among districts with technology-based distance education, a greater percentage of urban districts than suburban and rural districts, and a greater percentage of suburban districts than rural districts, used asynchronous Internet technology as a primary mode of delivery for any distance education courses (85 percent for urban districts, 68 percent for suburban districts, and 48 percent for rural districts) (table 17). However, among those districts with technology-based distance education, a greater percentage of rural districts than suburban and urban districts, and a greater percentage of suburban districts than urban districts, used two-way interactive video as a primary mode of delivery for any distance education courses (60 percent for rural districts, 32 percent for suburban districts, and 19 percent for urban districts).

Between 2002–03 and 2004–05, some changes were observed in the use of various technologies for any distance education courses. The use of Internet courses employing asynchronous instruction increased overall by 11 percentage points, from 47 percent of districts with technology-based distance education in 2002–03 to 58 percent of districts with technology-based distance education in 2004–05, making it the primary mode of technology-based distance education delivery in 2004–05 (table 17). At the same time, there was a decrease in the use of two-way interactive video, which was the primary mode in 2002–03, from 55 percent of districts with technology-based distance education in 2002–03 to 47 percent of districts with technology-based distance education in 2004–05.

Difference in Technology Use Within District Types

The use of various distance education technologies as a primary mode of instructional delivery for any distance education courses varied within district types. District enrollment size was associated with the types of technology used. Among small districts with technology-based distance education enrollments, Internet courses with asynchronous computer-based instruction and courses using two-way interactive video were the most frequently cited primary modes of instructional delivery for any technology-based distance education courses, with both technologies reported by 53 percent of small districts, compared with 2 to 22 percent for all the remaining technologies (table 17). In both medium-sized and large districts with technology-based distance education enrollments, Internet courses using asynchronous computer-based instruction was the most frequently cited technology used as a primary mode of instructional delivery, reported by 71 percent of medium-sized districts (vs. 2 to 31 percent for all remaining technologies) and 78 percent of large districts (vs. 3 to 32 percent for all remaining technologies).²¹

²¹ Districts could use different types of technologies as primary modes of instructional delivery for different distance education courses.

The metropolitan status of the district was also associated with the types of technologies used as a primary mode of distance education delivery. In both urban and suburban districts with students enrolled in technology-based distance education courses, Internet courses using asynchronous computer-based instruction was the most frequently reported technology, cited by 85 percent of urban districts (vs. 1 to 22 percent for all remaining technologies) and by 68 percent of suburban districts (vs. 2 to 32 percent for all remaining technologies) (table 17). In rural districts with technology-based distance education enrollments, two-way interactive video was the technology cited most often as a primary mode of delivery (60 percent vs. 3 to 48 percent for all remaining technologies).

Between 2002–03 and 2004–05, the observed change in the use of asynchronous Internet technologies varied within type of metropolitan status. Among urban districts with students enrolled in technology-based distance education, the use of asynchronous Internet courses as a primary mode of delivery for any distance education courses increased from 68 percent of urban districts in 2002–03 to 85 percent of urban districts in 2004–05 (table 17). Among suburban districts with technology-based distance education, the use of asynchronous Internet courses as a primary mode for delivery of any distance education courses increased from 58 percent in 2002–03 to 68 percent in 2004–05. No differences were observed in the percentages of rural districts with students in technology-based distance education courses that used asynchronous Internet technology between the two years.

Technologies Used as the Primary Mode of Instructional Delivery for the Greatest Number of Courses

Districts were also asked which one of the listed technologies was used as the primary mode of delivery for the greatest number of technology-based distance education courses. In 2004–05, two-way interactive video and asynchronous Internet technologies were about equally widespread among districts with technology-based distance education: 41 percent reported two-way interactive video and 40 percent reported Internet courses employing asynchronous computer-based instruction as being used for the greatest number of distance education courses (table 18). Figure 4 presents the percentage distribution of districts with technology-based distance education reporting that various technologies were used for the greatest number of distance education courses in their district.

Table 18. Percentage distribution of public school districts reporting that various technologies were used as the primary mode of delivery for the greatest number of technology-based distance education courses in which students in their district were enrolled, by district characteristics: 2002–03 and 2004–05

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	
	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05
All public school districts with students enrolled in technology-based distance education courses	9	13	34	40	49	41	7	4	1!	1!
District enrollment size										
Less than 2,500.....	8	13	29	34	54	48	7	4	1!	1!
2,500 to 9,999.....	9	14	47	56	38	26	5	4	1!	‡
10,000 or more	11	14	59	63	24	19	3	3	2!	1!
Metropolitan status										
Urban.....	9	8	56	76	32	13	2!	3!	1!	1!
Suburban.....	11	17	46	51	36	28	5	4!	1!	#
Rural.....	7	12	27	28	57	54	7	5	2!	1!
Region										
Northeast.....	6!	16	39	52	49	29	2!	3!	4!	‡
Southeast.....	14	15	39	44	39	32	7	6	1!	2!
Central.....	11	12	27	33	54	51	8	4!	1!	1!
West.....	4!	13	41	46	47	36	6!	4!	2!	1!
Poverty concentration										
Less than 10 percent.....	8	13	42	47	42	37	5!	3!	2!	#
10 to 19 percent.....	10	14	31	31	50	48	9	5	1!	2!
20 percent or more.....	8	12	29	40	57	43	4!	5!	2!	1!

Rounds to zero.

! Interpret data with caution; the coefficient of variation is greater than 30 percent.

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

¹ Synchronous refers to simultaneous or “real-time” interactions, whereas asynchronous is defined as not simultaneous.

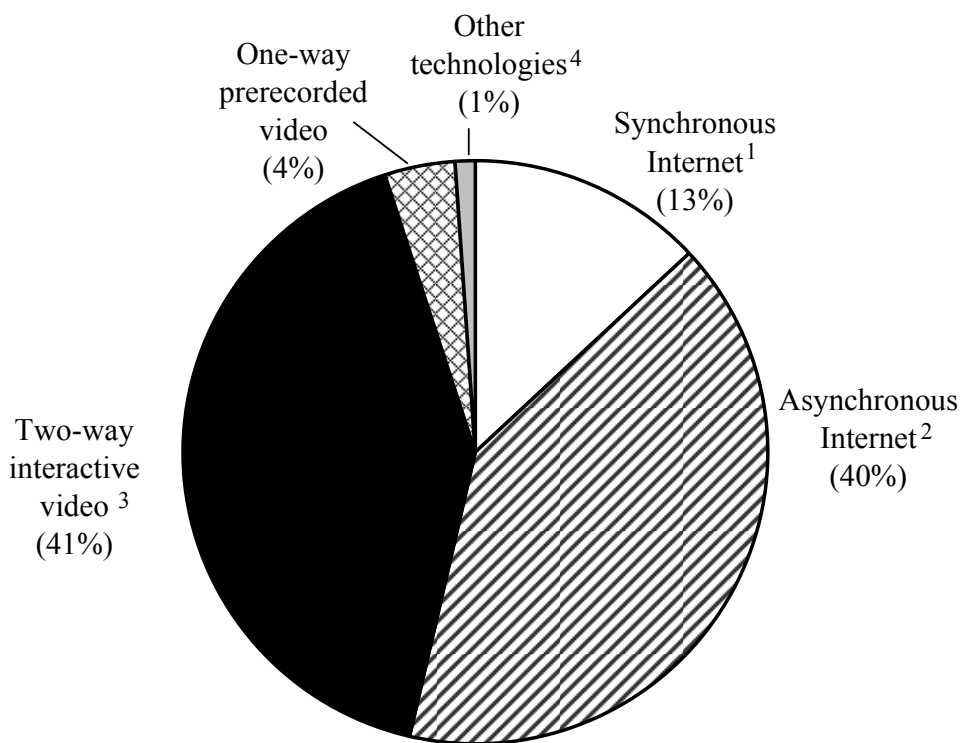
² Two-way interactive video refers to two-way video with two-way audio.

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 5,470 districts with students enrolled in technology-based distance education courses in 2002–03 and 5,670 districts with students enrolled in technology-based distance education courses in 2004–05. Poverty estimates for school districts were based on Title I data provided to the U.S. Department of Education by the U.S. Census Bureau. 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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

Figure 4. Percentage distribution of public school districts reporting that various technologies were used as the primary mode of delivery for the greatest number of technology-based distance education courses in which students in their district were enrolled: 2004–05



¹ Internet courses using synchronous (i.e., simultaneous or “real time”) computer-based instruction.

² Internet courses using asynchronous (i.e., not simultaneous) computer-based instruction.

³ Two-way interactive video refers to two-way video with two-way audio.

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

NOTE: Percentages are based on the estimated 5,670 districts with students enrolled in technology-based distance education courses in 2004–05. 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: 2004–05,” FRSS 89, 2005.

The percentage of districts with technology-based distance education that used various technologies as the primary mode of instructional delivery for the greatest number of distance education courses varied by district size, metropolitan status, and region. A greater percentage of large and medium-sized districts than small districts with technology-based distance education used asynchronous Internet technologies for the greatest number of distance education courses (63 and 56 percent, respectively, vs. 34 percent) (table 18). However, a greater percentage of small districts than medium-sized or large districts, and a greater percentage of medium-sized districts than large districts, used two-way interactive video for the greatest number of distance education courses, among districts with technology-based distance education (48 percent for small districts, 26 percent for medium-sized districts, and 19 percent for large districts).

In addition, among the districts with technology-based distance education, a greater percentage of urban than suburban and rural districts, and a greater percentage of suburban than rural districts, used asynchronous Internet technologies for the greatest number of distance education courses (76 percent for urban districts, 51 percent for suburban districts, and 28 percent for rural districts). However, among districts with technology-based distance education, a greater percentage of rural districts than suburban and urban districts, and a greater percentage of suburban districts than urban districts, used two-way interactive video for the greatest number of distance education courses (54 percent for rural districts, 28 percent for suburban districts, and 13 percent for urban districts). A greater percentage of districts with technology-based distance education in the Central region than such districts located in other regions of the country used two-way interactive video for the greatest number of distance education courses (51 percent vs. 29 to 36 percent).

Between 2002–03 and 2004–05, some changes occurred in the use of various technologies for delivery of the greatest number of distance education courses. The use of two-way interactive video for delivery of the greatest number of distance education courses decreased from 49 percent to 41 percent of districts with technology-based distance education enrollments, and the use of Internet asynchronous technologies increased from 34 percent to 40 percent of such districts (table 18).

Difference in Technology Use Within District Types

The use of distance education technologies as a primary mode of instructional delivery for the greatest number of distance education courses varied within district types. District enrollment size was associated with the types of technologies used. Among small districts with technology-based distance education enrollments, two-way interactive video technology was the most frequently cited technology used for the greatest number of distance education courses, with 48 percent of small districts selecting this technology compared with 1 to 34 percent for all the remaining technologies (table 18). Among medium-sized and large districts with technology-based distance education, asynchronous Internet technologies were the most frequently cited technologies used for the greatest number of distance education courses, with 56 percent of medium-sized districts selecting this technology compared with 4 to 26 percent for all remaining technologies, and 63 percent of large districts selecting this technology compared with 1 to 19 percent for all remaining technologies.

The type of technology used to deliver the greatest number of distance education courses in the district was also related to district metropolitan status. Among districts with technology-based distance education enrollments, asynchronous Internet technologies were used for the greatest number of

distance education courses in urban and suburban districts, with 76 percent of urban districts selecting this technology compared with 1 to 13 percent for all remaining technologies, and 51 percent of suburban districts selecting this technology compared with 4 to 28 percent for all remaining technologies. In rural districts with technology-based distance education, two-way interactive video was the technology used for the greatest number of distance education courses, with 54 percent of rural districts selecting this technology compared with 1 to 28 percent for all remaining technologies.

Between 2002–03 and 2004–05, the observed change in the use of technologies varied within type of metropolitan status. The percentage of urban districts with technology-based distance education that used asynchronous Internet courses as a primary mode of delivery for the greatest number of technology-based distance education courses increased by 20 percentage points (from 56 percent in 2002–03 to 76 percent in 2004–05) (table 18). In rural and suburban districts with technology-based distance education, no measurable change in their use of asynchronous Internet was observed. The percentage of urban districts with technology-based distance education that used two-way interactive video courses as a primary mode of delivery for the greatest number of technology-based distance education courses decreased by 19 percentage points (from 32 percent in 2002–03 to 13 percent in 2004–05), and the percentage of suburban districts with technology-based distance education that used this technology as a primary mode of delivery for the greatest number of technology-based distance education courses decreased by 8 percentage points (from 36 percent in 2002–03 to 28 percent in 2004–05). In rural districts with technology-based distance education, no measurable change in their use of two-way interactive video was observed.

7. Online Distance Education Courses

Districts with technology-based distance education were asked whether any students regularly enrolled in their district were enrolled in online distance education courses. Online distance education courses were defined as Internet courses using synchronous computer-based technology or Internet courses using asynchronous computer-based technology as primary modes of instructional delivery for any distance education courses in which students in their district were enrolled. Districts with student enrollments in online courses were then asked about the location where students accessed their online education. When districts indicated having students accessing online courses from home, the district provision or payment for a computer, an Internet service provider, or other items was explored.

Prevalence of Online Distance Education Courses

Seventy-one percent of districts with students enrolled in technology-based distance education courses in 2004–05 had students enrolled in online distance education courses (i.e., courses delivered over the Internet) (table 19).²² Prevalence of online courses was associated with district size, metropolitan status, and poverty concentration. Greater percentages of large and medium-sized districts than small districts with technology-based distance education had students enrolled in online distance education courses (87 and 82 percent vs. 66 percent, respectively). In addition, greater percentages of urban and suburban districts with technology-based distance education than such rural districts had students enrolled in online courses (91 and 82 percent vs. 60 percent, respectively). Among districts with technology-based distance education, a greater percentage of districts with low poverty concentration than districts with medium poverty concentration had students in online distance education courses (77 percent vs. 65 percent).

Between 2002–03 and 2004–05, there was an increase in the percentage of districts with technology-based distance education that had students enrolled in online distance education courses, from 58 percent of districts with technology-based distance education in 2002–03 to 71 percent of districts with technology-based distance education in 2004–05 (table 19).

