National Forum on Education Statistics

Forum Guide to Elementary/Secondary Virtual Education Data

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National Cooperative Education Statistics System

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Contents

Chapter 1: Virtual Education

Rapid advancements and innovations in virtual education are providing education agencies, educators, and students with new opportunities for teaching and learning. In recent years, virtual education has become an integral part of K12 education and nearly every student is exposed to virtual learning in some context—whether as a single aspect of a traditional course or program, in an entirely virtual program, or in any combination of traditional and virtual learning. Virtual education is often a core aspect of curricula and class instruction, and students and teachers are increasingly adept at integrating lectures, lessons, and group work delivered via computers, tablets, and other devices into day-to-day teaching and learning. Moreover, many students and teachers no longer distinguish between virtual and traditional learning—the technology and tools used in virtual education are familiar to them and are no more novel than a pencil.

When properly employed, technology may enhance and support learning opportunities available to any student, at any location, and at any time. Determining which instructional and delivery methods are best for a specific individual, group of students, community, or circumstance demands that high-quality data be available to students, parents, instructors, administrators, and policymakers. Despite widespread interest in enhancing and expanding virtual teaching and learning, many state and local education agencies (SEAs and LEAs) do not yet have the ability to collect accurate, high-quality virtual education data. Some organizations have not yet specified the data they want to collect, while others have not developed reliable processes for gathering and managing data. The prevalence of virtual education, the increasing diversity in virtual education opportunities, and the rapid pace of technological change require new ways of thinking about how to modify data elements and systems to effectively identify, collect, and use virtual education data to inform and improve education.

Purpose of the Document

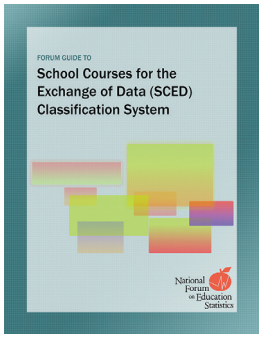
SEAs, LEAs, and other education stakeholders such as policymakers and researchers need data on virtual education to understand its uses and its impact on teaching and learning. This document was developed to assist SEAs and LEAs as they 1) consider the impact of virtual education on established data elements and methods of data collection, and 2) address the scope of changes, the rapid pace of new technology development, and the proliferation of resources in virtual education.

In 2006, the National Forum on Education Statistics (Forum) published the *Forum Guide to Elementary/Secondary Virtual Education* to address the need among SEAs and LEAs for information on virtual education, including considerations for modifying traditional data elements and systems to better capture virtual education data. The virtual education environment has grown in ways unanticipated in 2006, and includes vastly different technologies and approaches to teaching and learning. At the same time, new developments in the field of data standards such as the Common Education Data Standards (CEDS) and the School Courses for the Exchange of Data (SCED) have made it easier for SEAs and LEAs to collect, manage, compare, and use education data to inform and improve education.

Forum Guide to School Courses for the Exchange of Data (SCED) Classification System

http://nces.ed.gov/forum/pub_2014802.asp

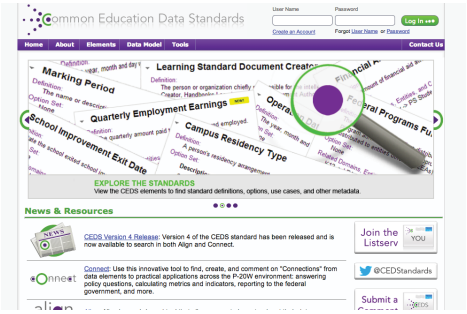
SCED is a voluntary, common classification system for prior-to-secondary and secondary school courses. It includes elements and attributes that identify basic course information and that can be used to compare course information, maintain longitudinal data about students' coursework, and efficiently exchange course-taking records. The Forum Guide to SCED provides an overview of the SCED Framework elements, recommended attributes, and information for new and existing users on best practices for implementing and expanding their use of SCED.



Common Education Data Standards

https://ceds.ed.gov/

The Common Education Data Standards (CEDS) project is a national collaborative effort to develop voluntary, common data standards for a key set of education data elements to streamline the exchange, comparison, and understanding of data within and across P-20 institutions and sectors. This common vocabulary enables more consistent and comparable data to be used throughout all education levels and sectors necessary to support improved student achievement. CEDS is a voluntary effort that increases data interoperability, portability, and comparability across states, districts, and higher education organizations.



