ISSUES&ANSWERS REL 2012–No. 109

REL APPALACHIA
Regional Educational Laboratory At CNA

A descriptive study of enrollment in supplemental educational services in the four REL Appalachia region states

ies NATIONAL CENTER FOR EDUCATION EVALUATION AND REGIONAL ASSISTANCE
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February 2012

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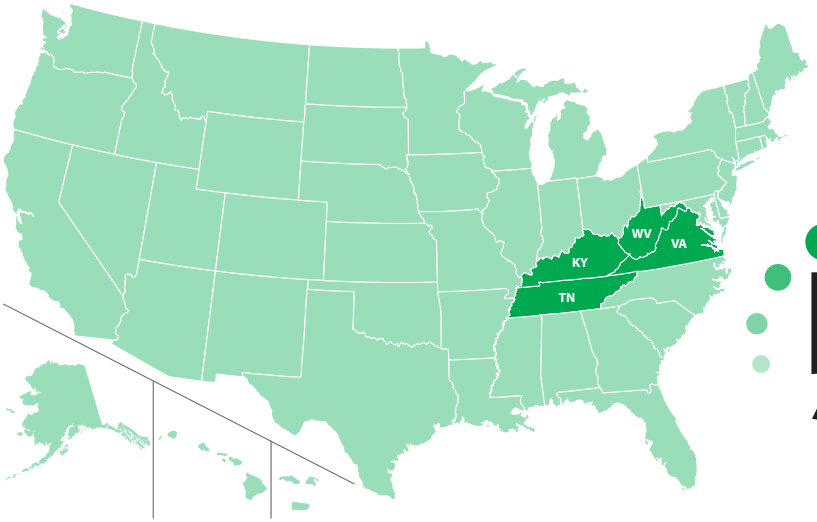

REL APPALACHIA
At CNA

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February 2012

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This report is available on the Regional Educational Laboratory website at http://ies.ed.gov/ncee/edlabs.

Summary

REL 2012–No. 109

A descriptive study of enrollment in supplemental educational services in the four REL Appalachia region states

This study of the Title I supplemental educational services program in the Regional Educational Laboratory Appalachia region looks at enrollment rates, number of tutoring hours contracted for and attended by students, and variations in the type of instruction across providers and enrollees in 2007/08.

The supplemental educational services program is a core provision of the No Child Left Behind (NCLB) Act of 2001. The program offers free tutoring in reading/language arts and math from state-approved providers outside of regular school hours. Students are eligible for the program if they are from a low-income household (typically determined by eligibility for the National School Lunch Program) and attend a Title I school that has not made adequate yearly progress for at least three consecutive years.[1] State education agencies are responsible for approving providers, monitoring their performance, and evaluating their effectiveness in improving student achievement. For each of these functions, state education agencies are allowed flexibility in setting guidelines, though they must ensure that the program is available to all eligible students and must offer parents choices in selecting a provider.

This report explores differences across states and school urban and rural locales in providing supplemental educational services. Although specific challenges persist in administering specialized academic programs in remote areas (Jimerson 2007; U.S. Government Accountability Office 2004), no formal studies have compared, across school locales, the percentages of eligible students who enrolled in supplemental educational services or the types of instruction (conventional, computer-only, or mixed-mode, which combines face-to-face and computer-delivered services) offered by providers and used by students. This report addresses these issues using 2007/08 data from state department of education websites, state and district supplemental educational services coordinators, and the National Center for Education Statistics Common Core of Data (U.S. Department of Education 2008).

The study examines six research questions:

- What percentage of students were eligible to enroll in supplemental educational services, what percentage enrolled, and how did enrollment vary by state and school locale?
- How many tutoring hours did enrollees contract for, and how did these hours vary by state and school locale?

- How many tutoring hours and what percentage of contracted hours did enrollees attend, and how did these hours vary by state and school locale?

- How many approved providers did each state have, and how did the number of providers vary by state?

- What types of instruction were offered, what percentage of providers offered each type, and how did the percentages vary by state and locale?

- What percentage of enrollees received each type of instruction, and how did the percentages vary by state and locale?

Key findings include:

- In Kentucky, Tennessee, and Virginia, enrollment rates among eligible students were lower in rural schools than in urban schools, with differences ranging from 7 to 12 percentage points. In contrast, enrollment rates among eligible students in West Virginia were similar in urban and rural schools (around 4 percent of eligible students).

- On average, enrollees in supplemental educational services contracted for 38 hours of tutoring a year in Tennessee and 42 hours in West Virginia. In Tennessee, students contracted for more hours in urban schools (38) than in rural schools (31). In contrast, in West Virginia, enrollees contracted for fewer hours in urban schools (30) than in rural schools (55). Data were not available on the number of contracted hours per enrollee for students in Kentucky and Virginia.

- In Kentucky and Tennessee, enrollees in rural schools attended fewer hours of tutoring, on average, than did enrollees in urban schools and in schools in towns and suburbs. In Virginia, enrollees in rural schools attended more hours of tutoring, on average, than did enrollees in urban schools and in schools in towns and suburbs. In West Virginia, the average number of tutoring hours attended by enrollees was about 25 in all school locales. The average number of tutoring hours attended was greatest in Tennessee (28) and smallest in Kentucky (15). On average, enrollees received 72 percent of their contracted hours in Tennessee and 60 percent in West Virginia. Data were not available on contract completion in Kentucky and Virginia.

- The most common type of instruction offered by providers in all states was conventional face-to-face instruction. Between 52 percent (West Virginia) and 76 percent (Kentucky) of providers offered face-to-face instruction. Conventional instruction was more prevalent in urban schools than in rural schools in Kentucky (72 percent versus 67 percent), Tennessee (67 percent versus 61 percent), and Virginia (63 percent versus 56 percent). In contrast, in West Virginia, conventional instruction was more prevalent in rural areas (50 percent) than in urban schools (37 percent).

- A great majority of students in all four states enrolled with providers offering conventional instruction, with rates ranging from 73 percent in Kentucky to 95 percent in West Virginia. In Kentucky, Tennessee, and Virginia, conventional instruction was especially prevalent among students in urban schools.

Note

1. Title 1 of the No Child Left Behind Act aims to bridge the gap between students from low-income households and other students by providing supplemental funding to local school districts with high percentages of students at-risk and students from low-income households. Schools must make adequate yearly progress on state assessments and focus on best teaching practices in order to continue receiving funds.

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This study of the Title I supplemental educational services program in the Regional Educational Laboratory Appalachia region looks at enrollment rates, number of tutoring hours contracted for and attended by students, and variations in the type of instruction across providers and enrollees in 2007/08.

WHY THIS STUDY?

The supplemental educational services program is a core provision of the No Child Left Behind (NCLB) Act of 2001. Under the NCLB Act, students from low-income households (typically determined by eligibility for the National School Lunch Program)[1] are eligible for free, extra academic assistance if they attend a Title I school that has not made adequate yearly progress for at least three consecutive years (see box 1 for definitions of key terms). The services usually involve individual or small-group tutoring beyond regular school hours in reading/language arts and math (see box 2 for a description of supplemental educational services).

This report, responding to the request of state personnel responsible for implementing supplemental educational services in the Regional Educational Laboratory (REL) Appalachia region, describes and compares how school districts provide these services across states and urban and rural school locales.[2] There are notable challenges in administering specialized academic programs in remote areas (Jimerson 2007; U.S. Government Accountability Office 2004), which likely contribute to the fact that enrollment rates in supplemental educational services in the REL Appalachia region were less than half the national average (Center on Education Policy 2006; Sunderman 2006).

Parents and school personnel often are unaware that supplemental educational services are available

Previous studies have indicated that parents and school personnel tend to know little about the availability of supplemental educational services (Peterson 2005; Sunderman and Kim 2007). A nationwide survey of eight large urban districts found that 31 percent of parents of students eligible to receive supplemental educational services reported that they had not been told about the option, and another 10 percent reported that they were not sure whether they had been told (U.S. Department of Education, Office of Planning, Evaluation and Policy Development 2009).

One contributing factor might be districts' flexibility in how they spend any unused part

BOX 1

Key terms

Alternative service delivery. Methods other than face-to-face instruction that providers may use for delivery of supplemental educational services, including online, Internet-based approaches and other distance-learning technologies.

Approved provider. A public or private organization that meets a state's eligibility criteria for providing supplemental educational services. A provider may be approved but have no students who elect to receive services.

Computer-only instruction. Instruction delivered through the Internet, an intranet, or a stand-alone computer, with no-face-to-face instruction.

Conventional instruction. Instruction that is face-to-face only.

Eligibility rate. The number of students in schools required to offer supplemental educational services who are eligible to receive services divided by the total number of students.

Eligible student. A student from a low-income household (typically students eligible for the *National School Lunch Program*) and attending a school required to offer supplemental educational services.

Enrollee. An eligible student who enters a contract with a supplemental educational services provider and receives some services from that provider.

Enrollment rate. The number of *enrollees* divided by the number of *eligible students.*

Mixed-mode instruction. Any combination of face-to-face and computer-delivered supplemental educational services.