²² The questionnaire instructed districts to indicate that they had online distance education courses if they indicated in the previous technology question that they had either Internet courses using synchronous computer-based instruction or Internet courses using asynchronous computer-based instruction.

Location Where Students Access Online Distance Education Courses

In 2004–05, the greatest percentage of districts with students in online distance education courses had students accessing online courses from school (86 percent) (table 19). Fifty-nine percent of districts with students in online distance education courses had students accessing online courses from home, and 8 percent had students accessing online courses from some other location.²³

Table 19. Percent of public school districts with students enrolled in online distance education courses, and percent of those public school districts indicating the access location of the online courses, by district characteristics: 2002–03 and 2004–05

District characteristic	Districts with students enrolled in online distance education courses ¹		Access location for online courses ²					
			School		Home		Other location	
	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05
All public school districts with students enrolled in technology-based distance education courses	58	71	92	86	60	59	8	8
District enrollment size								
Less than 2,500	53	66	95	90	55	54	6!	7
2,500 to 9,999	71	82	87	78	66	67	9	7
10,000 or more	80	87	87	79	77	74	17	15
Metropolitan status								
Urban	74	91	89	80	76	74	19	14!
Suburban	71	82	88	81	67	63	7	8
Rural	51	60	96	92	53	52	7!	6
Region								
Northeast	57	74	87	82	61	80	6!	5!
Southeast	67	74	96	90	63	53	8	8
Central	55	67	92	86	56	57	8	9
West	61	73	93	86	64	56	9!	6!
Poverty concentration								
Less than 10 percent	65	77	90	83	64	63	7	9
10 to 19 percent	56	65	93	88	60	58	7	5
20 percent or more	53	66	95	92	53	49	10!	6

! Interpret data with caution; the coefficient of variation is greater than 30 percent.

¹ Percentages are based on the estimated 5,470 districts with students enrolled in technology-based distance education courses in 2002–03 and 5,670 districts with students enrolled in technology-based distance education courses in 2004–05.

² Percentages are based on the estimated 3,190 districts with students enrolled in online distance education courses in 2002–03 and 4,000 districts with students enrolled in online distance education courses in 2004–05. Percentages sum to more than 100 because districts could have students accessing online courses from more than one location.

NOTE: Percentages are based on unrounded numbers. Poverty estimates for school districts were based on Title I data provided to the U.S. Department of Education by the U.S. Census Bureau.

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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

²³ Percentages sum to more than 100 because districts could have students accessing online courses from more than one location.

Among the districts with online distance education enrollments, the percentage of districts with students accessing online distance education courses from school varied by district size, metropolitan status, and poverty concentration. A greater percentage of small districts than medium-sized or large districts with online distance education enrollments had students accessing online distance education courses from school (90 percent vs. 78 and 79 percent, respectively) (table 19). In addition, a greater percentage of rural districts than urban or suburban districts with online distance education had students accessing online distance education courses from school (92 percent vs. 80 and 81 percent, respectively). Also, among districts with online distance education, a greater percentage of districts in high poverty areas than districts in low poverty areas had students accessing online courses from school (92 vs. 83 percent).

Accessing online courses from home also varied by district size, metropolitan status, and poverty concentration. Among districts with online distance education, a greater percentage of large districts than medium-sized or small districts had students accessing online courses from home (74 percent vs. 67 and 54 percent, respectively). In addition, a greater percentage of urban districts with online distance education enrollments had students accessing online courses from home than did rural districts with online distance education enrollments (74 percent vs. 52 percent). A greater percentage of districts in low poverty areas than districts in high poverty areas had students accessing online courses from home, among districts with online distance education enrollments (63 percent vs. 49 percent).

Between 2002–03 and 2004–05, among the districts with online distance education enrollments, the overall percentage of districts that had students accessing their online courses from school decreased from 92 percent to 86 percent of districts with online distance education courses (table 19). Among districts with online distance education enrollments, there was no change in the overall percentage of districts with students accessing online courses from home. However, an increase was observed in the percentage of districts in the Northeastern region of the country that had student accessing online courses from home, from 61 to 80 percent of districts with online distance education enrollments.

Districts' Provision of Infrastructure Needed to Access Online Courses From Home

Districts with students accessing online distance education courses from home were asked whether they provided or paid for various items for all or some of those students who accessed online courses from home. Among the 59 percent of districts with students accessing online distance education

courses from home in 2004–05, about a fifth (19 percent) of these districts provided or paid for a computer for all those students and 10 percent did so for some of those students (table 20). Additionally, 18 percent of these districts provided or paid for the Internet service provider for all those students, and 9 percent did so for some of those students.

Whether districts offered infrastructure support to their students was associated with district size. A quarter (25 percent) of small districts with students accessing online distance education from home provided or paid for computers for all students, as compared to 12 percent of medium-sized and 10 percent of large districts with online distance education accessed from home. Also, a greater percentage of small districts than large districts with students accessing online distance education from home provided or paid for an Internet service provider for all students (22 percent vs. 8 percent).

Between 2002–03 and 2004–05, there were no measurable changes in the percent of districts with online courses accessed from home that provided or paid for computers used to access those online distance education courses from home, either for all students or for some students (table 20). Similarly, no difference was detected in the percentage of such districts that provided or paid for the Internet service, either for all students or for some students accessing online distance education courses from home.

Table 20. Percent of public school districts with students accessing online distance education courses from home, and percent of those public school 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 and 2004–05

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			
	2002–03	2004–05	For all students		For some students		For all students		For some students		For all students		For some students	
			2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05
All public school districts with students enrolled in technology-based distance education courses	60	59	23	19	8	10	26	18	7	9	6	8	2!	2!
District enrollment size														
Less than 2,500	55	54	29	25	7!	8	31	22	7!	9!	7!	8	2!	3!
2,500 to 9,999	66	67	17	12	9	12	20	13	5!	10	5!	9	3!	1!
10,000 or more	77	74	10	10	11	14	14	8	9	13	5	9	4!	6
Metropolitan status														
Urban	76	74	9!	18!	16	12!	19!	18!	11!	11!	3!	11	7!	2!
Suburban	67	63	15	19	7!	7	19	16	6!	8	5!	7	1!	3!
Rural	53	52	33	20	8!	11	34	21	7!	11!	8!	8!	3!	2!
Region														
Northeast	61	80	14!	20	10!	12	27!	21	10!	13	5!	9!	1	‡
Southeast	63	53	30	26	6!	14	39	23	6!	11	4!	7!	2!	1!
Central	56	57	27	22	3	4!	25	18	2!	8!	9!	10	1!	2!
West	64	56	19	13!	15	14	20	14!	13!	9!	4!	5!	5!	5!
Poverty concentration														
Less than 10 percent	64	63	23	18	5!	11	24	15	4!	12	5!	9	#	2!
10 to 19 percent	60	58	21	16	6!	7	22	17	5!	9	5!	9!	2!	1!
20 percent or more	53	49	29	25	16!	14!	36	21!	14!	9!	9!	6!	5!	7!

Rounds to zero.

! Interpret data with caution; the coefficient of variation is greater than 30 percent.

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

¹ Percentages are based on the estimated 3,190 districts with students enrolled in online distance education courses in 2002–03 and 4,000 districts with students enrolled in online distance education courses in 2004–05.

² Percentages are based on the estimated 1,910 districts with students accessing online distance education courses from home in 2002–03 and 2,340 districts with students accessing online distance education courses from home in 2004–05.

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

NOTE: Poverty estimates for school districts were based on Title I data provided to the U.S. Department of Education by the U.S. Census Bureau.

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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

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8. Longitudinal Analysis of Change: 2002–03 to 2004–05

This chapter discusses changes in technology-based distance education in public school districts from the 2002–03 school year to the 2004–05 school year. The analysis is based on data from the two FRSS distance education surveys administered to the sample of districts that responded in both the 2002–03 and 2004–05 surveys (see appendix A for a more detailed discussion of the sample). Although the study was designed primarily as a cross-sectional study, the use of the overlapping sample provides a longitudinal component that can be used to analyze responses from the two surveys. Such analyses require repeated measurements for the same districts that would not otherwise be possible with independent cross-sectional samples.

This longitudinal analysis was based on the sample of 1,992 districts that responded in both years and represents the estimated 14,740 districts in the nation that existed in 2002–03 and still existed in 2004–05. The following sections examine changes in prevalence of technology-based distance education courses in individual public schools districts, as well as changes in the number of enrollments in courses offered through technology-based distance education. It also examines changes in technologies used as primary modes of instructional delivery.

Change in Prevalence of Technology-Based Distance Education Courses in Public School Districts

Among the estimated 14,740 districts in the nation that existed in both 2002–03 and 2004–05, about a quarter (26 percent) had students enrolled in distance education courses in both 2002–03 and 2004–05, and 52 percent did not have students enrolled in distance education courses in either 2002–03 or 2004–05 (table 21). Eleven percent of the districts did not have students enrolled in distance education courses in 2002–03 but did have such enrollments in 2004–05, and 11 percent of districts had students enrolled in distance education courses in 2002–03 but not in 2004–05.

Table 21. Percentage distribution of public school districts by use of technology-based distance education courses and district characteristics: 2002–03 and 2004–05

[Percentage distribution of districts]

District characteristic	Districts with technology-based distance education courses in 2002–03 and 2004–05	Districts with technology-based distance education courses in 2002–03 but not in 2004–05	Districts without technology-based distance education courses in 2002–03 but with technology-based distance education courses in 2004–05	Districts without technology-based distance education courses in 2002–03 and 2004–05
Total	26	11	11	52
District enrollment size				
Less than 2,500.....	27	10	10	53
2,500 to 9,999.....	21	11	12	55
10,000 or more	37	13	13	36
Metropolitan status				
Urban.....	14	8	10	68
Suburban.....	20	9	11	60
Rural	35	13	10	43
Region				
Northeast	13	7	8	72
Southeast	32	13	13	42
Central	35	12	10	42
West.....	22	10	12	56
Poverty concentration				
Less than 10 percent.....	24	10	11	55
10 to 19 percent.....	31	12	11	47
20 percent or more.....	31	12	12	46

NOTE: Percentages are based on unrounded numbers. Percentages are based on the estimated 14,740 districts existed in 2002–03 and still existed in 2004–05. Poverty estimates for school districts were based on Title I data provided to the U.S. Department of Education by the U.S. Census Bureau. 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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

Various district characteristics were related to whether the district had students enrolled in distance education courses in both 2002–03 and 2004–05, including district size, metropolitan status, region, and poverty concentration. Large districts represented a larger percentage of the districts with technology-based distance education in both 2002–03 and 2004–05 than medium-sized or small districts (37 percent vs. 21 and 27 percent, respectively) (table 21). In addition, rural districts represented 35 percent of districts with students enrolled in distance education courses in both school years, compared to 20 percent represented by suburban districts and 14 percent by urban districts. Also, districts in the Southeast and Central regions represented larger percentages of districts with students in distance

education courses in both school years than did districts in the Northeast and West (32 and 35 percent vs. 13 and 22 percent, respectively). Finally, districts with medium and high poverty concentration represented a greater percentage of districts that had distance education enrollments in both 2002–03 and 2004–05 than those with low poverty concentration (31 percent each vs. 24 percent, respectively).

Change in the Number of Enrollments in Technology-Based Distance Education Courses in Public School Districts

In order to further describe the change taking place in districts with regard to their use of technology-based distance education, change in the number of enrollments in technology-based distance education courses was analyzed. This analysis was based on the estimated 7,020 districts that reported having distance education enrollments in 2002–03 or 2004–05 (or both) and excluded districts that did not have distance education enrollments in either of the two years under study. Thirty-five percent of districts that did not have technology-based distance education enrollments in 2002–03 reported having 1 to 5 such enrollments in 2004–05, and 14 percent of those districts reported having 6 to 10 enrollments in 2004–05 (table 22). Five percent of districts without any technology-based distance education enrollments in 2002–03 had more than 100 such enrollments in 2004–05. Among districts that in 2002–03 had 1 to 5 distance education enrollments, 39 percent dropped distance education enrollments all together in 2004–05, and 31 percent still had 1 to 5 enrollments in 2004–05. About a third of districts with larger numbers of enrollments in 2002–03 tended to maintain their number of enrollments in 2004–05, with 34 percent of districts with 21 to 50 enrollments in 2002–03 continuing to report 21 to 50 enrollments in 2004–05, and 32 percent of districts with 51 to 100 enrollments in 2002–03 continuing to report 51 to 100 enrollments in 2004–05. Sixty-three percent of districts that had more than 100 enrollments in technology-based distance education courses in 2002–03 continued having more than 100 such enrollments in 2004–05, while 9 percent of those districts dropped technology-based distance education in 2004–05.

Table 22. Change in the number of enrollments in technology-based distance education courses in public school districts: 2002–03 and 2004–05

[Percentage distribution of districts]

Number of technology-based distance education enrollments in 2002–03	Number of technology-based distance education enrollments in 2004–05						
	No enrollments	1–5	6–10	11–20	21–50	51–100	More than 100
No enrollments	†	35	14	19	20	7	5
1–5	39	31	10	10	6	2!	1!
6–10	42	16	9!	14	15	3!	#
11–20	33	11!	14	21	13	2!	6
21–50	21	4!	9	21	34	8	2!
51–100	8!	#	3!	10!	35	32	12
More than 100.....	9	4!	1!	1!	10!	13	63

Rounds to zero.

† Not applicable.

! Interpret data with caution; the coefficient of variation is greater than 30 percent.

NOTE: Percentages are based on unrounded numbers. Percentages are based on the estimated 7,020 districts that had students enrolled in distance education courses in 2002–03 or 2004–05 or both. 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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

Change in Technology Used for the Greatest Number of Distance Education Courses

Further analysis focused on changes between 2002–03 and 2004–05 in the technologies used for the greatest number of distance education courses. This analysis was based on the estimated 3,870 districts with distance education in both 2002–03 and 2004–05. Among the districts that in 2002–03 used Internet with synchronous computer-based instruction as the primary mode of instructional delivery for the greatest number of courses, 36 percent continued using this technology most commonly in 2004–05, while 42 percent switched to Internet courses with asynchronous computer-based instruction (table 23). Among the districts that in 2002–03 used Internet courses with asynchronous computer-based instruction as the most common mode of instruction, 70 percent continued using this technology for the greatest number of courses in 2004–05, while 13 percent of those districts switched to Internet courses with synchronous computer-based instruction, and 15 percent switched to two-way interactive video as their most common mode.