In 2014, the Forum convened a working group to identify virtual education data collection challenges, explore data needs, and develop a resource that offers best practices for building, modifying, and updating data systems to incorporate virtual education data. This guide is intended to assist SEAs and LEAs as they implement and expand their use of virtual education methods and technologies, and as they modify data elements and data systems to collect data on virtual education programs to meet the information demands of the virtual education environment.

Chapter one examines the role of virtual education in the changing world of elementary and secondary education, reviews commonly used virtual education terminology, discusses the importance of high-quality data for informing policy, identifies challenges to collecting virtual education data, and suggests methods for modifying traditional education data definitions. Chapter 2 identifies data elements commonly used in virtual education data systems. Chapter 3 provides SEAs and LEAs with

- a list of topic areas for consideration when collecting virtual education data or modifying existing data systems to accommodate virtual education data;
- real world examples of the challenges involved in collecting quality virtual education data;
- virtual education policy questions;
- common practices for updating data systems and modifying data elements to encompass virtual education data; and
- links to data elements in CEDS that can be used to answer policy questions.

Appendices include

- examples of how SEAs and LEAs have addressed virtual education data collection challenges;
- links to SEA offices and websites that address virtual education;
- suggested elements for virtual education data systems; and
- additional resources.

The information may also be useful to policymakers and researchers who are interested in learning more about the collection, management, and use of virtual education data.

Introduction to Virtual Education

The term "virtual education" may include, but is not limited to, digital learning, distributed learning, open learning, networked learning, web-based education, online learning, cyber education, net education, computer-based learning, distance learning, blended learning, and other similar terms. Some of these terms focus on the concept of overcoming the physical boundaries of traditional face-to-face, teacher-student learning environments. Others emphasize the use of technology as a tool for accessing information that is unavailable locally. The bottom line, however, is that virtual education uses information and communications technologies to offer educational opportunities in a manner that transcends traditional limitations of time and space with respect to students' relationships with teachers, peers, and instructional materials.

For the purposes of this document, "virtual education" is defined as instruction during which students and teachers are separated by time and/or location and interact via internet-connected computers or other electronic devices. This broad definition includes numerous methods of delivering and accessing virtual education. Virtual education may include real-time instruction between teachers and students through an electronic medium unconstrained by geographic or temporal boundaries, coursework presented online for students to view at their own pace, collaborative online work that students access from their classrooms, and new variations that are evolving with the expansion of technology.

Developments in Educational Technology and Virtual Education

New technologies have enabled the expansion of virtual education and have brought about changes in teaching and learning. The U. S. Department of Education's Office of Educational Technology (OET) reports that, "today's technologies offer powerful capabilities for creating high-quality learning resources," including "visualization, simulation, games, interactivity, intelligent tutoring, collaboration, assessment, and feedback." The report adds that, "digital learning resources enable rapid cycles of iterative improvement," which "can be instantly distributed over the Internet" (OET 2013). Developments and expansion in mobile devices and application software (apps), social media, and online systems of earning and displaying credentials and certifications illustrate the technological advancements that are available to students and teachers as they seek new educational opportunities and resources.

For students to access and benefit from this vast array of new opportunities and technologies, educators must be able to identify high-quality resources, determine their effectiveness, and use them to engage students. SEAs, LEAs, and individual schools have developed different methods for providing students with access to virtual education resources:

- **Online supplemental resources**: The federal government and some SEAs have developed systems to assist educators with identifying quality resources that can supplement classroom learning. At the federal level,

OET is involved in the development of the Learning Registry, which collects information on online learning resources and thereby reduces the burden on educators of locating useful resources and assessing their quality.[1] At the SEA level, programs such as the Georgia Teacher Resource Link help educators identify resources that will address student learning deficits (see box).

Georgia Teacher Resource Link

The Georgia Department of Education (GADOE) developed the Teacher Resource Link to provide teachers with vetted digital resources that are aligned to Georgia standards. Resources are accessible through the state's statewide longitudinal data system (SLDS) application and can be searched by grade, subject, and standard. GADOE is expanding the Teacher Resource Link to allow LEAs to load local resources, develop item banks and online assessments, and assign digital resources to individual students through the platform. Additional information is available at http://www.gadoe.org/Technology-Services/SLDS/Pages/Teacher-Resource-Link.aspx, and Georgia's Path to Personalized Learning can be accessed at http://www.gadoe.org/Technology-Services/SLDS/PublishingImages/GA%20PPL.JPG.