National School Lunch Program. A federally assisted meal program operating in public and private schools and residential child care institutions that provides nutritionally balanced, low-cost or free lunches to students. To be eligible, a student must reside in a household whose income is at or below 130 percent of the national poverty level (for free meals) or between 130 and 185 percent of the poverty level (for reduced-price meals).

Rural locale. Schools classified in the Common Core of Data as operating in one of the following locales: rural, fringe; rural, distant; or rural, remote (U.S. Department of Education 2008).

School required to offer supplemental educational services. A *Title I* school that has not made adequate yearly progress for three consecutive years or longer.

Supplemental educational services. See box 2.

Supplemental educational services contract. A fee-for-service agreement between a local education agency and an approved provider to tutor an eligible student. Based on the policies of each state department of education, this agreement identifies the subject area (reading/language arts, math, or both), where the tutoring will occur, and how many tutoring hours the *enrollee* has contracted to participate in during that school year. The number of contracted tutoring hours during a school year may be affected by the local education agency's allocation per student under *Title I.*[1]

Title 1 of the No Child Left Behind (NCLB) Act. Title I aims to bridge the gap between students from low-income households and other students by providing supplemental funding to local school districts with high percentages of students at-risk and students from low-income households. Schools must make adequate yearly progress on state testing and focus on best teaching practices in order to continue receiving funds.

Town and suburb locales. Schools classified by the Common Core of Data as located in one of the following locales: suburb, large; suburb, midsize; suburb, small; town, fringe; town, distant; or town, remote (U.S. Department of Education 2008).

Urban locale. Schools classified by the Common Core of Data as located in one of the following locales: city, large; city, midsize; and city, small (U.S. Department of Education 2008).

Note

1. Local education agency allocations per student average about $1,300. However, the amount varies from approximately $900 to $2,400 (U.S. Department of Education 2009). Allocations do not depend on such factors as student performance or the number of students receiving supplemental educational services. All eligible students within a district are offered the same number of hours in each subject.

BOX 2

The provision of supplemental educational services under the No Child Left Behind Act of 2001

The No Child Left Behind (NCLB) Act of 2001 requires Title I schools that have not made adequate yearly progress for at least three consecutive years to offer free, extra academic assistance for eligible students (No Child Left Behind 2002). The goal is to assist eligible students in meeting state academic achievement standards in reading/language arts and math by providing tutoring or remedial help beyond regular school hours.

Each school year, state education agencies identify the schools and districts that are required to offer supplemental educational services. Students attending these schools are eligible for services if they are from a low-income household, typically determined by eligibility for the National School Lunch Program (U.S. Department of Agriculture 2009). School and district officials are required to inform parents of these students of their child's eligibility.

States are responsible for maintaining a list of providers that have been approved to administer services in each district (U.S. Department of Education 2009). State education agencies have some flexibility in developing their approval process, but the process must be objective and consistent with statutory and regulatory requirements, and all criteria must be published on the state department of education website. Typically, state education agencies approve providers after reviewing factors such as student–teacher ratios, staff qualifications, instructional plans, and evidence of prior success.

During the application process, providers indicate the types of services they plan to offer and how and where they will be provided. Some providers offer services statewide; others, especially smaller companies or faith-based organizations, limit service provision to specific districts. States are required to approve all applicants meeting the criteria, regardless of type of organization (public, private, for-profit, faith-based) or type of instructional services (conventional, computer-only, or mixed-mode). States are required to publish the list of approved providers on their website, along with contact information and a description of where each provider is approved to offer services.

Parents of eligible students may use any approved provider, with the district entering into a fee-for-service agreement with the provider to cover the costs. Each state is responsible for monitoring the quality and effectiveness of providers to ensure that their services are leading to improved academic achievement. Where parental demand for services exceeds district funding, guidelines mandate that districts prioritize the lowest achieving eligible students. See U.S. Department of Education (2009) for more details on supplemental educational services.

of the 20 percent of Title I funds allotted to supplemental educational services. This flexibility might discourage local education agencies from publicizing supplemental educational services widely (Ascher 2006; Peterson 2005; Petrilli 2007). Another factor might be the array of competing demands on districts, which can make implementation more difficult (Ross et al. 2009).

Approved providers face challenges serving students and communities in rural locales

Accessibility of supplemental educational services is sometimes limited for students in rural locales, where there may be a shortage of approved providers. For example, rural districts reportedly offer fewer potential tutoring contracts than do large urban districts (Ross et al. 2009). SES directors have attributed this difference, in part, to market dynamics in rural districts that may be unappealing to providers (Burch, Steinberg, and Donovan 2007).

Members of state education agencies in the REL Central region (Colorado, Kansas, Missouri, Nebraska, North Dakota, South Dakota, and Wyoming) and REL Northwest region (Alaska, Idaho, Montana, Oregon, and Washington) reported that a major challenge in providing supplemental educational services is recruiting qualified providers in rural locales (Barley and

Wegner 2007; Saifer and Speth 2007). Barley and Wegner (2007) and Saifer and Speth (2007) identified several contributing factors in rural locales:

- Higher per student costs due to fewer eligible students.
- Increased demand created by the NCLB Act.
- Lack of qualified local tutors or tutors who are willing to travel to rural locales.
- Limited access to technology and the Internet, which makes providing computer-based instruction more difficult.

Remoteness, small schools, shortages of qualified staff, and limited professional development opportunities for staff can create challenges in administering specialized academic programs in rural locales (Jimerson 2007; U.S. Government Accountability Office 2004). Research on how these challenges affect rural districts' access to supplemental educational services, however, is sparse (Eppley 2009).

The NCLB Act allows for modes of instruction other than face to face, which could potentially improve access to supplemental educational services in rural locales. However, it also is possible that students in rural locales are less likely than students in nonrural locales to be tutored by providers that offer only computer-based approaches or mixed-mode instruction if access to technology is limited. Computer-based instruction may be conducted in a classroom setting or as distance learning. It can include Internet and web-based lesson materials, interactive educational software, and teleconferencing with tutors (Hannum, Irvin, Banks, and Farmer 2009). Some providers issue computers, software, and Internet accounts to students, to overcome access problems in rural areas (Perry et al. 2009).

Remoteness, small schools, shortages of qualified staff, and limited professional development opportunities for staff can create challenges in administering specialized academic programs in rural locales

Research questions

This study examines the supply and use of supplemental educational services in the four REL Appalachia states: Kentucky, Tennessee, Virginia, and West Virginia. Using 2007/08 data from state department of education websites, state and district supplemental educational services coordinators, and the National Center for Education Statistics Common Core of Data, this report looks at the enrollment rates of students eligible for supplemental educational services, the number of tutoring hours contracted for and attended by enrollees, and variations in the type of instruction across providers and enrollees (conventional, computer-only, or mixed-mode).

The study examines six research questions for the four REL Appalachia states in 2007/08:

- What percentage of students were eligible to enroll in supplemental educational services, what percentage enrolled, and how did enrollment vary by state and school locale?
- How many tutoring hours did enrollees contract for, and how did these hours vary by state and school locale?
- How many tutoring hours and what percentage of contracted hours did enrollees attend, and how did these hours vary by state and school locale?
- How many approved providers did each state have, and how did the number of providers vary by state?
- What types of instruction were offered, what percentage of providers offered each type, and how did the percentages vary by state and locale?
- What percentage of enrollees received each type of instruction, and how did the percentages vary by state and locale?

BOX 3

Data sources and methodology

This report uses descriptive statistics to examine differences within and across states and school locales in the REL Appalachia region in enrollment rates of students eligible for supplemental educational services in 2007/08, the number of tutoring hours contracted for, the contracted hours attended by enrollees, the types of instruction offered by providers, and student enrollment by type of instruction.

Data sources. This study used three data sources: websites of state departments of education (Kentucky Department of Education 2008a, Tennessee Department of Education 2008b, Virginia Department of Education 2008a, and West Virginia Department of Education 2008a); state departments of education administrative records provided by state supplemental educational services coordinators (Kentucky Department of Education 2008b, Tennessee Department of Education 2008a, Virginia Department of Education 2008b, and West Virginia Department of Education 2008b); and the Common Core of Data (U.S. Department of Education 2008).

Analysis. The analysis for this study consisted of the following steps:

- Determining the number of schools required to offer supplemental educational services and the number of eligible students in each school.
- Identifying all approved providers in districts in which schools are required to offer supplemental educational services.
- Classifying the type of instruction offered by each provider (conventional, computer-only, or mixed-mode).
- Calculating descriptive statistics for enrollment patterns, number of hours of services contracted and attended by enrollees, and types of instruction made available by providers and used by enrollees in supplemental educational programs.

The study used data on all public schools in Tennessee, Virginia, and West Virginia and 98 percent of the public schools in Kentucky for 2007/08. (See appendix A for additional details about the data and methodology.)

The study methodology—including data sources and analysis methods—is summarized in box 3 and described fully in appendix A.

STUDY FINDINGS

This section reports on the findings on the supply and use of supplemental educational services in the four REL Appalachia states.