Table 23. Change in the technologies used as primary modes of instructional delivery for the greatest number of distance education courses in which students in public school districts were enrolled: 2002–03 and 2004–05

[Percentage distribution of districts]

Technologies used in 2002–03	Technologies used in 2004–05				
	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
Internet courses using synchronous computer-based instruction ¹	36	42	21!	1!	#
Internet courses using asynchronous computer-based instruction ¹	13	70	15	2!	#
Two-way interactive video ²	8	7	82	2!	1!
One-way prerecorded video	9!	19!	13!	59	#
Other technologies ³	21!	27!	52!	#	#

Rounds to zero.

! Interpret data with caution; the coefficient of variation is greater than 30 percent.

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: Percentage distributions are based on the technology used as a primary mode of instructional delivery for the greatest number of distance education courses in 2002–03. Percentages are based on unrounded numbers. Percentages are based on the estimated 3,870 districts that had students enrolled in technology-based distance education courses in both 2002–03 and 2004–05. 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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

Among the districts that in 2002–03 used two-way interactive video as the primary mode of instructional delivery for the greatest number of courses, 82 percent continued using this technology as their most common mode in 2004–05 (table 23). Eight percent of these districts switched to Internet courses with synchronous computer-based instruction, and 7 percent switched to Internet courses with asynchronous computer-based instruction as their most common mode. Among the districts that in 2002–03 used one-way prerecorded video as the primary mode of instruction for the greatest number of courses, 59 percent continued using this technology as their most common mode in 2004–05.

Additional analyses examined technology usage in districts with distance education in either 2002–03 or 2004–05, but not in both school years. Among the estimated 1,580 districts that had technology-based distance education course enrollments in 2002–03 but no longer had such enrollments in 2004–05, the technologies most commonly used for the greatest number of distance education courses in 2002–03 were two-way interactive video (40 percent) and asynchronous Internet technologies (39 percent) (table 24). In addition, 10 percent used synchronous Internet technologies and 8 percent used one-way prerecorded video.

Table 24. Technologies used as primary modes of instructional delivery for the greatest number of distance education courses in districts that had technology-based distance education enrollments in 2002–03, but did not have technology-based distance education enrollments anymore in 2004–05

Technology	Percent of districts
Internet courses using synchronous computer-based instruction ¹	10
Internet courses using asynchronous computer-based instruction ¹	39
Two-way interactive video ²	40
One-way prerecorded video	8
Other technologies ³	3!

¹ Interpret data with caution; the coefficient of variation is greater than 30 percent.

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 1,580 districts that had students enrolled in technology-based distance education courses in 2002–03 but did not have technology-based distance education enrollments in 2004–05. 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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

Among the estimated 1,570 districts that did not have technology-based distance education course enrollments in 2002–03 but did have such enrollments in 2004–05, the technology used most commonly for the greatest number of distance education courses in 2004–05 was asynchronous Internet technologies (62 percent) (table 25). In addition, 19 percent used two-way interactive video and 14 percent used synchronous Internet technologies.

Table 25. Technologies used as primary modes of instructional delivery for the greatest number of distance education courses in districts that did not have technology-based distance education enrollments in 2002–03, but started using technology-based distance education in 2004–05

Technology	Percent of districts
Internet courses using synchronous computer-based instruction ¹	14
Internet courses using asynchronous computer-based instruction ¹	62
Two-way interactive video ²	19
One-way prerecorded video	2!
Other technologies ³	2!

! Interpret data with caution; the coefficient of variation is greater than 30 percent.

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 1,570 districts that had students enrolled in technology-based distance education courses in 2002–03 but did not have technology-based distance education enrollments in 2004–05. 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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

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9. Summary and Conclusions

Distance education in elementary and secondary grades has become an increasingly important element of the contemporary educational landscape, offering a way to help schools and school districts meet the increasing challenges of today's classrooms, including student demands for courses, and demand for individualized schedules. Technology-based distance education courses are considered the future of distance education offerings, with online technologies looked upon by some policymakers as offering the greatest promise (U.S. Department of Education 2004). A need for systematic data on the prevalence and development of distance education has become apparent, since many states do not collect systematic data on the distance education programs delivered to students in their states (National Forum on Education Statistics 2006).

This FRSS study of public school districts investigated the prevalence of technology-based distance education courses in public elementary and secondary schools for the 2004–05 school year. Specifically, the data presented in this report address the following general questions:

- How prevalent is technology-based distance education?
- How is technology-based distance education delivered and by whom?
- How do districts and schools differ in the provision and delivery of technology-based distance education?
- What changes have occurred in technology-based distance education since 2002–03?

How Prevalent Is Technology-Based Distance Education in Public School Districts and Schools?

The survey findings provide information on the prevalence of technology-based distance education in public school districts and public schools. During the 12-month 2004–05 school year, 37 percent of public school districts and 10 percent of all public schools nationwide had students enrolled in technology-based distance education courses (tables 1 and 2). These percentages represent an estimated 5,670 school districts and 9,050 public schools in the country. A quarter (25 percent) of districts that reported having students in technology-based distance education courses had students enrolled in

Advanced Placement (AP) courses offered through distance education (table 12), and 40 percent had students enrolled in dual credit college-level courses offered through distance education (table 14).

The survey also found that the prevalence of technology-based distance education enrollments in public schools varied by the instructional level of the school. Overall, 39 percent of public high schools, 20 percent of combined or ungraded schools, 5 percent of middle schools, and 1 percent of elementary schools in the nation had students enrolled in technology-based distance education courses (table 2). Among the public schools that had technology-based distance education enrollments, high schools represented 72 percent, combined or ungraded schools represented 16 percent, middle or junior high schools represented 8 percent, and elementary schools represented 3 percent of those schools (table 3).

There were an estimated 506,950 technology-based distance education enrollments in public school districts in 2004–05 (table 4). The majority of those distance education enrollments (61 percent) were at the high school level, 33 percent were in combined or ungraded schools, with the remaining enrollments in middle or junior high schools and in elementary schools (table 5). Three percent of all technology-based distance education enrollments were in AP courses (table 12) and 12 percent of all technology-based distance education enrollments were in dual credit college-level courses (table 14). The majority of districts with technology-based distance education (57 percent) reported distance education enrollments between 1 and 20, and 9 percent of such districts reported more than 100 distance education enrollments (table 6). The majority (71 percent) of districts with students enrolled in technology-based distance education planned to expand their distance education courses in the future (table 8).

The survey explored completion of courses offered via technology-based distance education. Sixty-six percent of technology-based distance education enrollments were reported as completed with a passing grade, and 6 percent were reported as completed without a passing grade (table 7). For 21 percent of technology-based distance education enrollments, their completion status was unknown.

How Is Technology-Based Distance Education Delivered and by Whom?

Postsecondary institutions were the leading providers of technology-based distance education courses, with 47 percent of districts with technology-based distance education reporting having students enrolled in distance education courses delivered by a postsecondary institution (table 9). Other

frequent providers among districts with technology-based distance education courses were other local school districts or schools in other districts within their state (33 percent) and state virtual schools within the district's state (24 percent).

Among districts with Advanced Placement courses offered through technology-based distance education, the courses were most frequently provided by postsecondary institutions (36 percent of districts with AP courses), public schools and school districts (36 percent of districts with AP courses), and state virtual schools (35 percent of districts with AP courses) (table 13). Similarly, among districts with dual credit college-level distance education courses offered through technology-based distance education, the courses were most frequently provided by postsecondary institutions (92 percent of districts with these courses) (table 15). A quarter of districts with dual credit college-level courses had students enrolled in college-level courses delivered by a public school or school district.

The survey explored technologies that were used as a primary mode of instructional delivery for any distance education courses to public schools students. Asynchronous Internet technology was used by the greatest percentage of districts with technology-based distance education (58 percent) to deliver any distance education courses (table 17). In addition, two-way interactive video was used as a primary mode of instructional delivery by 47 percent of districts with technology-based distance education. Synchronous Internet technologies were reported by 24 percent of districts with technology-based distance education, and one-way prerecorded video was reported by 11 percent of districts as primary modes of instructional delivery for any distance education courses. The survey also obtained information about which one of the technologies was used as the primary mode of instructional delivery for the greatest number of distance education courses. Districts with technology-based distance education used two-way interactive video and Internet-based asynchronous technologies about equally as the most common modes, with 41 percent of districts with technology-based distance education reporting two-way interactive video and 40 percent of these districts reporting asynchronous Internet instruction (table 18).

Use of online distance education courses (i.e., courses delivered over the Internet) was also explored in more depth. The survey found that 71 percent of districts with students enrolled in technology-based distance education courses had students enrolled in online courses, which were most frequently accessed from school (86 percent of districts with enrollments in online courses) (table 19). Additionally, 59 percent of the districts with online distance education enrollments reported that students accessed online courses from home, and 8 percent reported that students accessed online courses from some other location. Nineteen percent of districts with students accessing online distance education courses from home provided or paid for a computer for all those students, and 10 percent did so for some students (table 20). Eighteen percent of districts with students accessing online courses from home

provided or paid for the Internet service provider for all of those students, and 9 percent did so for some students.

How Do Public School Districts and Schools Differ in the Provision and Delivery of Technology-Based Distance Education?

The survey found some differences in the provision and delivery of technology-based distance education associated with various district characteristics, including district enrollment size, metropolitan location, region, and poverty concentration.

Greater percentages of large districts than medium-sized or small districts had students enrolled in technology-based distance education courses (50 percent vs. 35 and 37 percent, respectively) (table 1). Among the districts that had technology-based distance education enrollments, district size was related to districts having large numbers of distance education enrollments, with 45 percent of large districts reporting more than 100 enrollments in technology-based distance education courses, as compared to 13 percent of medium-sized districts and 5 percent of small districts (table 6). Greater percentages of large districts than small districts with technology-based distance education had courses delivered by other schools in their districts, by state virtual schools in their state or in another state, and by independent vendors (table 10). Also, greater percentages of large and medium-sized districts than small districts with technology-based distance education used asynchronous Internet technology as a primary mode of delivery for any technology-based distance education courses (78 and 71 percent vs. 53 percent, respectively) (table 17), as well as for the greatest number of technology-based distance education courses (63 and 56 percent vs. 34 percent, respectively) (table 18). Finally, large districts more often than medium-sized or small districts with technology-based distance-education enrollments planned further expansion of their technology-based distance education courses (86 percent vs. 69 and 70 percent, respectively) (table 8).

On the other hand, a greater percentage of schools in small districts than in medium-sized or large districts had students enrolled in technology-based distance education courses (16 percent of schools in small districts vs. 7 percent in both medium and large districts) (table 2). Among the districts with students in technology-based distance education courses, small districts more often than large districts reported their distance education course completions as being with a passing grade (table 7). A greater percentage of small districts than medium-sized or large districts with technology-based distance

education had student enrollments in dual credit college-level distance education courses (47 percent vs. 22 and 20 percent, respectively) (table 14). Also, a greater percentage of small districts than medium-sized or large districts with technology-based distance education used postsecondary institutions as providers of technology-based distance education courses delivered to their students (51 percent vs. 40 and 33 percent, respectively) (table 10). A greater percentage of small districts than medium-sized or large districts with technology-based distance education used two-way interactive video technology for any distance education courses (53 percent vs. 31 and 28 percent, respectively) (table 17), as well as for the greatest number of distance education courses (48 percent vs. 26 and 19 percent, respectively) (table 18). Finally, among the districts with students accessing online distance education from home, approximately a quarter of small districts provided or paid for computers (25 percent) or Internet service providers (22 percent) for all those students, as compared to 8 to 13 percent of medium-sized and large districts that provided this kind of support to their students (table 20).

The metropolitan status of the school district was associated with whether districts and schools had students in technology-based distance education. A greater percentage of rural districts than suburban or urban ones had students enrolled in technology-based distance education courses (45 percent vs. 32 and 25 percent, respectively) (table 1). Also, a greater percentage of schools in rural districts than suburban or urban districts had students enrolled in technology-based distance education courses (16 percent vs. 9 and 5 percent, respectively) (table 2). Among the districts with technology-based distance education enrollments, rural districts more often than urban districts had students enrolled in technology-based distance education courses that were delivered by postsecondary institutions (table 10). In addition, among the districts with technology-based distance education, a greater percentage of rural districts than urban and suburban ones had students enrolled in AP courses or dual credit college-level courses delivered via technology-based means (61 percent vs. 41 and 48 percent) (table 16). Two-way interactive video was a primary mode of delivery for any technology-based distance education course in 60 percent of rural districts, compared to 32 percent of suburban districts and 19 percent of urban districts with technology-based distance education (table 17). Two-way video technology was also a primary mode of delivery for the greatest number of technology-based distance education courses more often in rural districts (54 percent) than in suburban districts (28 percent) and urban districts (13 percent) with technology-based distance education (table 18).

Among the districts with technology-based distance education, urban districts more frequently had large numbers of technology-based distance education enrollments (more than 100 enrollments) than did suburban or rural districts (34 percent vs. 11 and 5 percent, respectively) (table 6). At the same time, urban districts reported the highest percentages of course enrollments with unknown course completion status (46 percent), as compared to rural districts (7 percent) (table 7). Asynchronous

Internet technologies were the predominant mode of technology-based distance education course delivery, and were used in a greater percentage of urban districts than in suburban or rural districts with technology-based distance education as a primary mode of delivery for both any distance education courses (85 percent vs. 68 and 48 percent, respectively) (table 17), and the largest number of distance education courses (76 percent vs. 51 and 28 percent, respectively) (table 18). Finally, among the districts with technology-based distance education, a greater percentage of urban districts planned to expand their technology-based distance education offerings than suburban or rural districts (86 percent vs. 71 and 69 percent, respectively) (table 8).

What Changes Have Occurred in Technology-Based Distance Education Since 2002–03?