Often, virtual education resources must be purchased by the SEA, LEA, or school, which can delay the implementation of resources by teachers. However, the expansion of open educational resources (OER) provides educators with access to free virtual education resources. OER includes "teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits sharing, accessing, repurposing—including for commercial purposes—and collaborating with others. These resources are an important element of an infrastructure for learning" (OET 2010). Twelve states have joined together to form the OER Collaborative.[2] The Collaborative creates comprehensive, high-quality open educational resources supporting K12 mathematics and English language arts that are aligned with state learning standards. While open educational resources are free and open to the public, they may be subject to SEA and LEA review and approval processes before they can be used in classrooms.

- **Integrated devices and resources**: SEAs, LEAs, and schools are increasingly integrating the use of devices, such as computers and tablets, into traditional classroom settings. One-to-one policies ensure that each student has access to a device, and bring your own device (BYOD) policies allow students to use their own devices for schoolwork. Both one-to-one and BYOD policies can provide increased opportunities for the classroom to become less teacher-centric and allow students more control over their own learning when they access resources and tools beyond the classroom. The integration of devices into classroom learning means that it is no longer possible in many classrooms to distinguish between traditional and virtual learning. For example, a group of students in a traditional classroom may use their devices to collaborate on an online project with multiple schools, while still interacting with the teacher and their fellow students in the classroom.

[1] The learning registry is a project of a group of federal agencies including the Departments of Education (OET), Defense (Advanced Distributed Learning), Energy, the National Science Foundation, Smithsonian, NASA, and other agencies. The registry and supporting documentation are available at http://learningregistry.org/.

[2] The OER Collaborative is a state-led project that is supported by non-profits in the field of OER and education. Additional information, including a full list of participating states and organizations, is available at http://k12oercollaborative.org/about/.

- **Completely online accredited education**: SEAs have begun offering accredited online programs in an effort to ensure that students and educators have access to quality virtual resources, including access to highly qualified teachers and curricula fully aligned with SEA standards. The implementation of completely online accredited education varies in each state. Some SEAs have chosen to partner with private online schools or programs, while others have developed their own schools and programs.

Figure 1: State Variations on Completely Online Accredited Education

The Washington State Office of Superintendent of Public Instruction maintains a list of approved online course providers and online school programs. Online course providers must be accredited prior to seeking approval by the state; district online school programs do not need to be accredited for the purposes of state approval (http://digitallearning.k12.wa.us/approval/providers/).

Idaho LEAs that are completely online or offer blended learning environments must be accredited and can graduate students by meeting Idaho's state graduation requirements.

Two Georgia academies operated by private companies have received charter school approval to operate their programs fully online. Georgia also has its own virtual school that enrolls both full- and part-time students. Some larger Georgia LEAs offer their own online school exclusively to students within the school district, some offer open enrollment to any student that is a resident of Georgia, and others will enroll students from a particular region, such as a collection of counties.

Organizational Structure of Virtual Education

Virtual education may be delivered by virtual schools or by traditional "brick-and-mortar" schools. Virtual schools are defined as public or private schools that offer only virtual courses and generally do not have a physical facility that allows students to attend classes on site on a regularly scheduled or required basis. Alternatively, brick-and-mortar schools may provide both conventional and virtual education programs. One difference between the two types of schools is that many virtual schools register students regardless of traditional administrative boundaries—in other words, students need not reside in a particular geographic area to take a class. Brick-and-mortar schools with virtual programs have the same capacity, but are sometimes limited by policy to established attendance areas and geographic boundaries.

Because the technology driving virtual education permits participation regardless of administrative boundaries—attendance areas, county lines, and state borders—restrictions on participation have largely become administrative and policy issues. Participation in virtual education is often determined by overarching rules and regulations, such as local or state laws limiting the transfer of funds across administrative boundaries or regulations requiring specific academic credentials to teach within a particular state or school district.