Student eligibility and enrollment in supplemental educational services

Student eligibility. Small percentages of students in the REL Appalachia region attended schools that were required to offer supplemental educational services in 2007/08 (figure 1). Eligibility ranged from 2 percent of students in Virginia to 10 percent in Kentucky.

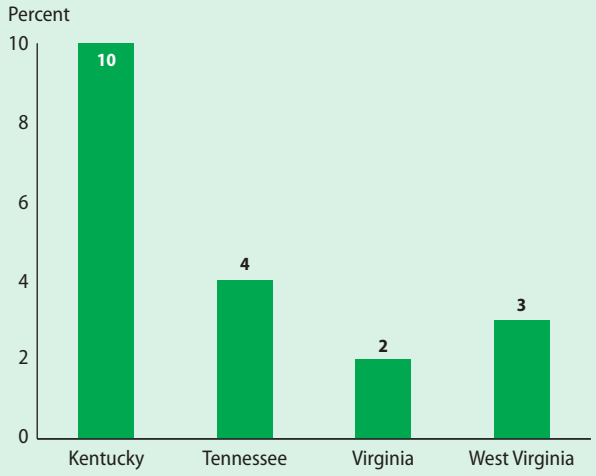
Within schools required to offer supplemental educational services, only students from low-income households are eligible to receive these services. Thus, the percentage of students eligible for supplemental educational services was even smaller than the percentage of students enrolled in schools required to offer supplemental educational services, ranging from 1 percent in Virginia to 7 percent in Kentucky (figure 2).

Eligibility rates for students in schools required to offer supplemental educational services were generally similar in rural and urban schools in Kentucky, Tennessee, and West Virginia (figure 3). In Virginia, however, eligibility in rural schools required to provide services (40 percent) was only half that in urban schools (81 percent).

Enrollment in supplemental educational services. Enrollment rates among students eligible for

FIGURE 1

Percentage of REL Appalachia students enrolled in schools required to offer supplemental educational services in 2007/08, by state

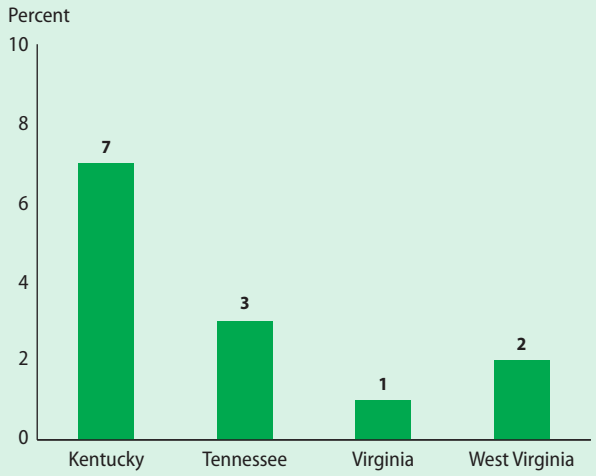


Note: The number of students in all schools was 655,018 in Kentucky, 958,578 in Tennessee, 1,228,483 in Virginia, and 281,361 in West Virginia.

Source: Authors' calculations based on data from U.S. Department of Education (2008), Kentucky Department of Education (2008a), Tennessee Department of Education (2008b), Virginia Department of Education (2008a), and West Virginia Department of Education (2008a).

FIGURE 2

Percentage of REL Appalachia students eligible for supplemental educational services in 2007/08, by state

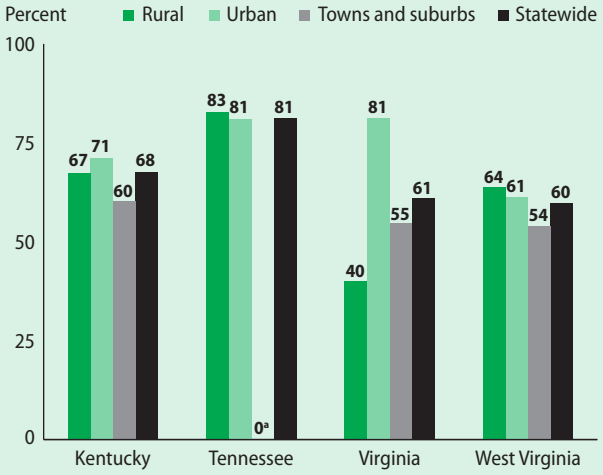


Note: The number of students in all schools was 655,018 in Kentucky, 958,578 in Tennessee, 1,228,483 in Virginia, and 281,361 in West Virginia.

Source: Authors' calculations based on data from U.S. Department of Education (2008), Kentucky Department of Education (2008a), Tennessee Department of Education (2008b), Virginia Department of Education (2008a), and West Virginia Department of Education (2008a).

FIGURE 3

Percentage of REL Appalachia students enrolled in schools required to offer supplemental educational services who were eligible for such services in 2007/08, by state and school locale



a. No schools in towns and suburbs were required to offer supplemental educational services, so no students were eligible.

Note: The number of students in all schools required to offer supplemental educational services was 62,380 in Kentucky, 39,411 in Tennessee, 24,212 in Virginia, and 6,922 in West Virginia.

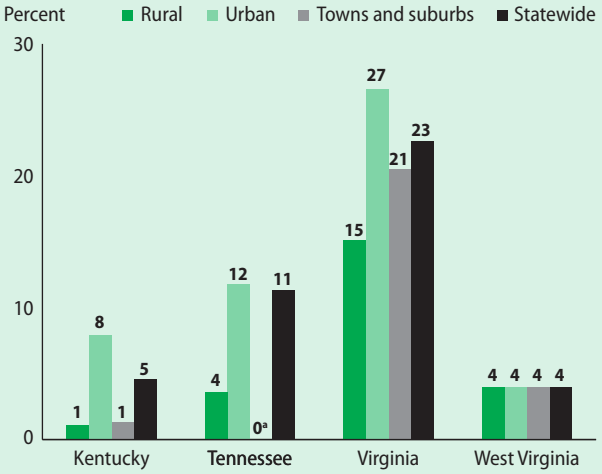
Source: Authors' calculations based on data from U.S. Department of Education (2008), Kentucky Department of Education (2008a), Tennessee Department of Education (2008b), Virginia Department of Education (2008a), and West Virginia Department of Education (2008a).

supplemental educational services in 2007/08 ranged from 4 percent to 23 percent across the REL Appalachia region (figure 4). In three states, enrollment rates were substantially lower in rural than in urban schools. In Virginia, the enrollment rate in rural schools was 15 percent, just over half the 27 percent in urban schools. In Tennessee, the enrollment rate in rural schools was 4 percent, or one-third the 12 percent in urban schools. And in Kentucky, the enrollment rate in rural schools was 1 percent, compared with 8 percent in urban schools. Only in West Virginia was enrollment similar across school locales (approximately 4 percent).

In Kentucky and Virginia, enrollment rates were also lower in schools in towns and suburbs than in urban schools. No schools in Tennessee towns and suburbs were required to offer supplemental educational services. The variation in enrollment rates by type of locale was greatest in Virginia (a 12 percentage point range), more modest in Kentucky

FIGURE 4

Percentage of eligible REL Appalachia students enrolled in supplemental educational services in 2007/08, by state and school locale



a. No schools in towns and suburbs were required to offer supplemental educational services, so no students were eligible.

Note: The number of eligible students in all schools was 42,251 in Kentucky, 31,983 in Tennessee, 14,764 in Virginia, and 4,139 in West Virginia.

Source: Authors' calculations based on data from U.S. Department of Education (2008), Kentucky Department of Education (2008a, 2008b), Tennessee Department of Education (2008a, 2008b), Virginia Department of Education (2008a, 2008b), West Virginia Department of Education (2008a, 2008b).

TABLE 1

Average number of tutoring hours contracted for by students eligible for supplemental educational services in Tennessee and West Virginia in 2007/08, by school locale

School locale	Tennessee	West Virginia
Rural	31	55
Urban	38	30
Towns and suburbs	na	35
Statewide average	38	42

na is not applicable; no schools in towns and suburbs were required to offer supplemental educational services, so no students were eligible.

Note: The number of enrollees in Tennessee was 3,615 (61 rural, 3,554 urban). The number of enrollees statewide and in urban locales in West Virginia is suppressed to avoid risk of disclosure when combined with data elsewhere in the report; the number of enrollees in rural locales was 66, and in towns and suburbs was 45.

Source: Authors' calculations based on data from Tennessee Department of Education (2008a), West Virginia Department of Education (2008b), and U.S. Department of Education (2008).

(7 percentage points) and Tennessee (8 percentage points), and nonexistent in West Virginia.

Tutoring hours contracted for

Data on contracted hours for supplemental educational services were available only for Tennessee and West Virginia. In 2007/08, enrollees contracted for an average of 38 hours of supplemental educational services in Tennessee and 42 hours in West Virginia (table 1).

On average, in Tennessee enrollees from urban schools contracted more hours than did their counterparts in rural schools, while in West Virginia, the opposite was true. In West Virginia, average contracted hours for enrollees in schools in towns and suburbs fell between the urban and rural averages.