Data for the 2002–03 and 2004–05 school years indicate that about the same percentage of districts had technology-based distance education enrollments in the two years (36 percent in 2002–03 and 37 percent in 2004–05) (table 1), and that 9 percent of public schools in 2002–03 and 10 percent of public schools in 2004–05 had distance education enrollments (table 2). At the same time, the number of enrollments in technology-based distance education courses increased substantially, from an estimated 317,070 enrollments in 2002–03 to 506,950 enrollments in 2004–05 (table 4).

Longitudinal analysis of prevalence data²⁴ revealed that within a substantial percentage of districts, there were enrollments in distance education in one of the years but not in the other year. Thus, while about a quarter of districts (26 percent) had students enrolled in technology-based distance education courses in both school years, 11 percent of districts did not have any students enrolled in distance education courses in 2002–03 but had distance education enrollments in 2004–05, and another 11 percent of districts had distance education enrollments in 2002–03 but not in 2004–05 (table 21). Fifty-two percent of districts did not have students enrolled in technology-based distance education courses in either of the two years.

Further analysis of longitudinal data based on the districts that had technology-based distance education in one or both school years indicated that about a third (35 percent) of districts that did not have technology-based distance education enrollments in 2002–03 started with 1 to 5 such enrollments in 2004–05, and 14 percent of districts without technology-based distance education in 2002–

²⁴Longitudinal analysis of change was based on the estimated 14,740 districts in the nation that existed in 2002–03 and still existed in 2004–05 (see appendix A for more information).

03 had 6 to 10 enrollments in 2004–05 (table 22). Five percent of districts without any technology-based distance education enrollments in 2002–03 had more than 100 distance education enrollments in 2004–05. Among districts that in 2002–03 had a small number of distance education enrollments (1 to 5 enrollments), 39 percent dropped technology-based distance education enrollments all together in 2004–05, and 31 percent still had 1 to 5 enrollments in 2004–05. About a third of districts with larger numbers of distance education enrollments in 2002–03 tended to maintain their number of enrollments in 2004–05. Thus, 34 percent of districts with 21 to 50 distance education enrollments in 2002–03 continued to report 21 to 50 enrollments in 2004–05, and 32 percent of districts with 51 to 100 distance education enrollments continued to report 51 to 100 enrollments in 2004–05. Among districts that in 2002–03 had more than 100 distance education enrollments in technology-based distance education courses, 63 percent continued having more than 100 distance education enrollments in 2004–05, while 9 percent of those districts dropped technology-based distance education in 2004–05.

Longitudinal analysis of the data for districts with technology-based distance education in both school years indicated that 82 percent of districts that used two-way interactive video as the most common mode of instructional delivery for the greatest number of technology-based distance education courses in 2002–03 continued using this technology as their most common mode in 2004–05, while 7 percent of these districts switched to asynchronous Internet courses, and another 8 percent switched to synchronous Internet courses as their most common mode (table 23). Seventy percent of districts that used asynchronous Internet technology as their most common mode in 2002–03 continued using this technology as their most common mode in 2004–05, while 15 percent of these districts switched to two-way interactive video, and 13 percent switched to synchronous Internet courses as their most common mode in 2004–05.

Further analysis was conducted of the technologies used by districts as most common modes to deliver the greatest number of courses. This analysis revealed that 40 percent of districts with technology-based distance education courses in 2002–03 but not in 2004–05 used two-way interactive video as their most common mode of instruction, 39 percent of such districts used asynchronous Internet courses, 10 percent used synchronous Internet courses, and 8 percent used one-way prerecorded video in 2002–03 (table 24). Sixty-two percent of districts that did not have technology-based distance education enrollments in 2002–03 but reported such enrollments in 2004–05 used asynchronous Internet technologies as the most common mode of instruction, 19 percent of such districts used two-way interactive video, and 14 percent used synchronous Internet technologies in 2004–05 (table 25).

Conclusions

Findings from the 2002–03 and 2004–05 surveys suggest that technology-based distance education has established its presence in the nation’s public schools. Rapid technological developments and widespread availability of the Internet in public schools made online education increasingly accessible and common among schools and districts. However, more traditional video-based technologies remain widely used as well. Also, although postsecondary institutions are the leading providers of distance education to public school districts and schools, districts themselves increasingly provide distance education courses to students, and increasingly use educational content provided by their state virtual schools.

References

- Arafeh, S. (2004). *The Implications of Information and Communications Technologies for Distance Education: Looking Toward the Future*. Arlington, VA: SRI International.
- Berge, Z.L., and Clark, T. (2005). *Virtual Schools: Planning for Success*. New York: Teachers College Press.
- Borja, R.R. (2005, May 5). Cyber Schools' Status. *Education Week*, 24(35): 22-23.
- Borja, R.R. (2007, March 30). Students Opting for AP Courses Online. *Education Week*, 26(31): 1, 16, 18.
- Cavanaugh, S. (2006, October 25). To Tailor Schedules, Students Log in to Online Classes. *Education Week*, 26(9):1, 24.
- Clark, T. (2001). *Virtual Schools: Trends and Issues. A Study of Virtual Schools in the United States*. San Francisco: Distance Learning Network, WestEd.
- Clark, T. (2003). Virtual and Distance Education in American Schools. In M. Moore and W. Andersen (Eds.), *Handbook of Distance Education* (pp. 1-34). Mahwah, NJ: Lawrence Erlbaum Associates.
- Dillon, S. (2006, October 20). No Test Tubes? Debate on Virtual Science Classes. *New York Times*.
- Doherty, K.M. (2002, May 9). Students Speak Out. *Education Week*. Retrieved December 12, 2002, from <http://www.edweek.org/sreports/tc02>.
- eSchool News*. (2006, October). "Districts' Virtual Schools Run Afoul of State Rules." Retrieved October 2, 2006, from www.eschoolnews.com.
- Interactive Educational Systems Design. (2002). *Online Courses and Other Types of Online Learning for High School Students*. New York: Apex Learning & Blackboard Inc.
- Kennedy-Manzo, K. (2002, May 9). Sizing Up Online Content. *Education Week*. Retrieved December 12, 2002, from <http://www.edweek.org/sreports/tc02>.
- Lewis, L., Alexander, D., and Farris, E. (1997). *Distance Education in Higher Education Institutions* (NCES 98-062). National Center for Education Statistics, U.S. Department of Education. Washington, DC.
- Lewis, L., Snow, K., Farris, E., and Levin, D. (1999). *Distance Education at Postsecondary Education Institutions: 1997-98* (NCES 2000-013). National Center for Education Statistics, U.S. Department of Education. Washington, DC.
- McDermon, L. (2005-06). Distance Learning: It's Elementary! *Learning and Leading with Technology: The ISTE Journal of Educational Technology Practice and Policy*, 33(4): 28.
- Miller, P. (2007, April 4). Virtual Learning Still Going Strong. *Education Week*. Retrieved April 19, 2007, from <http://www2.edweek.org/rc/articles/2007/04/09/sow0405.h26.html>.

- National Forum on Education Statistics. (2006). *Forum Guide to Virtual Education: In Search of High Quality Data to Support Distance Learning* (NFES 2006-803). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.
- Picciano, A.G., and Seaman, J. (2007). *K-12 Online Learning: A Survey of U.S. School Districts Administrators*. Needham, MA: The Sloan Consortium.
- Sable, S., and Hill, J. (2006). *Overview of Public Elementary and Secondary School Students, Staff, Schools, School Districts, Revenues, and Expenditures: School Year 2004-05 and Fiscal Year 2004* (NCES 2007-309). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC. Available online at www.edpubs.org or www.bookstore.gpo.gov/.
- Setzer, C.J., and Lewis, L. (2005). *Distance Education Courses for Public Elementary and Secondary School Students: 2002-03* (NCES 2005-010). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.
- Southwick, J. (2003). Distance Education in the Rural K-12 Environment. *Computers in the Schools* 20(30): 27-32.
- Technology Counts: 10th Annual Report of the Editorial Projects in Education Research Center. *Education Week*, 26(30). Retrieved July 12, 2007, from <http://www.edweek.org/ew/toc/2007/03/29/index.html>.
- Thomas, W.R. (1999). *Electronic Delivery of High School Courses: Status, Trends, and Issues*. Atlanta, GA: Southern Regional Education Board.
- Trotter, A. (2002, May 9). E-Learning Goes to School. *Education Week*. Retrieved December 12, 2002, from <http://www.edweek.org/sreports/tc02>.
- U.S. Department of Education, Office of Educational Technology. (2004). *Toward a New Golden Age in American Education: How the Internet, the Law and Today's Students are Revolutionizing Expectations*. Washington, DC: Author.
- U.S. Department of Education, National Center for Education Statistics, Common Core Data retrieved November 26, 2007, from http://nces.ed.gov/programs/digest/d06/tables/dt06_036.asp.
- Waits, T., and Lewis, L. (2003). *Distance Education at Degree-Granting Postsecondary Institutions: 2000-2001* (NCES 2003-017). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.
- Wells, J., and Lewis, L. (2006). *Internet Access in U.S. Public Schools and Classrooms: 1994-2005* (NCES 2007-020). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.
- Wildavsky, B. (2001, October 15). Want More From High School? *usnews.com*. Retrieved October 21, 2002, from <http://www.usnews.com/usnews/edu/elearning/articles/k12.htm>.
- Yamashiro, K., and Zucker, A. (1999). *An Expert Panel Review of the Quality of Virtual High School Courses: Final Report*. Arlington, VA: SRI International.

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 in 2004–05 consisted of 2,312 public school districts in the 50 states and the District of Columbia. It was selected from the 2003–04 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 14,063 regular public school districts and 1,513 “other education agencies” with at least one charter school (referred to here as charter school districts). 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). Also, charter school districts were “other education agencies” (i.e., districts with Education Agency type 7 on the CCD) that, when matched against the corresponding 2003–04 CCD Public School Universe file, had at least one charter school (i.e., had at least one school for which CHARTR03 = 1). Excluded from the sampling frame were districts in the outlying U.S. territories and regular districts with no enrollments or missing enrollments.¹ The sample of 2,312 districts included 2,211 regular school districts and 101 charter school

¹ Charter school districts were included even if enrollment data were missing.

districts. To allow for longitudinal analyses, the sample was designed to maximize overlap with the sample for the FRSS survey on distance education courses in 2002–03.² Ninety-seven percent of the districts in the sample for the 2004–05 survey were also in the sample for the 2002–03 survey.³ Although the study was designed primarily as a cross-sectional study, the use of the overlapping sample provides a longitudinal component that can be used to simultaneously analyze responses from the two surveys. Such analyses require repeated measurements for the same districts that would not otherwise be possible with independent cross-sectional samples.

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).⁴ Districts in the frame were then sorted by type of locale (city, urban fringe, town, rural)⁵ and region (Northeast, Southeast, Central, West) to induce additional implicit stratification.

Data Collection and Response Rates

Questionnaires and cover letters for the 2004–05 study were mailed to the superintendent of each sampled district in November 2005. 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 was completed at the end of May 2006. Telephone follow-up for quality control and data clarification was completed in November 2006.

²The sample for the FRSS survey on distance education courses in 2002–03 used the same sample design and 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.

³Of the 2,312 districts selected for the 2004–05 distance education survey, 2,242 districts had also been selected for the 2002–03 distance education survey.

⁴Poverty estimates for school districts were based on Title I data provided to the U.S. Department of Education by the U.S. Census Bureau and contained in U.S. Department of Commerce, U.S. Census Bureau, Current Population Survey (CPS) “Small Area Income and Poverty Estimates, Title I Eligibility Database, 2002.” For detailed information on the methodology used to create these estimates, please refer to www.census.gov/hhes/www/saie/index.html. The sampling categories were collapsed for analysis; see the section of this report on Definitions of Analysis Variables for more details.

⁵The 2003–04 CCD file contains two “urbanicity” variables: a three-category variable for metropolitan status (MSC03), and an eight-category variable for type of locale (LOCALE03). Type of locale was collapsed into four categories (city, urban fringe, town, and rural) and used for sampling, while metropolitan status was used for analysis (called urban, suburban, and rural for this report; see the section of this report on Definitions of Analysis Variables for more details).

Of the 2,312 districts in the sample, 22 districts were found to be ineligible for the survey for some reason. Of these 22 districts, 13 were found to be ineligible for the survey because they no longer existed, and 6 were found to be ineligible because they were merged (2 were merged with another sampled district and 4 were consolidated with another district not sampled for this study). Another three districts were found to be ineligible because they did not meet some other criteria for inclusion in the sample (e.g., they were administrative arms of a Board of Education). This left a total of 2,290 eligible districts in the sample. Completed questionnaires were received from 2,176 districts, or 95.0 percent of the eligible districts (table A-1). Of the districts that completed the survey, 35 percent completed it via the Web, 38 percent completed it by mail, 10 percent completed it by fax, and 17 percent completed it by telephone.⁶

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 technology-based distance education courses in 2002–03 and 2004–05, by district characteristics

District characteristic	Total sample							
	Respondents (unweighted)				National estimate (weighted)			
	2002–03		2004–05		2002–03		2004–05	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All public school districts.....	2,158	100	2,176	100	15,040	100	15,190	100
District enrollment size								
Less than 2,500.....	1,039	48	1,013	47	11,080	74	11,120	74
2,500 to 9,999.....	722	34	740	34	3,100	21	3,090	21
10,000 or more.....	394	18	416	19	820	5	850	6
Metropolitan status								
Urban.....	282	13	296	14	1,220	8	1,530	10
Suburban.....	1,052	49	1,132	52	6,150	41	6,700	44
Rural.....	824	38	748	34	7,660	51	6,950	46
Region								
Northeast.....	459	21	466	21	3,040	20	2,910	19
Southeast.....	355	16	357	16	1,750	12	1,750	12
Central.....	700	32	700	32	5,390	36	5,650	37
West.....	644	30	653	30	4,850	32	4,880	32
Poverty concentration								
Less than 10 percent.....	751	37	842	41	4,850	35	5,210	38
10 to 19 percent.....	776	38	746	36	5,330	38	5,070	37
20 percent or more.....	519	25	485	23	3,690	27	3,330	24

See notes at end of table.