SEAs and LEAs that work with virtual providers often must develop or clarify policies that specify which institution is responsible for a student's data, how the Teacher of Record (the educator accountable for a student's or group of students' learning outcomes) is determined and assigned, what credentials these teachers must possess, and how virtual education funds are managed. The education agency providing the student's transcript is ultimately responsible for

evaluating the student's course credit, ensuring that the instructor is properly credentialed, managing course funding, and collecting all required data. This can be challenging when the content for a virtual education course is developed and administered outside the SEA or LEA, for example, by a company that provides virtual course content to multiple SEAs and LEAs. Common policy solutions include

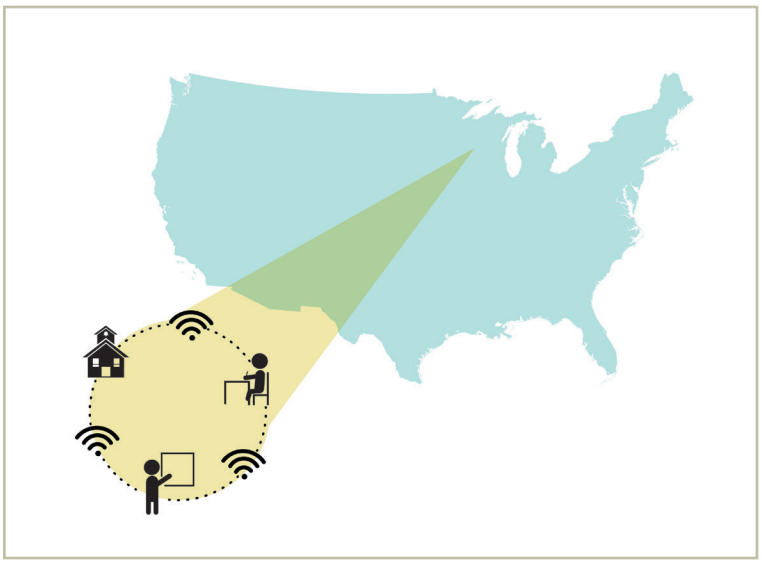
- maintaining responsibility for the student's data until such time as the student is no longer a resident of the area served by the SEA or LEA;
- ensuring that each virtual course has an established Teacher of Record who holds the appropriate credentials required by the SEA or LEA and who is responsible for evaluating student performance and awarding course credit; and
- channeling course funding through the SEA, LEA, or school that is responsible for the student's transcript.

These policies can assist SEAs and LEAs with data collection even in complex organizational scenarios:

Virtual Education Regulations in Washington State

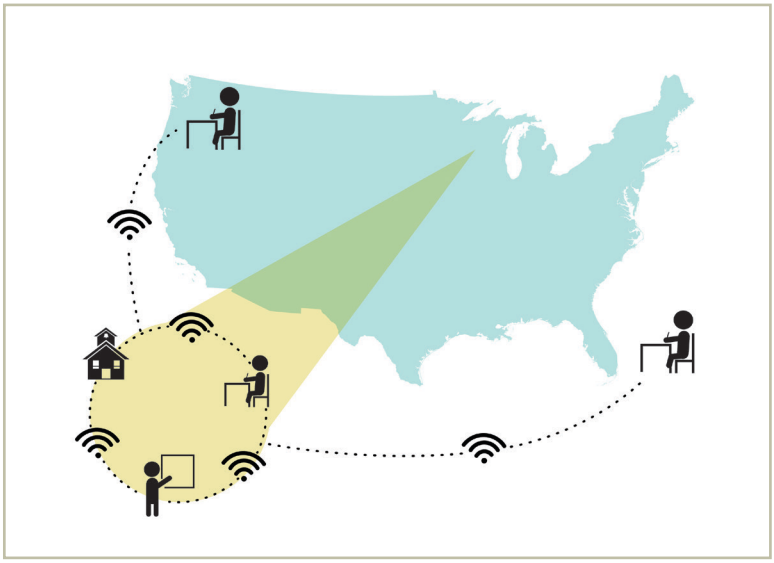
Washington State has regulatory structures for online learning, teacher certification, and student residency that preclude public school students from taking courses through a virtual school in another state and having that school claim funding from Washington. While an online school or online provider may be physically located in another state, that school or provider must be accredited and approved by Washington's Digital Learning Department to provide services to Washington State districts paid for with public funding. Out-of-state providers cannot claim state funding from Washington directly. Instead, they must contract with a Washington school district or charter school. Moreover, online teachers may reside in different states, but they must be certified in Washington.