Tutoring hours attended

On average, enrollees in Tennessee attended the most hours of tutoring (28 hours), followed by enrollees in West Virginia (25 hours), Virginia (23 hours), and Kentucky (15 hours; figure 5).[3]

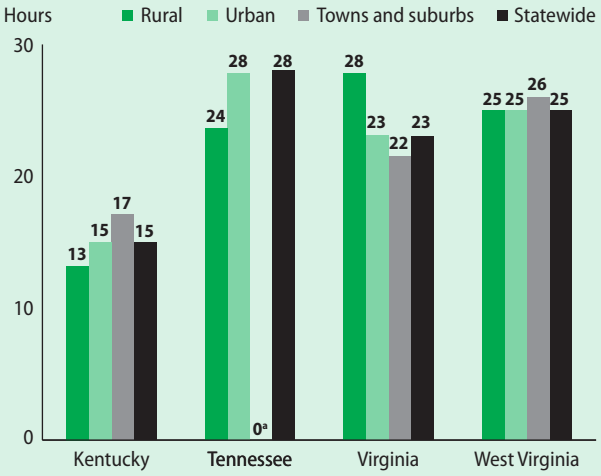
In Tennessee, enrollees in urban schools attended more hours of tutoring, on average, than did enrollees in schools in rural locales. In Kentucky, enrollees in schools in towns and suburbs attended more hours of tutoring than the state average, while in Virginia, enrollees in rural schools attended more tutoring hours than the state average. In West Virginia, there was little variation across locales.

In Tennessee and West Virginia, approximately one-third of enrollees received all their contracted hours, one-third received at least half, and one-third received less than half (figure 6).[4] District coordinators in Kentucky and Virginia did not report contracted hours received.

The percentage of total contracted hours received also differed in Tennessee and West Virginia. Enrollees received an average of 73 percent of their contracted hours in Tennessee and 60 percent in West Virginia (table 2).[5] In Tennessee, the percentage of contracted hours received was similar in rural and urban schools, but in West Virginia, the contract completion rate was much higher in urban schools and schools in towns and suburbs than in rural schools.

FIGURE 5

Average number of tutoring hours attended by REL Appalachia region students enrolled in supplemental educational services in 2007/08, by state and school locale



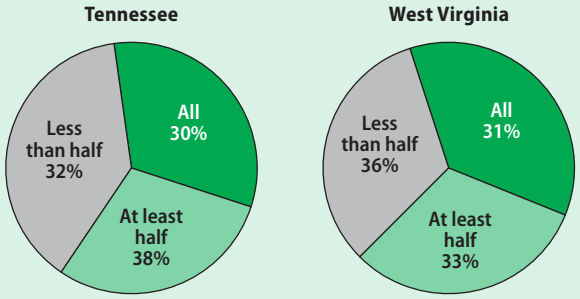
a. No schools in towns and suburbs were required to offer supplemental educational services, so no students were eligible.

Note: The number of enrollees was 1,946 in Kentucky, 3,615 in Tennessee, and 3,344 in Virginia. The number of enrollees in West Virginia is suppressed to avoid risk of disclosure when combined with data elsewhere in the report. In Kentucky, less than three rural schools required to offer supplemental educational services did not report student contracts and are excluded from the results.

Source: Authors' calculations based on data from Kentucky Department of Education (2008b), Tennessee Department of Education (2008a), Virginia Department of Education (2008b), and West Virginia Department of Education (2008b).

FIGURE 6

Percentage of Tennessee and West Virginia students enrolled in supplemental educational services in 2007/08, by portion of annual contracted hours received



Note: The number of enrollees was 3,615 in Tennessee. The number of enrollees in West Virginia is suppressed to avoid risk of disclosure when combined with data elsewhere in the report. Data are not available for Kentucky and Virginia.

Source: Authors' calculations based on data from Tennessee Department of Education (2008a) and West Virginia Department of Education (2008b).

Approved providers and types of instruction offered

In 2007/08, the number of approved providers of supplemental educational services varied from a low of 27 in West Virginia to a high of 69 in Virginia. Kentucky had 41 approved providers, and Tennessee had 36. Even though not all vendors who were approved to provide services actually did so, all state-approved providers are included in the analysis of the types of services offered. The providers reported information on the type of instruction offered to each district.[6] Conventional instruction (face-to-face with no computer instruction) was the most common type in all four states (figure 7). In Kentucky, conventional instruction (76 percent) was followed by computer-only (17 percent) and mixed-mode (7 percent). In the other three states, conventional

TABLE 2

Percentage of contracted hours of tutoring received by students enrolled in supplemental educational services in Tennessee and West Virginia in 2007/08, by school locale

	Tennessee		West Virginia	
School locale	Contracted hours received (percent)	Number of enrollees	Contracted hours received (percent)	Number of enrollees
Rural	76	61	46	66
Urban	73	3,554	81	*
Towns and suburbs	na	na	74	45
Total	73	3,615	60	*

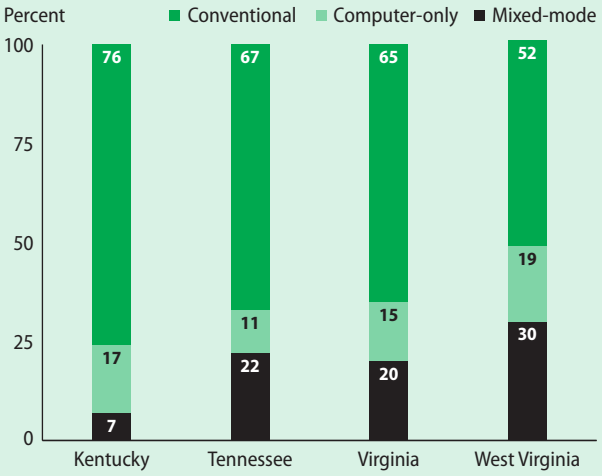
* Value is suppressed to avoid risk of disclosure when combined with data elsewhere in the report.

na is not applicable; no schools in towns and suburbs were required to offer supplemental educational services, so no students were eligible.

Source: Authors' calculations based on data from Tennessee Department of Education (2008a), West Virginia Department of Education (2008b), and U.S. Department of Education (2008). Data are not available for Kentucky and Virginia.

FIGURE 7

Type of supplemental educational services instruction offered by approved providers in the REL Appalachia region in 2007/08, by state

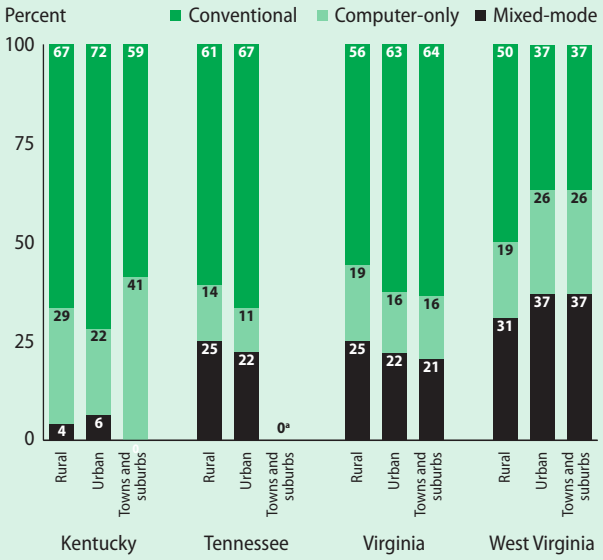


Note: Components may not sum to 100 because of rounding. The total number of unique approved providers was 41 in Kentucky, 36 in Tennessee, 69 in Virginia, and 27 in West Virginia. The percentages are based on the total number of unique approved providers. Some providers offer services statewide; others operate locally. Thus, the percentage of providers offering each type of instruction may differ between state and school locale levels if providers operate in multiple locations.

Source: Authors' calculations based on data from Kentucky Department of Education (2008b), Tennessee Department of Education (2008a), Virginia Department of Education (2008b), West Virginia Department of Education (2008b), and U.S. Department of Education (2008).

FIGURE 8

Type of supplemental educational services instruction offered by approved providers in the REL Appalachia region in 2007/08, by state and school locale



a. No schools in towns and suburbs were required to offer supplemental educational services, so no students were eligible.

Note: Components may not sum to 100 because of rounding. The total number of approved providers in each locale was as follows: Kentucky (rural, suppressed to avoid risk of disclosure when combined with data elsewhere in the report; urban, suppressed to avoid risk of disclosure when combined with data elsewhere in the report; towns and suburbs, $n = 17$), Tennessee (rural, $n = 28$; urban, $n = 36$), Virginia (rural, $n = 52$; urban, $n = 64$; towns and suburbs, $n = 63$), and West Virginia (rural, $n = 26$; urban, $n = 19$; towns and suburbs, $n = 19$). Percentages were calculated out of the total number of providers for each locale in the state. The number of providers in each locale may not sum to the total number of unique providers for the state because providers may offer services in more than one locale within a state.

Source: Authors' calculations based on data from Kentucky Department of Education (2008b), Tennessee Department of Education (2008a), Virginia Department of Education (2008b), West Virginia Department of Education (2008b), and U.S. Department of Education (2008).

instruction was followed by mixed-mode (combination of computer and face-to-face instruction) and computer-only.