⁶In 2002–03, of the districts that completed the survey, approximately 38 percent completed it via mail, 35 percent via the Web, 17 percent via phone, and 10 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 technology-based distance education courses in 2002–03 and 2004–05, by district characteristics—Continued

District characteristic	Districts with students regularly enrolled in technology-based distance education courses							
	Respondents (unweighted)				National estimate (weighted)			
	2002–03		2004–05		2002–03		2004–05	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All public school districts.....	811	100	802	100	5,470	100	5,670	100
District enrollment size								
Less than 2,500.....	380	47	365	46	4,050	74	4,150	74
2,500 to 9,999.....	232	29	238	30	1,010	18	1,070	19
10,000 or more.....	199	25	198	25	410	7	430	8
Metropolitan status								
Urban.....	101	12	109	14	290	5	380	7
Suburban.....	334	41	377	47	1,680	31	2,120	37
Rural.....	376	46	316	39	3,500	64	3,160	56
Region								
Northeast.....	109	13	113	14	640	12	630	11
Southeast.....	182	22	183	23	790	15	800	14
Central.....	295	36	283	35	2,490	46	2,550	45
West.....	225	28	223	28	1,540	28	1,690	30
Poverty concentration								
Less than 10 percent.....	247	31	293	37	1,610	30	1,840	34
10 to 19 percent.....	331	41	288	37	2,220	41	2,140	40
20 percent or more.....	223	28	204	26	1,560	29	1,440	27

NOTE: For the FRSS 2002–03 study sample, there were 3 cases for which district enrollment size was missing and 112 cases for which poverty concentration was missing. For the FRSS 2004–05 study sample, there were 7 cases for which district enrollment size was missing and 103 cases for which poverty concentration was missing. Detail may not sum to totals because of rounding or missing data for district characteristics. Poverty estimates for school districts were based on Title I data provided to the U.S. Department of Education by the U.S. Census Bureau. 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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

The weighted response rate was 95.6 percent. The weighted number of eligible districts in the survey represents 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 15,576 districts in the sampling frame to an estimated 15,190 because some of the districts were determined to be ineligible for the FRSS survey during data collection.

There were 89,610 schools in the nation in the year 2004–05 (table A-2). Of those, 49,900 were elementary schools, 15,710 were middle or junior high schools, 16,600 were high schools, and 7,400 were combined or ungraded schools.

Table A-2. Number of schools in the nation, by instructional level and district characteristics: 2002–03 and 2004–05

District characteristic	Number of schools									
	All instructional levels		Elementary schools		Middle or junior high schools		High schools		Combined or ungraded schools ¹	
	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05
All public school districts....	89,310	89,610	50,880	49,900	15,520	15,710	16,610	16,600	6,310	7,400
District enrollment size										
Less than 2,500.....	30,580	30,220	14,300	13,270	5,310	5,310	7,490	7,420	3,480	4,220
2,500 to 9,999.....	26,300	25,810	16,130	15,800	4,620	4,550	4,350	4,190	1,200	1,270
10,000 or more.....	32,390	33,270	20,440	20,670	5,590	5,780	4,760	4,920	1,610	1,900
Metropolitan status										
Urban.....	20,400	20,840	12,700	12,720	3,240	3,350	3,090	3,380	1,380	1,390
Suburban.....	40,430	43,210	23,870	24,910	7,480	8,080	7,010	7,590	2,060	2,640
Rural.....	28,480	25,560	14,310	12,270	4,790	4,280	6,510	5,640	2,870	3,380
Region										
Northeast.....	16,460	17,220	10,230	10,470	2,750	2,900	2,620	2,700	860	1,160
Southeast.....	18,840	19,650	10,620	10,930	3,540	3,590	3,390	3,450	1,290	1,680
Central.....	25,620	24,640	14,410	13,240	4,440	4,530	4,970	4,730	1,810	2,140
West.....	28,390	28,100	15,620	15,270	4,790	4,680	5,630	5,720	2,360	2,430
Poverty concentration										
Less than 10 percent.....	27,910	29,770	16,720	17,100	5,300	5,590	4,750	5,170	1,130	1,910
10 to 19 percent.....	33,230	32,760	18,630	18,140	5,980	6,020	6,380	6,070	2,240	2,530
20 percent or more.....	26,090	23,860	15,060	13,380	4,080	3,760	4,770	4,330	2,180	2,390

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

NOTE: For the FRSS 2002–03 study sample, there were 3 cases for which district enrollment size was missing and 112 cases for which poverty concentration was missing. For the FRSS 2004–05 study sample, there were 7 cases for which district enrollment size was missing and 103 cases for which poverty concentration was missing. Detail may not sum to totals because of rounding or missing data for district characteristics.

Poverty estimates for school districts were based on Title I data provided to the U.S. Department of Education by the U.S. Census Bureau.

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 Students: 2002–03,” FRSS 84, 2003; “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

Comparisons With the 2002–03 FRSS Distance Education Survey

In addition to providing full statistical analysis of the data from the 2004–05 FRSS distance education survey, the current report also compares the 2004–05 data to the baseline data collected in the 2002–03 FRSS distance education survey. Two types of comparisons are possible with the FRSS data. The first type involves comparisons of the cross-sectional estimates for the two time periods. Cross-sectional comparisons reflect the net change in a given characteristic across years including any changes in the underlying population. Findings from the 2002–03 survey were presented in a previous NCES report (Setzer and Lewis 2005) and can be used for cross-sectional comparisons. However, the enrollment

estimates for 2002–03 in the present report differ from those previously published due to extensive data quality control procedures in place during data collection for the 2004–05 survey. When a district reported distance education enrollments for 2004–05 that were very different from those they reported for 2002–03, the district was contacted for verification of enrollment data for both school years. During these data clarification calls, some districts revised their enrollment data for 2002–03. Those revised estimates are presented in the tables of the current report.

The current report also provides longitudinal analysis of change between 2002–03 and 2004–05. The longitudinal analysis is based on data from the two FRSS distance education surveys, with the districts that existed in 2002–03 and still existed in 2004–05 included in the analysis. Districts that existed in 2002–03 and ceased to exist by 2004–05, as well as districts that did not exist in 2002–03 but were established by 2004–05, were excluded from this analysis. Unlike cross-sectional comparisons, longitudinal comparisons provide estimates of gross change within the same districts. The estimates of longitudinal change presented in this report were produced based on a set of weights designed to represent the population of districts that existed in 2002–03 and that still existed in 2004–05.

Imputation for Item Nonresponse

Data were imputed for all missing questionnaire data. These 19 items are listed in table A-3. The missing items included both numerical data, such as counts of enrollments in Advanced Placement courses offered through distance education, and categorical data, such as which technologies were used as primary modes of instructional delivery for distance education courses. Several questions contained multiple data items. These multiple items were imputed as a group to preserve their correlation. The missing data were imputed using a “hot-deck” approach to obtain a “donor” district from which the imputed values were derived.⁷ 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 enrollments in advanced placement courses offered through distance education) and dividing that number by the total number of enrollments in distance education in the donor district. This ratio was then multiplied by the total number of enrollments in distance education in the recipient

⁷This is the same imputation approach as was used in the first Distance Education survey (see Setzer and Lewis 2005, p. A-7).

district to provide an imputed value. All missing items for a given district were imputed from the same donor whenever possible.

Table A-3. Percent of unweighted and weighted cases with imputed data, by questionnaire items: 2004–05

Questionnaire item	Respondent sample (unweighted)	National estimate (weighted)
Q6A Online charter school in district delivered any of the distance education courses in which students in the district were enrolled.....	0.46	0.20
Q6E Education service agencies within the state delivered any of the distance education courses in which students in the district were enrolled	0.46	0.20
Q6F State virtual school in the state delivered any of the distance education courses in which students in the district were enrolled.....	0.46	0.20
Q6G State virtual school in another state delivered any of the distance education courses in which students in the district were enrolled.....	0.46	0.20
Q6H Districts or schools in other states delivered any of the distance education courses in which students in the district were enrolled.....	0.55	0.29
Q6I Postsecondary institution delivered any of the distance education courses in which students in the district were enrolled.....	0.46	0.26
Q6J Independent vendor delivered any of the distance education courses in which students in the district were enrolled.....	0.55	0.29
Q6K Non-U.S.-based public or private entity delivered any of the distance education courses in which students in the district were enrolled	0.46	0.20
Q6L Other entity delivered any of the distance education courses in which students in the district were enrolled.....	0.46	0.20
Q8 Number of enrollments in Advanced Placement courses offered through distance education	0.50	0.24
Q9A Postsecondary institutions delivered Advanced Placement courses offered through distance education	0.46	0.20
Q9B Public school or school district delivered Advanced Placement courses offered through distance education	0.46	0.20
Q9C State virtual school delivered Advanced Placement courses offered through distance education	0.46	0.20
Q9D Independent vendor delivered Advanced Placement courses offered through distance education	0.46	0.20
Q9E Other entity delivered Advanced Placement courses offered through distance education.....	0.46	0.20
Q11 Number of enrollments in college-level courses through distance education.....	0.51	0.24
Q14 Technologies used as a primary mode of instruction for the greatest number of distance education courses.....	0.19	0.10
Q18 District delivered any distance education courses to students not regularly enrolled in the district	0.46	0.18
Q19 District plans to expand distance education courses	0.69	0.38

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: 2004–05,” FRSS 89, 2005.

Data Reliability

While the “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05” 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.

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 in 2004–05 is 37 percent and the standard error is 1.2 percent (tables 1 and 1a). The 95 percent confidence interval for the statistic extends from $[37 - (1.2 \times 1.96)]$ to $[37 + (1.2 \times 1.96)]$, or from 34.6 to 39.4 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). 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.

A similar approach was used to assess the significance of differences between groups within years and across years. For example, suppose that Y_1 is an estimate of a characteristic for group 1 and Y_2 is the corresponding estimate for group 2. The estimated difference between groups was then computed as $D = Y_1 - Y_2$, and the associated standard error, $SE(D)$, was computed using the jackknife replication method described below. The difference is then deemed to be statistically significant if the absolute value of $t = D/SE(D)$ exceeds 1.96. Note that this general form of *t*-test applies to both subgroup comparisons within a year as well as comparisons across years. For comparisons across years, separate sets of jackknife replicate weights were created for cross-sectional and longitudinal analyses; however, in both cases, the replicate weights were designed to reflect the year-to-year correlation resulting from the use of the overlapping sample.

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 percentages) 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 one 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). The standard errors for comparisons within the 2004–05 survey (e.g., comparing the percentage of urban and rural districts with students enrolled in distance education in 2004–05) are in appendix B. The replicate weights for the 2002–03 survey were recalculated from those used to calculate the standard errors that appear in the previous NCES publication (Setzer and Lewis 2005). This was done to incorporate the finite population correction for the 2002–03 data so that the standard errors for the 2002–03 data would be calculated in the same way as for the 2004–05 data. The standard errors, which are to be used for comparisons within the 2002–03 survey, are also in appendix B.

In addition, because the sample for the 2004–05 distance education survey was designed to maximize the overlap with the sample for the 2002–03 distance education survey, a separate set of replicate weights was constructed for the cross-sectional comparisons of the 2002–03 and 2004–05 surveys. This was necessary because the replicate weights created for the 2004–05 survey data, while appropriate for cross-sectional analyses of the 2004–05 survey, do not take account of the overlap in the samples between years. These additional replicate weights were created in a way that approximately reflects the correlation between years resulting from the overlap and were used to calculate the standard errors of the difference. These standard errors of the difference were used for cross-sectional comparisons of the 2002–03 and 2004–05 surveys (e.g., comparing the percentage of districts with students enrolled in distance education in 2002–03 and 2004–05). Replicate weights were also constructed for longitudinal comparisons of the overlapping districts. The weights for longitudinal analyses are different from those created for year-to-year cross-sectional comparisons because they apply only to the subset of districts in 2002–03 that “survived” to 2004–05. The standard errors for the longitudinal comparisons of change (e.g., the percentage of districts with students enrolled in distance education in both 2002–03 and 2004–05) are in tables B-21 through B-25 in appendix B.

Where appropriate, estimates with a coefficient of variation (CV) greater than 30 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,⁸ 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 distance learning specialists, instructional technology specialists, 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 entered with 100 percent verification for surveys received by mail, fax, or telephone.

Definitions of Analysis Variables

Many of the district characteristics, described below, may 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 report focuses on bivariate relationships between the analysis variables and questionnaire variables rather than more complex analyses.

⁸Unit 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.

District Enrollment Size—This variable indicates the total number of students enrolled in the district based on data from the 2003–04 CCD. Data on this variable were missing for seven 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

Metropolitan Status—This variable indicates the type of community in which the district is located, as defined in the 2003–04 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 and the National Assessment of Educational Progress. Data were obtained from the 2003–04 CCD Local Education Agency Universe file. The geographic regions are as follows:

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 U.S. Census Bureau, “Small Area Income and Poverty Estimates.” Data on this variable were missing for 103 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.

Appendix B

Standard Error Tables

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Table B-1. Standard errors for the number of public school districts in the nation, number of public school districts with students enrolled in technology-based distance education courses, and percent of public school districts with students enrolled in technology-based distance education courses, by district characteristics: 2002–03 and 2004–05

District characteristic	Number of districts		Number of districts with students enrolled in technology-based distance education courses		Percent of districts with students enrolled in technology-based distance education courses	
	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05
All public school districts	53	86	179	186	1.2	1.2
District enrollment size						
Less than 2,500.....	50	99	170	181	1.5	1.6
2,500 to 9,999.....	7	7	55	51	1.8	1.6
10,000 or more	3	3	17	21	2.1	2.5
Metropolitan status						
Urban	73	100	31	45	2.7	2.8
Suburban.....	182	201	101	115	1.6	1.6
Rural	176	213	179	168	1.9	1.9
Region						
Northeast	118	159	70	62	2.2	2.0
Southeast	91	94	64	67	2.6	3.2
Central	150	197	134	161	2.3	2.4
West.....	159	140	112	121	2.2	2.1
Poverty concentration						
Less than 10 percent.....	38	34	102	97	2.1	1.9
10 to 19 percent.....	45	46	111	119	2.1	2.2
20 percent or more.....	33	45	92	91	2.5	2.7

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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

Table B-2. Standard errors for the percent of public schools in the nation with students enrolled in technology-based distance education courses, by instructional level and district characteristics: 2002–03 and 2004–05

District characteristic	All instructional levels		Elementary schools		Middle or junior high schools		High schools		Combined or ungraded schools	
	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05
All public school districts	0.3	0.3	†	0.1	0.4	0.5	1.2	1.1	1.9	1.6
District enrollment size										
Less than 2,500.....	0.7	0.8	†	0.3	0.7	0.9	2.2	2.2	3.4	2.5
2,500 to 9,999.....	0.4	0.3	†	†	0.8	0.8	1.6	1.7	2.6	2.8
10,000 or more	0.3	0.3	†	†	0.3	0.7	1.7	1.4	1.0	0.9
Metropolitan status										
Urban.....	0.3	0.5	†	†	0.5	0.8	1.9	2.5	1.2	1.7
Suburban.....	0.4	0.3	†	0.1	0.5	0.6	1.6	1.4	2.1	2.4
Rural	0.7	0.8	†	0.3	0.8	1.1	2.2	1.9	3.2	2.9
Region										
Northeast	0.5	0.6	†	0.4	0.5	0.9	2.5	1.8	4.0	2.9
Southeast	0.6	0.5	†	†	0.8	1.1	2.4	2.3	2.5	2.2
Central	0.7	0.7	†	0.2	0.7	0.9	2.2	2.4	4.1	3.9
West.....	0.5	0.6	†	†	0.7	0.9	2.1	2.0	3.2	2.9
Poverty concentration										
Less than 10 percent.....	0.5	0.5	†	0.2	0.7	0.8	1.7	1.9	4.7	3.8
10 to 19 percent.....	0.5	0.5	†	†	0.6	0.7	1.8	1.9	2.8	2.3
20 percent or more.....	0.5	0.6	†	0.3	0.8	1.0	2.3	2.0	2.7	2.4

†Not applicable.

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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

Table B-3. Standard errors for the percentage distribution of public schools with students enrolled in technology-based distance education courses, by instructional level and district characteristics: 2002–03 and 2004–05

District characteristic	Elementary schools		Middle or junior high schools		High schools		Combined or ungraded schools	
	2003–04	2004–05	2003–04	2004–05	2003–04	2004–05	2003–04	2004–05
All public school districts with students enrolled in technology-based distance education courses	0.5	0.6	0.6	0.7	1.4	1.6	1.4	1.4
District enrollment size								
Less than 2,500	0.7	0.8	0.8	0.9	2.2	2.7	2.4	2.5
2,500 to 9,999	0.4	0.9	1.9	1.9	2.8	2.6	1.8	2.0
10,000 or more	1.0	1.3	0.9	1.2	1.4	1.9	0.5	0.6
Metropolitan status								
Urban	2.0	2.4	1.3	2.1	2.5	3.7	1.0	2.2
Suburban	0.6	0.8	1.1	1.1	1.9	1.9	1.5	1.6
Rural	0.7	0.8	0.9	1.1	2.3	2.6	2.4	2.6
Region								
Northeast	1.9	3.1	1.6	1.9	4.2	4.3	3.4	3.2
Southeast	1.0	0.5	1.4	1.5	2.3	2.1	1.7	1.7
Central	0.9	1.0	1.0	1.3	2.5	3.1	2.3	2.8
West	0.4	0.6	1.3	1.6	3.1	2.8	3.0	3.0
Poverty concentration								
Less than 10 percent	0.7	1.2	1.4	1.4	2.8	2.4	2.7	2.2
10 to 19 percent	1.0	0.5	1.0	1.0	2.2	2.3	2.0	1.9
20 percent or more	0.3	1.4	1.3	1.5	2.7	3.1	2.5	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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

Table B-4. Standard errors for the number of enrollments in technology-based distance education courses of students regularly enrolled in the districts, by instructional level and district characteristics: 2002–03 and 2004–05

District characteristic	All instructional levels		Elementary schools		Middle or junior high schools		High schools		Combined or ungraded schools	
	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05
All public school districts with students enrolled in technology-based distance education courses.....	27,437	56,959	977	6,107	1,067	3,367	16,549	24,350	22,593	51,753
District enrollment size										
Less than 2,500.....	21,698	54,063	64	275	450	3,097	6,924	17,659	20,502	51,025
2,500 to 9,999.....	6,384	13,404	109	5,689	642	731	5,832	5,136	1,210	9,429
10,000 or more.....	15,703	16,415	968	2,202	723	1,101	13,853	16,044	8,563	5,298
Metropolitan status										
Urban.....	13,660	21,900	973	1,749	719	975	13,860	16,851	1,337	12,533
Suburban.....	23,536	53,058	55	5,854	597	2,824	7,858	17,217	22,063	50,181
Rural.....	8,505	12,269	124	183	523	1,717	7,456	6,846	2,748	9,266
Region										
Northeast.....	20,821	49,777	49	206	96	2,711	3,656	2,621	20,314	49,691
Southeast.....	6,251	6,341	919	1,333	632	732	5,698	5,276	1,254	1,913
Central.....	7,726	22,055	441	5,957	412	953	6,455	13,024	2,529	15,067
West.....	16,010	22,608	165	161	782	1,732	14,825	21,287	8,619	7,587
Poverty concentration										
Less than 10 percent.....	11,177	16,778	400	5,957	564	1,123	7,556	10,651	8,591	9,510
10 to 19 percent.....	7,962	12,379	920	1,336	392	602	7,050	10,283	2,446	5,835
20 percent or more.....	13,518	14,709	249	221	837	3,111	13,532	13,367	1,557	2,905

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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

Table B-5. Standard errors for the percentage distribution of enrollments in technology-based distance education courses of students regularly enrolled in the public school districts, by instructional level and district characteristics: 2002–03 and 2004–05

District characteristic	Elementary schools		Middle or junior high schools		High schools		Combined or ungraded schools	
	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05
All public school districts with students enrolled in technology-based distance education courses.....	0.3	1.2	0.4	0.7	5.5	7.2	5.7	7.7
District enrollment size								
Less than 2,500	†	†	0.4	1.7	13.8	16.5	14.0	17.4
2,500 to 9,999.....	†	5.6	0.7	0.8	3.2	5.2	3.3	6.0
10,000 or more	0.9	1.2	0.7	0.7	7.0	3.0	7.2	2.7
Metropolitan status								
Urban.....	1.1	1.4	0.8	0.8	7.0	7.9	6.1	7.7
Suburban.....	†	2.3	0.7	1.3	14.6	15.1	15.1	16.5
Rural.....	†	†	0.5	1.6	2.5	7.0	2.5	7.3
Region								
Northeast	†	0.5	†	4.2	43.5	14.9	44.2	18.9
Southeast	1.6	1.2	1.0	0.6	2.7	1.7	2.1	1.5
Central	0.4	4.7	0.4	0.8	2.7	8.1	2.8	8.7
West.....	†	†	0.8	1.1	7.8	4.8	7.9	4.8
Poverty concentration								
Less than 10 percent.....	0.5	5.3	0.8	1.1	10.2	7.8	10.5	7.9
10 to 19 percent.....	1.0	0.9	0.4	0.5	2.5	3.4	2.4	3.5
20 percent or more	0.3	†	1.1	2.9	3.0	4.4	2.3	3.4

† Not applicable.

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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

Table B-6. Standard errors for the percentage distribution of public school districts with students enrolled in technology-based distance education courses, by the number of distance education enrollments and district characteristics: 2002–03 and 2004–05

District characteristic	Number of technology-based distance education enrollments											
	1–5		6–10		11–20		21–50		51–100		More than 100	
	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05
All public school districts with students enrolled in technology-based distance education.....	2.2	1.8	1.5	1.6	1.6	1.7	2.1	1.8	1.0	1.1	0.7	0.9
District enrollment size												
Less than 2,500.....	2.9	2.4	2.0	2.1	2.0	2.2	2.7	2.3	1.3	1.4	0.7	1.1
2,500 to 9,999.....	2.0	2.8	1.4	1.7	2.1	2.4	2.9	3.0	2.0	1.8	1.9	2.0
10,000 or more.....	1.9	1.2	1.4	1.8	1.8	1.9	1.7	2.6	1.6	1.6	2.4	2.3
Metropolitan status												
Urban.....	6.1	7.7	1.6	2.4	3.5	6.1	4.4	2.9	3.6	1.9	3.6	6.5
Suburban.....	3.5	3.1	2.3	1.8	2.8	2.3	2.8	2.7	1.8	1.7	1.3	1.5
Rural.....	2.4	2.4	2.1	2.3	2.2	2.5	2.7	2.4	1.5	1.6	0.9	1.1
Region												
Northeast.....	6.6	5.2	3.9	4.0	4.3	2.9	5.4	4.1	2.3	2.3	1.3	1.8
Southeast.....	3.9	3.3	2.5	2.8	3.1	4.2	4.0	3.3	2.5	3.1	2.4	2.7
Central.....	3.2	2.7	2.5	2.5	2.7	2.5	3.5	2.7	1.7	1.8	0.8	1.2
West.....	3.9	3.2	2.9	2.6	3.4	3.1	3.9	3.4	1.9	1.8	1.5	2.1
Poverty concentration												
Less than 10 percent.....	3.6	3.7	2.9	2.5	3.3	3.2	3.3	3.1	1.6	1.8	1.2	1.3
10 to 19 percent.....	3.2	3.0	2.4	3.1	2.6	3.8	3.2	2.8	1.4	1.9	0.8	1.2
20 percent or more.....	2.9	2.9	2.2	2.9	3.7	3.7	4.5	3.3	2.3	2.4	1.4	1.8

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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

Table B-7. Standard errors for the percentage distribution of enrollments in technology-based distance education courses of students regularly enrolled in the public school districts, by course completion status and district characteristics: 2004–05

District characteristic	Course completions with a passing grade	Course completions without a passing grade	Incompletes	Other	Don't know course completion status
All public school districts with students enrolled in technology-based distance education courses.....	4.8	0.7	1.3	1.7	4.2
District enrollment size					
Less than 2,500.....	8.6	1.0	3.3	4.4	5.4
2,500 to 9,999.....	9.3	1.8	0.8	0.3	11.2
10,000 or more.....	4.5	0.8	0.6	0.7	5.3
Metropolitan status					
Urban.....	6.3	1.6	4.7	0.3	9.4
Suburban.....	5.9	0.9	0.7	0.8	4.5
Rural.....	7.1	1.6	1.1	8.3	1.9
Region					
Northeast.....	9.5	5.8	0.4	†	4.1
Southeast.....	1.6	0.9	0.5	0.8	1.3
Central.....	9.4	1.0	0.6	6.8	10.1
West.....	6.8	1.2	4.0	0.3	7.9
Poverty concentration					
Less than 10 percent.....	9.3	1.0	0.9	0.4	10.4
10 to 19 percent.....	3.0	0.9	0.7	0.7	3.6
20 percent or more.....	9.0	1.8	0.8	†	10.0

† Not applicable.

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: 2004–05," FRSS 89, 2005.

Table B-8. Standard errors for the percent of public school districts with students enrolled in technology-based distance education courses that were planning to expand distance education courses, by district characteristics: 2002–03 and 2004–05

District characteristic	2002–03	2004–05
All public school districts with students enrolled in technology-based distance education courses	2.2	1.9
District enrollment size		
Less than 2,500	2.9	2.5
2,500 to 9,999	2.4	2.3
10,000 or more	2.2	1.8
Metropolitan status		
Urban	5.2	3.2
Suburban	3.1	3.1
Rural	3.0	2.3
Region		
Northeast	5.0	5.1
Southeast	4.3	3.1
Central	3.3	3.1
West	3.7	3.1
Poverty concentration		
Less than 10 percent	3.7	3.4
10 to 19 percent	2.9	3.1
20 percent or more	3.6	3.2

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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

Table B-9. Standard errors for the percentage distribution of public school districts indicating whether various entities delivered the technology-based distance education courses in which students in their district were enrolled: 2002–03 and 2004–05

Entity	Yes		No		Don't know	
	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05
Online charter school in the district	0.6	0.9	0.8	1.0	0.5	0.4
Other schools in the district	0.9	1.0	1.0	1.1	0.3	0.3
Their district (delivered centrally from the district)	1.5	1.8	1.5	1.9	0.3	†
Another local school district, or schools in other districts, in their state	1.8	2.1	1.8	2.1	0.5	0.4
Education service agencies within their state	1.6	1.4	1.7	1.4	0.4	0.5
State virtual school in their state	1.3	1.7	1.4	1.6	0.3	0.4
State virtual school in another state	0.7	0.9	0.8	1.0	0.4	0.5
Districts or schools in other states	0.9	0.8	1.0	0.9	0.4	0.5
Postsecondary institutions	2.2	2.1	2.3	2.1	0.4	0.4
Independent vendor	1.4	1.2	1.5	1.3	0.6	0.4
Non-U.S.-based public or private entity	†	0.4	†	0.6	†	0.5
Other	0.7	0.5	0.9	0.5	0.7	†

† Not applicable.

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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

Table B-10. Standard errors for the percent of public school districts indicating that various entities delivered the technology-based distance education courses in which students in their district were enrolled, by district characteristics: 2002–03 and 2004–05

District characteristic	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	
	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05
All public school districts with students enrolled in technology-based distance education courses	0.6	0.9	0.9	1.0	1.5	1.8	1.8	2.1	1.6	1.4
District enrollment size										
Less than 2,500.....	0.8	1.2	1.1	1.3	1.9	2.4	2.4	2.7	2.1	1.8
2,500 to 9,999.....	1.1	0.8	1.9	1.7	2.2	2.3	2.4	2.6	1.8	1.9
10,000 or more	0.9	0.9	2.8	2.1	2.6	1.4	1.9	2.0	2.0	1.5
Metropolitan status										
Urban.....	3.8	6.1	4.0	6.1	4.8	7.4	5.5	6.2	5.5	2.2
Suburban.....	1.3	1.5	1.7	1.2	2.4	2.4	2.8	2.8	2.2	2.6
Rural	0.7	0.9	1.1	1.5	2.3	2.7	2.8	3.3	2.2	1.9
Region										
Northeast	1.8	3.0	3.3	1.2	4.0	3.7	5.3	4.7	4.2	4.1
Southeast	0.6	†	2.3	2.2	2.7	2.8	4.8	3.3	3.5	3.2
Central	0.9	1.5	1.6	1.7	2.7	3.3	2.9	3.3	2.7	2.5
West.....	1.3	1.5	1.4	2.0	2.4	4.1	3.2	4.2	2.5	2.6
Poverty concentration										
Less than 10 percent.....	1.1	1.6	1.7	1.6	2.6	2.9	4.0	3.2	3.0	2.5
10 to 19 percent.....	1.0	1.1	1.5	1.7	2.5	2.6	2.9	3.2	2.9	3.0
20 percent or more.....	0.6	1.2	1.9	1.7	3.3	3.5	4.3	4.7	2.9	2.6

See notes at end of table.