In Kentucky, conventional instruction was most common in urban locales (figure 8). Computer-only instruction was offered by a higher percentage of Kentucky providers in towns and suburbs than in rural and urban locales. And the percentage of providers offering mixed-mode instruction ranged from none in towns and suburbs to 4 percent in rural locales and 6 percent in urban locales.

In Tennessee, conventional instruction was the most common type in rural and urban locales. While Tennessee had the smallest percentage of providers offering computer-only instruction, it was offered by a greater percentage of rural providers than urban providers. Approximately one-fourth of providers in rural and urban locales offered mixed-mode instruction.

In Virginia, conventional instruction was offered more in towns and suburbs and urban locales than in rural locales. Virginia providers offered mixed-mode and computer-only instruction more in rural locales than in urban locales or in towns and suburbs.

In West Virginia, as in the other three states, conventional instruction was the most common type of tutoring offered, but it was offered by a smaller percentage of providers than in the other states. The same percentage of providers (26 percent) offered computer-only instruction in both urban locales

and towns and suburbs, but only 19 percent did so in rural locales. A similar pattern was observed for mixed-mode instruction, offered by 37 percent of providers in urban locales and in towns and suburbs, compared with 31 percent in rural locales.

Not all providers offered services in all locales in a state. In West Virginia, no provider offered services in all three locales. Virginia had the highest percentage of providers offering services in all three locales (67 percent), followed by Kentucky (29 percent). In Tennessee, 78 percent of providers offered services in both rural and urban locales.

Types of instruction received

A large majority of enrollees in all four states and most locales within states contracted with providers offering conventional instruction (figures 9 and 10). Only in rural locales in Kentucky did enrollees enroll more with providers offering mixed-mode instruction (51 percent) than with providers offering conventional instruction (33 percent) and computer-only instruction (16 percent). No Kentucky enrollees in urban locales or towns and suburbs enrolled with providers offering mixed-mode instruction.

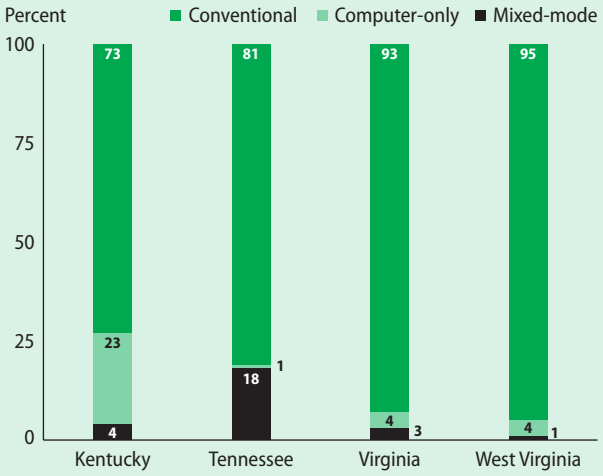
In Tennessee, most students enrolled in conventional instruction services (81 percent), particularly in urban locales (82 percent versus 56 percent in rural locales). There were no eligible students in Tennessee towns and suburbs. Nearly all other enrollees in Tennessee contracted with providers offering mixed-mode instruction (18 percent). No rural enrollees and only 1 percent of urban enrollees selected providers offering computer-only instruction.

In Virginia, at least 80 percent of enrollees in all locales contracted for conventional instruction. In rural locales, 20 percent of enrollees contracted with providers offering computer-only instruction, a higher rate than in urban locales or towns and suburbs. By locale type, 0–6 percent of students enrolled with providers offering mixed-mode instruction.

In West Virginia, all enrollees in rural locales contracted with providers offering conventional instruction, even though these providers constituted only half of the approved providers. Providers offering conventional instruction were also the most commonly selected by enrollees in urban locales and in towns and suburbs. Statewide, only 1 percent of enrollees contracted with a provider offering mixed-mode instruction; all were in schools in urban locales.

FIGURE 9

Type of supplemental educational services instruction enrolled in by REL Appalachia region students in 2007/08, by state



Note: Components may not sum to 100 because of rounding. The number of enrollees was 1,946 in Kentucky, 3,615 in Tennessee, and 3,344 in Virginia. The number of enrollees in West Virginia is suppressed to avoid risk of disclosure when combined with data elsewhere in the report.

Source: Authors' calculations based on data from Kentucky Department of Education (2008b), Tennessee Department of Education (2008a), Virginia Department of Education (2008b), West Virginia Department of Education (2008b), and U.S. Department of Education (2008).

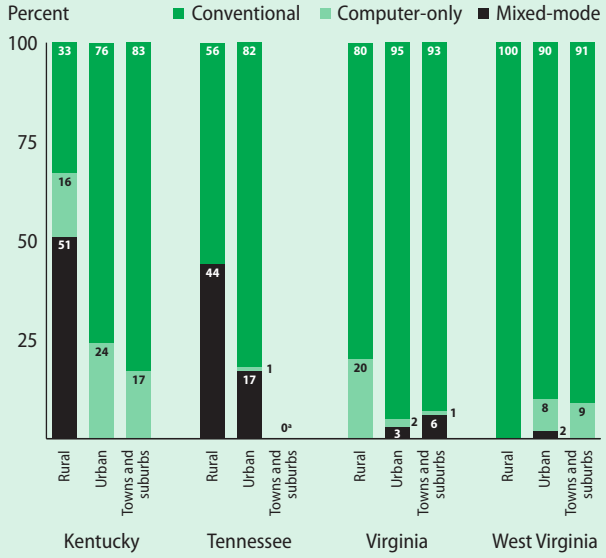
STUDY LIMITATIONS

Several limitations to this study could affect interpretation of the results:

- This study did not examine why there were variations in supplemental educational services enrollment and providers.
- Data on enrollment might be incomplete for some schools and districts. Records might have been missing for providers who discontinued

FIGURE 10

Type of supplemental educational services instruction enrolled in by REL Appalachia region students in 2007/08, by state and school locale



*No schools in towns and suburbs were required to offer supplemental educational services, so no students were eligible.

Note: Components may not sum to 100 because of rounding. The number of enrollees in each state by locale was as follows: Kentucky (rural, $n = 134$; urban, $n = 1,711$; towns and suburbs, $n = 101$), Tennessee (rural, $n = 61$; urban, $n = 3,554$), Virginia (rural, $n = 364$; urban, $n = 1,962$; towns and suburbs, $n = 1,018$), and West Virginia (rural, $n = 66$; urban, suppressed to avoid risk of disclosure when combined with data elsewhere in the report; towns and suburbs, $n = 45$).

Source: Authors' calculations based on data from Kentucky Department of Education (2008b), Tennessee Department of Education (2008a), Virginia Department of Education (2008b), West Virginia Department of Education (2008b), and U.S. Department of Education (2008).

providing supplemental educational services for a school. In addition, provider enrollment data are collected at the end of the school year, possibly affecting the quality of the data for students who transferred into or out of schools that were required to offer supplemental educational services during the year.

- According to the NCLB Act, all students from low-income households who attend schools required to offer supplemental educational services are eligible for such services. When parental demand for services exceeds district funding, however, guidelines mandate that districts prioritize eligible students with the lowest scores on state assessments. This study assumes that funding was available for all eligible students, even though there might have been eligible students for whom services were not funded.[7]

- Provider applications were used to determine the type of instruction being offered. Services received by enrollees were not verified. Similarly, if a provider proposed offering services to a district with multiple eligible schools, it was assumed that the same type of instruction was offered to all eligible students within that district.

- Provider applications were reviewed to determine which school districts each provider offered to serve. It was assumed that tutoring would be available to all eligible students in any district in which an approved provider offered services. In practice, however, a provider might have serviced only some eligible schools in a district, so that the availability of providers reported by school locale may overestimate the actual availability of services.

NOTES

1. Schools may identify additional students from low-income households using other sources such as welfare rolls or records of siblings in the free or reduced-price lunch program.

2. The purposes and specific research questions for this study are based on informal communications with individual state directors of supplemental educational services about the challenges of serving rural students, and a conference call with all four state directors in January 2008.

3. If students with zero hours of attendance are included in the calculation, the average values stay the same for Tennessee and Virginia and fall by less than half an hour for Kentucky and West Virginia (see table A4 in appendix A).

4. In both states, the percentage of students completing less than half their contracted hours changes by less than 1 percentage point if enrollees who received no services are included (see table A3 in appendix A).

5. The percentage of the contracted hours of tutoring received by the average enrollee was also calculated. The findings were similar to those reported here. (See appendix table A4.)

6. Providers might not have offered the same types of services to all schools in a district, and the actual services students received might have differed from what the provider reported.

7. Informal conversations with supplemental educational services coordinators indicate that parental demand generally did not exceed funding. A U.S. Government Accountability Office (2006) study estimates that of the approximately 1,000 districts required to offer supplemental educational services in 2004/05, an estimated 16 percent reported that Title I allocations per student were not sufficient to satisfy parental demand. However, a report by the Chicago Public Schools, Office of Research, Evaluation, and Accountability (2007) indicated that parental demand for services far exceeded Chicago's designated Title I funds, with funding available for only 55,600 of the approximately 75,000 students registering for tutoring. Both reports indicate that insufficient funding might be more common in large urban districts. If the same issues affect urban schools in the REL Appalachia region states, the enrollment rates for urban schools in this study could be subject to greater error in underreporting, strengthening the finding that students in rural schools tend to enroll in supplemental educational services less frequently than do their urban counterparts.

APPENDIX A
DATA SOURCES AND METHODOLOGY

This appendix describes the data sources, data collection of state administrative records, procedures for handling missing data, procedures for handling multiple or duplicate records, and data analysis methods. The study uses data for almost all public schools in Kentucky, Tennessee, Virginia, and West Virginia during the 2007/08 school year. Missing data are also described. Tests of statistical significance were not conducted because the analyses use population data (the entire population of schools and students in each state), not a sample.

Data sources

Data were collected from three sources:

- *State departments of education websites* (Kentucky Department of Education 2008a; Tennessee Department of Education 2008b; Virginia Department of Education 2008a; and West Virginia Department of Education 2008a). State departments of education listed on their websites the Title I schools that had not made adequate yearly progress for at least three consecutive years under the No Child Left Behind Act. These state- and school-level data from 2007/08 were used to determine the number of schools required to offer supplemental educational services. This number was compared with the number of schools offering services (based on the administrative records described below) to determine whether any schools were required to offer services but had no students enrolled in supplemental educational services.

- *Administrative records from state departments of education* (Kentucky Department of Education 2008b; Tennessee Department of Education 2008a; Virginia Department of Education 2008b; and West Virginia Department of Education 2008b). State coordinators of supplemental educational services and representatives of schools and districts offering services provided data to the Center for Research in Educational Policy. Student-level data included information on enrollees at each school. Characteristics of approved providers were available from provider applications in each state.

- *Common Core of Data.* The Common Core of Data (U.S. Department of Education 2008) provided data on the number of schools in each state, the number of students in each school, and the locale (urban, rural, or towns and suburbs; see box 2 in main report) for each school in 2007/08. This site also provided data on the number of students in each school receiving free or reduced-priced lunch, which was used to determine the number of eligible students in each school.

This study brings together state data on supplemental educational services not available from other sources. As external evaluators of service implementation in the four Regional Educational Laboratory (REL) Appalachia region states, researchers from the Center for Research in Educational Policy worked closely with key state and district personnel to ensure that the demographic data were as precise as possible. Key data sources for this report include the district-level student demographic files provided by the state and district coordinators of supplemental educational services. The center collected, reviewed, and cleaned these demographic files. Cleaning included follow-up correspondence with schools and districts to ensure that the data reflected students' tutoring experiences as thoroughly and accurately as possible. Table A1 summarizes key information on the data sources and variables used to address each research question.

Data collection of state administrative records

All four REL Appalachia region state departments of education had previously contracted with the Center for Research in Educational Policy to evaluate the effectiveness of supplemental educational services programs for 2007/08. The center

TABLE A1

Variables and data sources used to answer each research question

Research question	Variables	Data sources
• What percentage of students were eligible to enroll in supplemental educational services, what percentage enrolled, and how did enrollment vary by state and school locale?	• Number of students attending all schools, by state and school locale • Number of students attending schools required to offer supplemental educational services, by state and school locale • Number of eligible students per school, by state and school locale • Number of eligible students enrolled, by state and school locale	• Administrative records from state departments of education • Websites from state departments of education
• How many tutoring hours did enrollees contract for, and how did these hours vary by state and school locale?	• Number of eligible students enrolled, by state and school locale • Number of tutoring hours contracted per enrolled student, by state and school locale	• Administrative records from state departments of education
• How many tutoring hours and what percentage of contracted hours did enrollees attend, and how did these hours vary by state and school locale?	• Number of tutoring hours attended per enrolled student, by state and school locale • Number of tutoring hours contracted per enrolled student, by state and school locale	• Administrative records from state departments of education
• How many approved providers did each state have, and how did the number of providers vary by state? • What types of instruction were offered, what percentage of providers offered each type, and how did the percentages vary by state and locale?	• Number of approved providers, by state and school locale • Type of instruction offered by providers • School locales in which providers offered services	• Administrative records from state departments of education
• What percentage of enrollees received each type of instruction, and how did the percentages vary by state and locale?	• Number of eligible students enrolled, by state and school locale • Provider in which enrolled students received tutoring, by state and school locale	• Administrative records from state departments of education

Source: Administrative records, Kentucky Department of Education 2008b; Tennessee Department of Education 2008a; Virginia Department of Education 2008b; and West Virginia Department of Education 2008b; state department of education websites, Kentucky Department of Education 2008a; Tennessee Department of Education 2008b; Virginia Department of Education 2008a; and West Virginia Department of Education 2008a; Common Core of Data (U.S. Department of Education 2008).

completed three reports for Kentucky (Neergaard, Paek, et al. 2009a, 2009b; Zoblotsky and Gallagher 2009a); three for Tennessee (Neergaard, Harrison, et al. 2009a, 2009b; Center for Research in Educational Policy 2008); two for Virginia (Ford, Harrison, Neergaard, Park, et al. 2009a, 2009b); and three for West Virginia (Ford, Harrison, Neergaard, Hunter, et al. 2009a, 2009b; Zoblotsky and Gallagher 2009b). The data from state administrative records examined in the current study were collected during these earlier evaluations.

Enrollment data were collected from electronic files provided by district and state personnel in charge of supplemental educational services. The files were compiled by the state from monthly or

annual reports submitted by each district. Each state database was reviewed independently by at least two Center for Research in Educational Policy staff members, and data were cleaned to ensure completeness and accuracy. When data were incomplete, school and district personnel were asked for more information or clarification.

State coordinators of supplemental educational services also provided electronic files on approved providers, compiled from the applications submitted by each provider to the state's department of education. The applications identified provider characteristics, including the proposed structure of tutoring (independent seatwork, group assignments), the type of instruction, and the districts where services would be offered. This information was used to classify the type of services offered by each provider (conventional, computer-only, or mixed-mode instruction). In practice, however, a provider might not have offered the same services to all schools in a district, and the actual services students received might have differed from those listed in the provider's application.

Handling missing data

Variables missing data statewide. Kentucky and Virginia did not report the total number of tutoring hours attended by enrollees. Thus the average number of contracted hours attended and percentage of contracted hours received were computed only for Tennessee and West Virginia.

Variables missing data for individual schools. In Kentucky, fewer than three of the rural schools required to provide supplemental educational services (with 2,085 eligible students) submitted no records on the number of tutoring hours attended. These schools were excluded only from calculations of the average number of tutoring hours attended and the percentage of annual contracted hours received (tables A3 and A4 and figure 5 in the main report).

Records for enrolled students who did not attend a tutoring session. Some eligible students might have enrolled in services but dropped out before attending a tutoring session. The four REL Appalachia region states differed in how or whether they tracked such student enrollment records. Eligible students with zero hours of attendance were not defined as enrollees for this study and were excluded from calculations of enrollment rates and the distribution of enrollees in each type of instruction, so that results were comparable across states. A sensitivity test, described below, shows how the results change if these students are included in the calculations.

The data for Kentucky were missing the number of tutoring hours attended for 86 eligible students (2.8 percent of the state's enrolled students). According to district supplemental educational services personnel, these 86 students enrolled in services but did not attend a tutoring session (40 enrolled in schools in towns and suburbs, and 46 enrolled in rural schools).

In Tennessee, four eligible students from urban schools were identified as attending zero hours of tutoring. In Virginia, enrollment data included only students who attended more than zero hours. West Virginia had fewer than three eligible students from a school in a town and suburb who attended zero hours of tutoring. Because of the small number of eligible students with zero hours of tutoring in these states, most districts likely did not track students who enrolled but dropped out before attending a tutoring session.

Handling multiple or duplicate records

In Tennessee and West Virginia, the number of tutoring hours attended by enrollees was recorded in one of three ways: reading only (37 percent of students in Tennessee and 19 percent of students in West Virginia), math only (11 percent in Tennessee and 14 percent in West Virginia), or both reading and math (51 percent in Tennessee and 66 percent in West Virginia). In both states, data on subject-area tutoring were missing for approximately 1 percent of enrolled students. For enrollees in both reading and math, the number of tutoring hours in each subject could not be disaggregated.

In addition, for most student identification numbers, one record in the data file included a variable for the number of tutoring hours attended and a variable for the number of tutoring hours contracted. In the Tennessee data, some student identification numbers linked to multiple records; these cases were handled as follows:

- If multiple records for a student identification number showed the same student name and demographic information, it was assumed that a single student had been entered into the database more than once. If the number of tutoring hours was the same in all records, only one duplicate record was retained (0.2 percent of students). If the number of tutoring hours differed across the records, only the record with the highest number of tutoring hours was retained (0.7 percent of students).

- If multiple records for a student identification number showed different student names and demographic information, a data entry error in the student identification number was assumed. Both records were included in the file and treated as entries for two separate students (0.8 percent of students).