Table B-10. Standard errors for the percent of public school districts indicating that various entities delivered the technology-based distance education courses in which students in their district were enrolled, by district characteristics: 2002–03 and 2004–05—Continued

District characteristic	State virtual school in their state		State virtual school in another state		Districts or schools in other states		Postsecondary institution	
	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05
All public school districts with students enrolled in technology-based distance education courses	1.3	1.7	0.7	0.9	0.9	0.8	2.2	2.1
District enrollment size								
Less than 2,500.....	1.7	2.2	0.9	1.2	1.2	1.0	2.9	2.7
2,500 to 9,999.....	2.1	2.3	1.2	1.7	0.9	1.1	2.9	2.6
10,000 or more	1.9	2.1	1.7	1.9	1.4	0.8	2.6	2.0
Metropolitan status								
Urban	3.1	6.3	2.4	6.1	1.6	1.2	3.4	6.5
Suburban.....	2.5	2.6	1.0	1.2	0.9	1.1	3.6	3.2
Rural	1.9	2.6	1.1	1.3	1.4	1.2	3.1	3.0
Region								
Northeast	2.1	3.3	1.9	3.2	2.1	2.0	4.5	5.7
Southeast	4.3	4.6	2.1	2.5	1.1	1.3	3.8	2.9
Central	2.4	2.9	1.1	1.4	1.5	1.5	3.6	3.4
West.....	2.8	3.1	1.5	1.9	1.5	1.4	3.6	3.9
Poverty concentration								
Less than 10 percent.....	2.5	2.9	1.4	2.2	1.8	1.6	4.6	3.2
10 to 19 percent.....	2.2	2.8	1.1	0.7	1.3	1.2	3.0	3.6
20 percent or more.....	3.2	3.6	1.4	1.6	1.9	1.6	3.7	3.7

See notes at end of table.

Table B-10. Standard errors for the percent of public school districts indicating that various entities delivered the technology-based distance education courses in which students in their district were enrolled, by district characteristics: 2002–03 and 2004–05—Continued

District characteristic	Independent vendor		Non-U.S.-based public or private entity		Other	
	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05
All public school districts with students enrolled in technology-based distance education.....	1.4	1.2	†	0.4	0.7	0.5
District enrollment size						
Less than 2,500.....	1.7	1.4	†	0.5	0.8	0.7
2,500 to 9,999.....	2.5	2.5	†	0.6	1.1	0.6
10,000 or more	2.1	2.5	†	0.6	0.7	0.6
Metropolitan status						
Urban.....	4.5	3.8	†	1.2	0.7	0.9
Suburban.....	2.7	1.9	†	†	1.5	0.4
Rural	1.8	1.7	†	0.7	0.8	0.9
Region						
Northeast	4.5	4.2	†	†	1.5	0.7
Southeast	3.1	2.8	†	†	1.5	1.4
Central	2.1	1.8	†	0.7	1.3	0.7
West.....	3.2	2.3	†	1.0	1.1	1.3
Poverty concentration						
Less than 10 percent.....	3.1	2.1	†	0.9	1.5	0.6
10 to 19 percent.....	2.2	2.3	†	0.8	0.8	1.2
20 percent or more.....	2.3	2.6	†	†	1.5	1.1

† Not applicable.

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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

Table B-11. Standard errors for the percent of public school districts indicating that they delivered technology-based distance education courses to students who were not regularly enrolled in their district, by district characteristics: 2002–03 and 2004–05

District characteristic	2002–03	2004–05
All public school districts with students enrolled in technology-based distance education courses	1.7	2.2
District enrollment size		
Less than 2,500	2.3	2.9
2,500 to 9,999	2.4	2.3
10,000 or more	2.0	1.9
Metropolitan status		
Urban	3.1	6.1
Suburban	2.8	2.4
Rural	2.4	2.8
Region		
Northeast	4.3	3.9
Southeast	2.9	3.2
Central	3.3	3.6
West	2.9	3.4
Poverty concentration		
Less than 10 percent	3.5	3.2
10 to 19 percent	2.7	3.4
20 percent or more	3.2	3.3

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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

Table B-12. Standard errors for the percent of public school districts with students enrolled in technology-based distance education courses indicating that students regularly enrolled in the district were enrolled in Advanced Placement courses offered through technology-based distance education, and percent of all enrollments in technology-based distance education courses represented by the enrollments in Advanced Placement courses, by district characteristics: 2004–05

District characteristic	Percent of districts with students enrolled in Advanced Placement courses offered through technology-based distance education	Percent of all technology-based distance education enrollments that are in Advanced Placement distance education courses
All public school districts with students enrolled in technology-based distance education courses.....	1.8	0.5
District enrollment size		
Less than 2,500	2.3	1.6
2,500 to 9,999.....	2.8	0.4
10,000 or more	2.0	0.3
Metropolitan status		
Urban.....	3.8	0.4
Suburban.....	2.8	0.8
Rural	2.6	1.5
Region		
Northeast	4.5	1.7
Southeast	4.4	0.8
Central	2.8	1.1
West.....	2.5	0.6
Poverty concentration		
Less than 10 percent.....	3.4	0.7
10 to 19 percent.....	2.7	0.7
20 percent or more	3.2	1.3

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: 2004–05," FRSS 89, 2005.

Table B-13. Standard errors for the percentage distribution of public school districts indicating whether various entities delivered the Advanced Placement technology-based distance education courses in which students in their district were enrolled: 2004–05

Entity	Yes	No	Don't know
Postsecondary institutions.....	3.6	3.6	0.6
Public school or school district.....	4.0	4.0	†
State virtual school.....	3.9	4.0	0.6
Independent vendor.....	2.1	2.2	0.5
Other entity.....	1.3	1.4	0.7

† Not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

Table B-14. Standard errors for the percent of public school districts with students enrolled in technology-based distance education courses indicating that students regularly enrolled in the district were enrolled in dual credit college-level courses offered through technology-based distance education, and the percent of all enrollments in technology-based distance education courses represented by enrollments in dual credit college-level distance education courses, by district characteristics: 2004–05

District characteristic	Percent of districts with students enrolled in dual credit college-level courses offered through technology-based distance education	Percent of all technology-based distance education enrollments that are in dual credit college-level distance education courses
All public school districts with students enrolled in technology-based distance education courses.....	2.2	2.2
District enrollment size		
Less than 2,500	2.9	4.2
2,500 to 9,999.....	2.1	2.5
10,000 or more	2.1	4.8
Metropolitan status		
Urban.....	6.4	0.6
Suburban.....	3.3	4.0
Rural	3.4	4.2
Region		
Northeast	4.6	0.5
Southeast	2.8	1.3
Central	4.1	2.9
West.....	3.7	6.3
Poverty concentration		
Less than 10 percent.....	3.5	8.3
10 to 19 percent.....	3.8	2.1
20 percent or more	4.0	3.2

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public Elementary and Secondary School Students: 2004–05," FRSS 89, 2005.

Table B-15. Standard errors for the percentage distribution of public school districts indicating whether various entities delivered the dual credit college-level technology-based distance education courses in which students in their district were enrolled: 2004–05

Entity	Yes	No	Don't know
Postsecondary institutions.....	1.8	1.8	0.4
Public school or school district.....	3.6	3.6	0.7
Other entity.....	1.1	1.1	†

† Not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Distance Education Courses for Public Elementary and Secondary School Students: 2004–05," FRSS 89, 2005.

Table B-16. Standard errors for the percent of public school districts with students enrolled in technology-based distance education courses indicating that students regularly enrolled in the district were enrolled in Advanced Placement or dual credit college-level courses offered through distance education, and percent of all enrollments in technology-based education courses represented by enrollments in Advanced Placement or dual credit college-level courses offered through technology-based distance education, by district characteristics: 2002–03 and 2004–05

District characteristic	Percent of districts with students enrolled in Advanced Placement or dual credit college-level courses offered through technology-based distance education		Percent of all technology-based distance education enrollments that are in Advanced Placement or dual credit college-level distance education courses	
	2002–03	2004–05	2002–03	2004–05
All public school districts with students enrolled in technology-based distance education courses.....	2.3	2.3	1.6	2.5
District enrollment size				
Less than 2,500	3.0	3.0	5.2	5.6
2,500 to 9,999.....	2.3	2.8	2.7	2.4
10,000 or more	2.6	2.7	1.7	4.8
Metropolitan status				
Urban.....	5.1	6.8	0.9	0.8
Suburban.....	3.1	3.6	2.6	4.3
Rural.....	3.2	3.2	3.5	5.1
Region				
Northeast	5.1	4.9	7.0	1.7
Southeast	4.8	4.1	1.8	1.5
Central	3.6	3.9	1.9	3.6
West.....	3.8	3.9	4.2	6.4
Poverty concentration				
Less than 10 percent.....	3.0	4.0	3.3	8.0
10 to 19 percent.....	3.6	3.9	3.4	2.5
20 percent or more	4.0	3.9	3.8	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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

Table B-17. Standard errors for the percent of public school districts reporting that various technologies were used as primary modes of instructional delivery for any technology-based distance education courses in which students in their district were enrolled, by district characteristics: 2002–03 and 2004–05

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	
	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05
All public school districts with students enrolled in technology-based distance education courses	1.7	1.8	2.2	1.9	2.0	2.0	1.4	1.3	0.9	0.7
District enrollment size										
Less than 2,500.....	2.2	2.4	2.9	2.5	2.6	2.7	1.8	1.6	1.2	0.9
2,500 to 9,999.....	2.6	2.3	3.0	2.9	3.1	2.5	1.9	1.8	1.0	0.8
10,000 or more	2.0	2.4	3.1	2.1	2.4	2.0	2.4	2.3	1.0	1.0
Metropolitan status										
Urban.....	3.6	4.1	5.7	2.9	5.5	3.8	4.8	6.0	1.1	0.5
Suburban.....	3.2	3.0	2.9	2.7	3.3	3.2	2.0	1.9	1.4	0.6
Rural.....	2.3	2.6	2.9	2.8	3.0	3.3	2.0	1.6	1.3	1.1
Region										
Northeast.....	3.9	4.4	6.4	5.3	6.2	5.5	2.4	3.1	4.5	1.1
Southeast.....	4.1	2.8	4.7	4.7	4.6	3.6	2.7	2.6	1.5	2.5
Central.....	2.5	3.1	3.3	3.5	3.2	3.7	2.4	2.0	1.1	0.7
West.....	2.8	3.3	4.5	3.4	4.0	4.3	2.7	3.0	1.8	1.3
Poverty concentration										
Less than 10 percent.....	3.2	2.7	4.2	3.5	4.1	3.2	2.6	2.0	1.4	0.4
10 to 19 percent.....	2.4	2.8	3.0	3.4	3.7	4.1	2.4	1.8	1.2	1.5
20 percent or more.....	2.9	3.7	4.2	4.2	4.1	4.7	2.9	2.8	1.9	1.3

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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

Table B-18. Standard errors for the percentage distribution of public school districts reporting that various technologies were used as the primary mode of delivery for the greatest number of technology-based distance education courses in which students in their district were enrolled, by district characteristics: 2002–03 and 2004–05

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	
	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05
All public school districts with students enrolled in technology-based distance education courses	1.0	1.4	1.9	1.7	1.9	2.0	0.9	0.9	0.5	0.5
District enrollment size										
Less than 2,500.....	1.2	1.7	2.5	2.1	2.6	2.6	1.2	1.2	0.7	0.6
2,500 to 9,999.....	2.1	2.2	3.2	3.3	2.6	2.4	1.2	1.2	0.7	†
10,000 or more	1.5	1.5	3.0	2.2	2.2	1.8	0.8	0.7	0.7	0.6
Metropolitan status										
Urban.....	2.4	2.2	5.5	4.2	5.5	3.1	0.9	0.8	0.6	0.5
Suburban.....	2.2	2.1	3.4	3.0	3.2	2.8	1.5	1.3	0.6	†
Rural.....	1.4	2.0	2.5	2.2	2.9	3.1	1.4	1.4	0.7	0.8
Region										
Northeast.....	2.2	4.5	6.2	5.5	5.9	5.3	1.0	1.5	2.5	†
Southeast.....	3.2	2.7	4.3	4.4	4.7	4.0	1.9	1.9	0.7	2.0
Central.....	1.7	2.3	2.9	2.9	3.2	3.5	1.8	1.6	0.7	0.6
West.....	1.5	2.7	3.7	3.4	3.7	4.0	2.1	1.7	1.1	0.9
Poverty concentration										
Less than 10 percent.....	1.8	2.2	4.1	3.4	4.0	3.1	1.7	1.1	1.3	†
10 to 19 percent.....	1.9	2.5	2.7	2.7	3.7	4.1	1.9	1.6	0.4	1.1
20 percent or more.....	2.1	3.0	3.2	4.6	3.9	5.3	1.6	1.7	1.0	1.0

† Not applicable.

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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

Table B-19. Standard errors for the percent of public school districts with students enrolled in online distance education courses, and percent of those public school districts indicating the access location of the online courses, by district characteristics: 2002–03 and 2004–05

District characteristic	Districts with students enrolled in online distance education courses		Access location for online courses					
			School		Home		Other location	
	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05
All public school districts with students enrolled in technology-based distance education courses	2.3	1.9	1.1	1.6	2.8	2.8	1.6	1.2
District enrollment size								
Less than 2,500	3.0	2.4	1.4	2.1	4.1	4.1	2.2	1.6
2,500 to 9,999	2.5	2.4	2.1	2.1	2.9	2.0	2.0	1.4
10,000 or more	2.0	2.0	1.9	2.8	1.9	2.2	2.3	2.0
Metropolitan status								
Urban	5.4	2.2	3.2	4.1	5.4	6.9	4.0	6.6
Suburban	2.6	2.4	2.3	2.7	3.8	3.1	1.5	1.9
Rural	3.1	3.2	1.2	1.8	3.9	4.7	2.5	1.4
Region								
Northeast	5.7	5.0	4.6	4.3	6.9	4.8	2.5	2.1
Southeast	4.6	4.2	1.2	2.3	5.7	4.2	2.5	2.0
Central	3.3	3.5	1.9	2.8	4.1	4.8	1.9	2.1
West	4.6	3.3	1.7	3.5	5.6	5.5	2.7	2.4
Poverty concentration								
Less than 10 percent	3.9	3.2	2.4	2.2	5.2	4.2	1.8	2.1
10 to 19 percent	3.1	3.2	1.7	2.3	4.6	4.6	1.8	1.1
20 percent or more	4.2	4.5	1.4	2.5	4.6	5.2	3.4	1.8

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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

Table B-20. Standard errors for the percent of public school districts with students accessing online distance education courses from home, and percent of those public school 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 and 2004–05

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	
	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05	2002–03	2004–05
All public school districts with students enrolled in technology-based distance education courses	2.8	2.8	2.8	2.5	1.7	1.4	3.0	2.6	1.7	1.8	1.4	1.5	0.9	1.0
District enrollment size														
Less than 2,500	4.1	4.1	4.3	3.9	2.6	2.0	4.8	4.1	2.6	2.6	2.2	2.1	1.4	1.5
2,500 to 9,999	2.9	2.0	3.6	2.4	2.0	2.3	3.0	2.5	1.8	2.4	1.7	2.3	1.3	0.7
10,000 or more	1.9	2.2	2.0	2.1	2.2	2.5	2.6	2.2	2.1	2.8	1.4	1.9	1.2	1.3
Metropolitan status														
Urban	5.4	6.9	3.5	8.8	3.9	4.0	7.5	8.8	3.8	3.7	2.4	3.3	2.8	1.0
Suburban	3.8	3.1	3.0	3.4	2.6	2.0	3.7	3.2	2.5	2.0	1.5	1.6	0.5	1.6
Rural	3.9	4.7	4.3	3.6	2.8	2.6	4.9	3.9	2.7	3.5	2.5	2.8	1.7	1.5
Region														
Northeast	6.9	4.8	5.5	5.8	5.2	3.5	10.4	5.9	5.4	3.6	3.6	3.4	0.1	†
Southeast	5.7	4.2	6.8	5.4	2.0	3.6	6.8	5.2	2.0	3.4	2.4	3.0	1.3	0.7
Central	4.1	4.8	5.5	3.5	1.3	1.4	4.9	3.7	0.6	2.6	2.9	2.8	0.3	0.9
West	5.6	5.5	5.3	4.2	4.4	4.0	5.5	4.3	4.4	3.1	2.5	1.8	2.8	3.0
Poverty concentration														
Less than 10 percent	5.2	4.2	5.2	3.6	2.0	2.5	5.3	3.4	1.5	2.9	1.7	2.2	†	0.9
10 to 19 percent	4.6	4.6	4.8	3.7	2.3	1.8	4.7	3.6	2.3	2.6	2.5	3.1	1.2	0.6
20 percent or more	4.6	5.2	6.6	6.2	5.4	4.6	6.8	6.5	5.4	3.9	4.2	2.2	3.5	4.6

† Not applicable.

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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

Table B-21. Standard errors for the percentage distribution of public school districts by use of technology-based distance education courses and district characteristics: 2002–03 and 2004–05

[Percentage distribution of districts]

District characteristic	Districts with technology-based distance education courses in 2002–03 and 2004–05	Districts with technology-based distance education in courses 2002–03 but not in 2004–05	Districts without technology-based distance education courses in 2002–03 but with technology-based distance education courses in 2004–05	Districts without technology-based distance education courses in 2002–03 and 2004–05
All public school districts with students enrolled in technology-based distance education courses.....	1.0	0.7	0.8	1.0
District enrollment size				
Less than 2,500.....	1.3	0.9	1.0	1.2
2,500 to 9,999.....	1.6	1.2	1.3	1.8
10,000 or more.....	2.1	1.7	1.7	2.3
Metropolitan status				
Urban.....	1.8	1.9	1.7	2.8
Suburban.....	1.2	0.9	1.0	1.3
Rural.....	1.8	1.0	1.3	1.6
Region				
Northeast.....	1.8	1.1	1.5	2.0
Southeast.....	2.6	2.0	1.9	3.2
Central.....	1.9	1.4	1.0	1.8
West.....	1.7	1.3	1.4	1.7
Poverty concentration				
Less than 10 percent.....	1.5	1.1	1.1	1.7
10 to 19 percent.....	1.6	0.9	1.3	1.8
20 percent or more.....	2.0	1.4	1.3	2.1

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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

Table B-22. Standard errors for the change in the number of enrollments in technology-based distance education courses in public school districts: 2002–03 to 2004–05

[Percentage distribution of districts]

Number of technology-based distance education enrollments in 2002–03	Number of technology-based distance education enrollments in 2004–05						
	No enrollments	1–5	6–10	11–20	21–50	51–100	More than 100
No enrollments	†	3.2	2.2	2.1	2.7	2.0	1.0
1–5	3.1	3.4	2.4	2.1	1.6	1.1	0.4
6–10	5.1	3.5	3.1	3.8	4.2	1.9	†
11–20	5.1	3.5	2.4	3.9	3.1	0.9	1.4
21–50	2.8	1.3	2.3	2.8	3.1	1.6	0.6
51–100	2.6	†	1.5	3.4	5.7	5.2	3.4
More than 100.....	2.7	3.0	0.7	0.9	4.1	3.6	4.7

† Not applicable.

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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

Table B-23. Standard errors for the change in the technologies used as primary modes of instructional delivery for the greatest number of distance education courses in which students in public school districts were enrolled: 2002–03 to 2004–05

[Percentage distribution of districts]

Technologies used in 2002–03	Technologies used in 2004–05				
	Internet courses using synchronous computer-based instruction	Internet courses using asynchronous computer-based instruction	Two-way interactive video	One-way prerecorded video	Other technologies
Internet courses using synchronous computer-based instruction.....	10.9	9.3	6.5	0.7	†
Internet courses using asynchronous computer-based instruction.....	2.8	2.8	2.3	0.8	†
Two-way interactive video.....	1.7	1.3	1.9	0.9	0.6
One-way prerecorded video.....	5.9	6.9	6.4	7.0	†
Other technologies.....	21.0	23.1	33.6	†	†

† Not applicable.

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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

Table B-24. Standard errors for the technologies used as primary modes of instructional delivery for the greatest number of distance education courses in districts that had technology-based distance education enrollments in 2002–03, but did not have technology-based distance education enrollments anymore in 2004–05

Technology	Percent of districts
Internet courses using synchronous computer-based instruction	2.2
Internet courses using asynchronous computer-based instruction.....	3.4
Two-way interactive video	2.8
One-way prerecorded video	1.6
Other technologies.....	1.2

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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

Table B-25. Standard errors for the technologies used as primary modes of instructional delivery for the greatest number of distance education courses in districts that did not have technology-based distance education enrollments in 2002–03, but started using technology-based distance education in 2004–05

Technology	Percent of districts
Internet courses using synchronous computer-based instruction	2.3
Internet courses using asynchronous computer-based instruction.....	3.4
Two-way interactive video	3.2
One-way prerecorded video	1.0
Other technologies.....	1.0

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 Students: 2002–03,” FRSS 84, 2003; and “Distance Education Courses for Public Elementary and Secondary School Students: 2004–05,” FRSS 89, 2005.

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Appendix C

FRSS Questionnaires for 2002–03 and 2004–05

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U.S. DEPARTMENT OF EDUCATION
NATIONAL CENTER FOR EDUCATION STATISTICS
WASHINGTON, D.C. 20006-5651

O.M.B. APPROVED
No.: 1850-0733

**DISTANCE EDUCATION COURSES FOR PUBLIC ELEMENTARY AND
SECONDARY SCHOOL STUDENTS: 2002-03
FAST RESPONSE SURVEY SYSTEM**

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.

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:

Anne Kleiner (7166.29)
Westat
1650 Research Boulevard
Rockville, Maryland 20850-3195

IF YOU HAVE ANY QUESTIONS, CONTACT:

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.

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 _____

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	—

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 (<i>specify</i>).....	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 (<i>specify</i>).....	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 (<i>specify</i>).....	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 (<i>specify</i>).....	—	2	3	4

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: 2004-05
FAST RESPONSE SURVEY SYSTEM**

FORM APPROVED
O.M.B. No.: 1850-0733
EXPIRATION DATE: 09/2006

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.
- **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 about distance education Advanced Placement or dual credit college-level courses in which students in your district were enrolled.**
- **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 2004-05 school year.** This includes distance education courses during the summer of 2004 or the summer of 2005, depending on how records are kept at your district.

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:

Mail: Izabella Zandberg (8096.08.03)
Westat
1650 Research Boulevard
Rockville, Maryland 20850-3195
Fax: 800-254-0984

IF YOU HAVE ANY QUESTIONS, CONTACT:

Izabella Zandberg at Westat
800-937-8281, Ext. 4467 or 301-294-4467
E-mail: izabellazandberg@westat.com

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FRSS Form No. 89 11/2005

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

1. In 2004–05 (12-month school year), how many schools were in your district?

Please include all schools administered by your district (regular schools, charter schools, magnet schools, alternative schools, special education schools, etc.). Count each school at only one instructional level. If a school has combined grade ranges (for example, includes both elementary and middle school grades), count it in “e” as a “combined” school. Enter “0” if there were no schools in your district at an instructional level in 2004–05.

- 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..... _____

Instructions

- 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.
- 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).
- Report only about distance education enrollments of students regularly enrolled in your district.
- 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.
- Include enrollments in distance education Advanced Placement or dual credit college-level courses in which students in your district were enrolled. Dual credit college-level courses are courses for which students receive both high school and college credits.

2. In 2004–05 (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 2004–05 (12-month school year)? *See instruction box above. Count each school at only one instructional level. If a school has combined grade ranges, count it in “e” as a “combined” school. Enter “0” if there were no schools with students enrolled in distance education courses in your district at an instructional level in 2004–05.*

- 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 2004–05 (12-month school year), report the number of **enrollments** in distance education courses of students regularly enrolled in your district. *See instruction box above. Count each enrollment at only one instructional level. Enter “0” if there were no students in your district enrolled in distance education courses at an instructional level in 2004–05.*

- 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 _____

5. Of the total **enrollments** in distance education courses in 2004–05 (12-month school year) in your district, **as reported in question 4a**, how many **enrollments** resulted in each of the following? *Enter “0” if there were no enrollments in a category; enter “X” if information is not available for a category. If you do not know the course completion status of some or all of the enrollments, enter the number of those enrollments in “e.”*
- a. Course completions with a passing grade..... _____
 - b. Course completions without a passing grade..... _____
 - c. Incompletes _____
 - d. Other (*specify*) _____
 - e. Don’t know course completion status _____
 - f. **Total number of distance education course enrollments (This total of “a” through “e” should equal the total in question 4a.)**..... _____

6. In 2004–05 (12-month school year), which of the following entities delivered **any** of the distance education courses in which students in your district were enrolled? (*Circle one on each line.*)

	Yes	No	Don’t know
a. 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. Non-U.S.-based public or private entity (e.g., school, university, private vendor)	1	2	3
l. Other (<i>specify</i>) _____	1	2	3

7. In 2004–05 (12-month school year), were any students regularly enrolled in your district enrolled in Advanced Placement courses offered through distance education? *See instruction box on previous page.*

Yes..... 1 (*Continue with question 8.*) No..... 2 (*Skip to question 10.*)

8. In 2004–05 (12 month school year), how many **enrollments** of students regularly enrolled in your district were there in Advanced Placement courses offered through distance education? _____

9. Which entities delivered these Advanced Placement courses offered through distance education? (*Circle one on each line.*)

	Yes	No	Don’t Know
a. Postsecondary institutions	1	2	3
b. Public school or school district.....	1	2	3
c. State virtual school.....	1	2	3
d. Independent vendor.....	1	2	3
e. Other entity (<i>specify</i>) _____	1	2	3

10. In 2004–05 (12-month school year), were any students regularly enrolled in your district enrolled in dual credit college-level courses offered through distance education? *See instruction box on previous page.*

Yes..... 1 (*Continue with question 11.*) No..... 2 (*Skip to question 13.*)

11. In 2004–05 (12 month school year), how many **enrollments** of students regularly enrolled in your district were there in dual credit college-level courses offered through distance education? (*Exclude enrollments in Advanced Placement courses.*) _____

12. Which entities delivered these dual credit college-level courses offered through distance education? (Circle one on each line.)

	Yes	No	Don't Know
a. Postsecondary institutions	1	2	3
b. Public school or school district.....	1	2	3
c. Other entity (specify) _____	1	2	3

13. In 2004–05 (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.)

- Each course should have one **primary** mode of instructional delivery. If a course used multiple technologies to deliver instruction, consider only the **primary** mode for the course.
- Different courses may have different primary modes of instructional delivery. Therefore, you may circle yes for more than one technology.
- Please 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).
- 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., Video or Voice over Internet Protocol, 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

14. In 2004–05 (12-month school year), which one of the technologies listed in question 13 was used as a **primary** mode of instructional delivery **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 13.) (Circle only one.)

- a b c d e

15. In 2004–05 (12-month school year), were any students regularly enrolled in your district enrolled in online distance education courses (i.e., courses delivered over the Internet)? (If you answered yes in question 13 a or b, you should answer yes here.)

Yes..... 1 (Continue with question 16.) No..... 2 (Skip to question 18.)

16. In 2004–05 (12-month school year), where were students regularly enrolled 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

17. In 2004–05 (12-month school year), did your district provide or pay for the following items for students regularly enrolled in your district who accessed online distance education courses from home? (Circle one on each line.)

If no online distance education courses were accessed at home (i.e., you answered no in question 16 b), check here and skip to question 18.

	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

18. In 2004–05 (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

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

Yes..... 1 No..... 2