Kentucky and Virginia recorded student information differently from Tennessee and West Virginia. Enrollees had multiple records, with the number of tutoring hours attended in either reading or math. (Data on the number of hours contracted were not available for either state.) Thus, if a student attended tutoring in both reading and math, there would be two separate records.

Before the files were evaluated, the data structure was adjusted to ensure that students in Kentucky and Virginia were not double-counted and that enrollment hours were calculated comparably across all states. In the case of students in Kentucky and Virginia with two records, new files were created with one record per student, using the following procedures:

- If the subject areas (reading and math) were different, the number of hours in each subject were added to create a single record with the combined number of hours for the two subjects (49 percent of students in Kentucky and 12 percent of students in Virginia).

- If the subject areas were the same but the numbers of tutoring hours were different, the record with the higher number of tutoring hours was selected and the other record was deleted (0.1 percent of students in Kentucky and 0.3 percent of students in Virginia).

- If the subject areas and the numbers of tutoring hours were the same, one duplicate record was deleted (no students in Kentucky and 0.1 percent of students in Virginia).

Data analysis

For each analysis, results were calculated for both state and school locales.

Overall enrollment. Table A2 presents descriptive statistics on enrollment by state and school locale. Assessing enrollment involved identifying the total number of students in a state from the Common Core of Data (table A2, column a) and identifying the number of students in schools required to offer supplemental educational services from the state department of education websites (table A2, column b). These two variables were used to calculate the percentage of students in schools required to offer supplemental educational services (table A2, column c) as:

$$\frac{\text{Number of students in schools required to offer supplemental educational services}}{\text{Number of students in all schools.}}$$

The number of students eligible for supplemental educational services was the number of students receiving free or reduced-priced lunch at each school that was required to offer supplemental educational services (table A2, column d). The number of students receiving free or reduced-price lunch was drawn from the Common Core of Data

TABLE A2

Enrollment in supplemental educational services in the REL Appalachia region in 2007/08, by school locale and state

School locale	State	[a] Number of students in all schools	[b] Number of students in schools required to provide services	[c] Percent of students in schools required to provide services [b]/[a]	[d] Number of eligible students in schools required to provide services	[e] Percent of students who were eligible [d]/[a]	[f] Percent of eligible students attending schools required to provide services [d]/[b]	[g] Total number of enrollees	[h] Enrollment rate [g]/[d]
Rural	Kentucky	273,022	18,667	6.8	12,587	4.6	67.4	134	1.1
	Tennessee	358,110	2,062	0.6	1,710	0.5	82.9	61	3.6
	Virginia	380,830	6,014	1.6	2,411	0.6	40.1	364	15.1
	West Virginia	131,958	2,787	2.1	1,776	1.3	63.7	66	3.7
Urban	Kentucky	131,640	30,561	23.2	21,752	16.5	71.2	1,711	7.9
	Tennessee	293,072	37,349	12.7	30,273	10.3	81.1	3,554	11.7
	Virginia	287,465	9,081	3.2	7,378	2.6	81.2	1,962	26.6
	West Virginia	37,140	1,829	4.9	1,121	3.0	61.3	*	4.3
Towns and suburbs	Kentucky	250,356	13,152	5.3	7,912	3.2	60.2	101	1.3
	Tennessee	307,396	na	na	na	na	na	na	na
	Virginia	560,188	9,117	1.6	4,975	0.9	54.6	1,018	20.5
	West Virginia	112,263	2,306	2.1	1,242	1.1	53.9	45	3.6
Total	Kentucky	655,018	62,380	9.5	42,251	6.5	67.7	1,946	4.6
	Tennessee	958,578	39,411	4.1	31,983	3.3	81.2	3,615	11.3
	Virginia	1,228,483	24,212	2.0	14,764	1.2	61.0	3,344	22.6
	West Virginia	281,361	6,922	2.5	4,139	1.5	59.8	*	3.8

* Value is suppressed to avoid risk of disclosure when combined with data elsewhere in the report.

na is not applicable; no schools were required to offer supplemental educational services, so there were no eligible students.

Note: There were 45 schools in Kentucky and fewer than 3 each in Tennessee, Virginia, and West Virginia that had eligible students but for which no student contracts were reported.

Source: Authors' calculations based on data from U.S. Department of Education (2008), Kentucky Department of Education (2008a, 2008b), Tennessee Department of Education (2008a, 2008b), Virginia Department of Education (2008a, 2008b), and West Virginia Department of Education (2008a, 2008b).

(U.S. Department of Education 2008) and verified through state department of education websites. The percentage of students eligible for supplemental educational services (table A2, column e) was calculated as:

$$\frac{\text{Number of eligible students in schools required to offer supplemental educational services}}{\text{Number of students in all schools.}}$$

Next, enrollment rates were compared with the total number of students attending schools required to offer supplemental educational services. The percentage of eligible students attending schools required to offer supplemental educational services (table A2, column f) was calculated as:

$$\frac{\text{Number of eligible students in schools required to offer supplemental educational services}}{\text{Number of students in schools required to offer supplemental educational services.}}$$

Last, enrollment rates were calculated for eligible students. In all cases, *enrollee* was defined as any

student enrolled in supplemental educational services who attended any tutoring. Data on the number of eligible students in all schools (table A2, column d) and the total number of enrollees from state administrative records (table A2, column g) were used to calculate the average enrollment rate (table A2, column h):

$$\frac{\text{Number of enrollees}}{\text{Number of eligible students in schools required to offer supplemental educational services.}}$$

Enrollment breakdown. The average number of tutoring hours attended (table A3, column a) was calculated from the number of tutoring hours attended by each enrollee in reading/language arts, math, or both, as described above in the section on handling multiple or duplicate records. In all cases, *enrollee* is defined as a students with more than zero hours of tutoring; students with zero tutoring hours or missing data on the number of tutoring hours were excluded. The average number of tutoring hours attended in 2007/08 was calculated as:

TABLE A3

Tutoring hours attended and contracted by enrollees in supplemental educational services in the REL Appalachia region in 2007/08, by school locale and state

School locale	State	[a] Average number of tutoring hours attended by enrollees	[b] Average number of tutoring hours contracted for all enrollees	[c] Percent of contracted hours received by all enrollees [a]/[b]	[d] Percent of enrollees completing all their contracted hours	[e] Percent of enrollees completing at least half their contracted hours (50–99 percent)	[f] Percent of enrollees completing less than half their contracted hours (49 percent or less)
Rural	Kentucky	13.2[a]	—	—	—	—	—
	Tennessee	23.6	31.0	76.1	19.7	59.0	21.3
	Virginia	27.8	—	—	—	—	—
	West Virginia	25.4	55.4	45.9	19.7	16.7	63.6
Urban	Kentucky	15.0	—	—	—	—	—
	Tennessee	27.8	38.3	72.6	29.8	37.8	32.3
	Virginia	23.1	—	—	—	—	—
	West Virginia	24.6	30.4	80.9	39.6	43.8	16.7
Towns and suburbs	Kentucky	17.1	—	—	—	—	—
	Tennessee	na	na	na	na	na	na
	Virginia	21.5	—	—	—	—	—
	West Virginia	26.0	35.0	74.2	40.0	44.4	15.6
Total	Kentucky	15.0	—	—	—	—	—
	Tennessee	27.7	38.2	72.6	29.7	38.2	32.1
	Virginia	23.1	—	—	—	—	—
	West Virginia	25.3	42.1	60.1	31.4	32.7	35.8

— is not available; no data were available on the number of tutoring hours contracted.

na is not applicable; no schools were required to offer supplemental educational services, so there were no eligible students.

a. Fewer than three rural schools that were required to offer supplemental educational services did not report student contracts.

Note: Columns d, e, and f may not sum to 100 because of rounding.

Source: Authors' calculations based on data from Kentucky Department of Education (2008b), Tennessee Department of Education (2008a), Virginia Department of Education (2008b), West Virginia Department of Education (2008b), and U.S. Department of Education (2008).

$$\frac{\text{Total number of tutoring hours attended}}{\text{Total number of enrollees.}}$$

For all enrollees in Tennessee and West Virginia (data were not available for Kentucky and Virginia), the average number of tutoring hours contracted in 2007/08 (table A3, column b) was calculated as:

$$\frac{\text{Total number of tutoring hours contracted}}{\text{Total number of enrollees.}}$$

The percentage of contracted hours received by all enrollees (table A3, column c) was calculated as:

$$\frac{\text{Total number of tutoring hours attended}}{\text{Total number of tutoring hours contracted.}}$$

For example, imagine that student A contracted 20 hours and attended 12, student B contracted 10 hours and attended 8, and student C contracted 15 hours and attended 2. The number of tutoring hours attended would be 22, and the number of hours contracted would be 45. To calculate the percentage of the contracted hours received, the number of hours attended would be divided by the number of hours contracted (22/45 = 48.9 percent).

In addition, data on the percentage of contracted hours received were used to classify students as attending all their contracted hours (100 percent), at least half (50–99 percent), or less than half (49 percent or less; table A3, columns d–f).

As a sensitivity test, the enrollment breakdown was recalculated including eligible students with zero hours of attendance in 2007/08 (table A4). There was little effect on the results. For examples, in Tennessee, the portion of enrollees completing less than half their yearly contracted hours was 32.1 percent when only students with more than zero hours of attendance were included and 32.2 percent when all students who signed up for services were included, regardless of hours of attendance. For West Virginia, the corresponding values were 35.8 percent for enrollees with more than zero hours of attendance and 36.3 percent for all enrollees.

The enrollment breakdown was further assessed by calculating the percentage of contracted hours that the average enrollee received instead of the percentage of total contracted hours received. The average percentage of contracted hours received for each student was summed and then divided by the total number of students. Consider once again students A, B, and C: student A received 60.0 percent of contracted hours (12/20), student B, 80.0 percent (8/10), and student C, 13.3 percent (2/15). These percentages were summed (80 + 60 + 13.3 = 153.3) and divided by the number of students (153.3/3 = 51).

The findings were similar regardless of whether the enrollment breakdown was examined using the percentage of contracted hours received by all enrollees or the percentage of contracted hours received by the average enrollee (table A5). Contract completion rates were similar in rural and urban schools in Tennessee, but higher in urban schools than in rural schools in West Virginia.

Type of instruction offered by providers. All providers approved to offer services in districts required to offer supplemental educational services were identified. If a provider indicated an intent to offer services in a district, the provider was assumed to offer services to every school in that district that was required to offer services. No data were available on whether providers actually offered services to each school and district.

Next, providers were classified by type of instruction offered as identified in their applications, and the percentages of providers offering each type of instruction were calculated (table A6). Statistics on the percentage of providers offering each type of instruction might not reflect actual values, however, since the actual instruction attended by enrollees was not verified.

Type of instruction received by enrollees. Enrollment and provider data were used to identify the

TABLE A4

Tutoring hours attended and contracted by enrollees in supplemental educational services in the REL Appalachia region 2007/08, including enrollees attending zero tutoring hours, by school locale and state

School locale	State	[a] Average number of tutoring hours attended by all enrollees	[b] Average number of tutoring hours contracted by all enrollees	[c] Percent of contracted hours received by all enrollees [a]/[b]	[d] Percent of all enrollees completing all their contracted hours (100%)	[e] Percent of all enrollees completing at least half their contracted hours (50%–99%)	[f] Percent of all enrollees completing less than half their contracted hours (49% or less)
Rural	Kentucky	12.6[a]	—	—	—	—	—
	Tennessee	23.6	31.0	76.1	19.7	59.0	21.3
	Virginia	27.8	—	—	—	—	—
	West Virginia	25.4	55.4	45.8	19.7	16.7	63.6
Urban	Kentucky	15.0	—	—	—	—	—
	Tennessee	27.8	38.3	72.6	29.8	37.8	32.4
	Virginia	23.1	—	—	—	—	—
	West Virginia	24.6	30.4	80.9	39.6	43.8	16.7
Towns and suburbs	Kentucky	12.5	—	—	—	—	—
	Tennessee	na	na	na	na	na	na
	Virginia	21.5	—	—	—	—	—
	West Virginia	25.4	34.8	72.9	39.1	43.5	17.4
Total	Kentucky	14.7	—	—	—	—	—
	Tennessee	27.7	38.2	725	29.6	38.1	32.2
	Virginia	23.1	—	—	—	—	—
	West Virginia	25.2	42.1	64.1	31.2	32.5	36.3

— is not available; no data on the number of tutoring hours contracted.

na is not applicable; no schools were required to offer supplemental educational services, so there were no eligible students.

a. Fewer than three rural schools that were required to offer supplemental educational services did not report student contracts.

Source: Authors' calculations based on data from U.S. Department of Education (2008), Kentucky Department of Education (2008a, 2008b), Tennessee Department of Education (2008a, 2008b), Virginia Department of Education (2008a, 2008b), West Virginia Department of Education (2008a, 2008b).

provider chosen by each enrollee (as described in the section on handling multiple or duplicate records). When students were enrolled with more than one provider, the provider with which the student attended the most tutoring hours was used to determine the type of instruction received. The percentage of students enrolled with providers offering each type of instruction was calculated by dividing the number of students enrolled with providers offering each type of instruction by the total number of enrollees (table A7).

TABLE A5

Two methods of examining the enrollment breakdown in supplemental educational services in Tennessee and West Virginia in 2007/08, by school locale

School locale	State	Method of estimating enrollment breakdown		Difference
		Percent of total contracted hours received by all enrollees	Percent of contracted hours received by the average enrollee	
Rural	Tennessee	76.1	76.6	–0.5
	West Virginia	45.9	49.7	–3.8
Urban	Tennessee	72.6	76.3	–3.7
	West Virginia	80.9	82.0	–1.1
Towns and suburbs	Tennessee	na	na	na
	West Virginia	74.2	78.6	–4.4
Total	Tennessee	72.4	76.3	–3.9
	West Virginia	60.1	67.6	–7.5

na is not applicable; no schools were required to offer supplemental educational services, so there were no eligible students.

Note: The number of enrollees in Tennessee was 3,615 (61 rural, 3,554 urban). The number of enrollees statewide and in urban locales in West Virginia is suppressed to avoid risk of disclosure when combined with data elsewhere in the report; the number of enrollees in rural locales was 66, and in towns and suburbs was 45.

Source: Authors' calculations based on data from Kentucky Department of Education (2008b), Tennessee Department of Education (2008a), Virginia Department of Education (2008b), West Virginia Department of Education (2008b), and U.S. Department of Education (2008).

TABLE A6

Approved providers in the REL Appalachia region offering each type of instruction in 2007/08, by school locale and state

School locale	State	Conventional		Computer-only		Mixed-mode		Total	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
Rural	Kentucky	*	76	*	17	*	7	*	100
	Tennessee	17	61	4	14	7	25	28	100
	Virginia	29	56	10	19	13	25	52	100
	West Virginia	13	50	5	19	8	31	26	100
Urban	Kentucky	*	72	*	22	*	6	*	100
	Tennessee	24	67	4	11	8	22	36	100
	Virginia	40	63	10	16	14	22	64	100
	West Virginia	7	37	5	26	7	37	19	100
Towns and suburbs	Kentucky	10	59	7	41	0	0	17	100
	Tennessee	na	na	na	na	na	na	na	na
	Virginia	40	64	10	16	13	21	63	100
	West Virginia	7	37	5	26	7	37	19	100
Total	Kentucky	31	76	7	17	3	7	41	100
	Tennessee	24	67	4	11	8	22	36	100
	Virginia	45	65	10	15	14	20	69	100
	West Virginia	14	52	5	19	8	30	27	100

* Value is suppressed to avoid risk of disclosure ($N < 3$ for one or more categories).

na is not applicable; no schools were required to offer supplemental educational services, so there were no eligible students.

Note: Components may not sum to 100 because of rounding. Providers could be counted more than once if they offered services in more than one locale.

Source: Authors' calculations based on data from Kentucky Department of Education (2008b), Tennessee Department of Education (2008a), Virginia Department of Education (2008b), West Virginia Department of Education (2008b), and U.S. Department of Education (2008).

TABLE A7

Eligible REL Appalachia region students enrolled with providers offering each type of instruction in 2007/08, by school locale and state

School locale	State	Conventional		Computer-only		Mixed-mode		Total	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
Rural	Kentucky	44	32.8	22	16.4	68	50.7	134	100.0
	Tennessee	34	55.7	0	0.0	27	44.3	61	100.0
	Virginia	291	79.9	73	20.1	0	0.0	364	100.0
	West Virginia	66	100.0	0	0.0	0	0.0	66	100.0
Urban	Kentucky	1,300	76.0	411	24.0	0	0.0	1,711	100.0
	Tennessee	2,906	81.9	27	0.8	621	17.3	3,554	100.0
	Virginia	1,870	95.3	43	2.2	49	2.5	1,962	100.0
	West Virginia	*	89.6	*	8.3	*	2.1	*	100.0
Towns and suburbs	Kentucky	84	83.2	17	16.8	0	0.0	101	100.0
	Tennessee	na	na	na	na	na	na	na	na
	Virginia	944	92.7	12	1.2	62	6.1	1,018	100.0
	West Virginia	42	91.3	3	8.7	0	0.0	45	100.0
Total	Kentucky	1,428	73.4	450	23.1	68	3.5	1,946	100.0
	Tennessee	2,940	81.3	27	0.7	648	17.9	3,615	100.0
	Virginia	3,105	92.9	128	3.8	111	3.3	3,344	100.0
	West Virginia	*	95.0	*	4.4	*	0.6	*	100.0

* Value is suppressed to avoid risk of disclosure ($N < 3$ for one or more categories).

na is not applicable; no schools were required to offer supplemental educational services, so there were no eligible students.

Note: Components may not sum to 100 because of rounding. For students who attended multiple providers, the provider with which the student attended the largest number of tutoring hours to determine the type of service received.

Source: Authors' calculations based on data from Kentucky Department of Education (2008b), Tennessee Department of Education (2008a), Virginia Department of Education (2008b), West Virginia Department of Education (2008b), and U.S. Department of Education (2008).

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