Figure 2: Single LEA Scenario



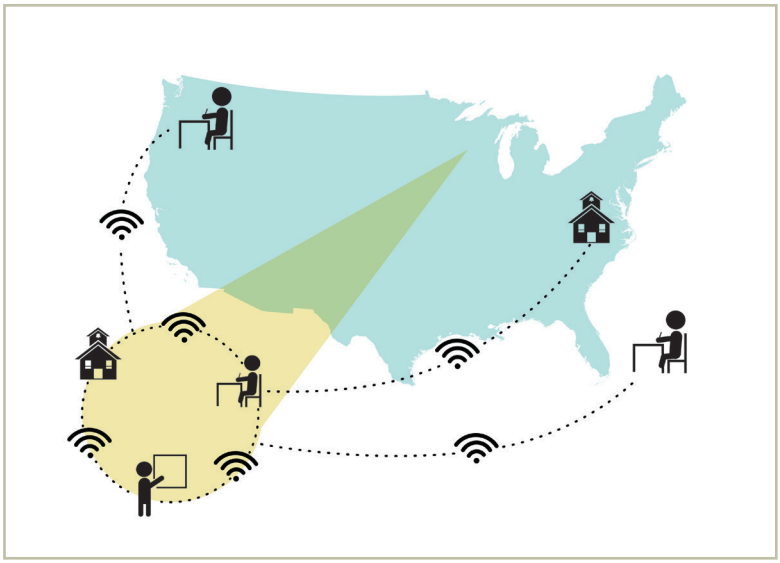
Single LEA Scenario: A student enrolls in an online course through their LEA. The online teacher is credentialed in the state, and all of the educational resources reside within the LEA's administrative boundaries. All tracking is the responsibility of one institution, and funding is managed within the LEA.

Figure 3: Traveling Student Scenario



Traveling Student Scenario: A student enrolls in an online course through their LEA. The online teacher is credentialed within the state. The student travels outside of the state for a period of time, but the original LEA in which the student enrolled maintains responsibility for the student. This situation often arises due to family military assignments, a guardian's extended business trip, or medical leave that requires treatment in another state. Unless the student changes residency, the original LEA maintains administrative responsibility for the student.

Figure 4: Out-of-State Instruction/Learning Scenario



Out-of-State Instruction/Learning Scenario: A student enrolls in an online course through the LEA; however, the actual instruction is provided by an agency outside the state. This scenario commonly occurs when SEAs and LEAs purchase online educational services. Such services often include content and assessment materials that are developed outside the state. This situation may become more complicated if the student travels outside the state for an extended period of time, and neither the student nor the instructional materials are physically located within the LEA's boundaries. In this scenario, the LEA maintains responsibility for the student as long as the student is a resident of the area served by the LEA. The LEA is also responsible for maintaining student data and ensuring that the Teacher of Record is appropriately credentialed. All funding is administered through the LEA or school responsible for the student, which in turn then pays the online educational service. If the student becomes a resident of an area served by another LEA, all records and financial burden should be moved to the new LEA. In some cases, inter-district or inter-state agreements exist to facilitate the transfer of student records and responsibility.

The rapid growth of teaching and learning technologies is affecting the way that virtual education is organized and administered. Clear policies that take into account state and local regulations that affect virtual education funding, student data, and teacher qualification requirements can help SEAs and LEAs effectively manage many different scenarios and collect high-quality virtual education data. As virtual education continues to grow and new organizational structures emerge, SEAs and LEAs may find it useful to review and update policies. Emerging areas for consideration include the following:

- *LEA policies and procedures for working with virtual education service providers*. LEAs that offer virtual education may contract with one or more service providers. Service providers may not be located in the same district or state, and LEAs must be clear about how district policies govern virtual education.
- *The role of SEAs in virtual learning oversight*. While some states implement a statewide approval process for virtual courses or service providers, others do not, and it is the responsibility of LEAs, schools, or individual teachers to evaluate and choose virtual resources.
- *The role of charter schools in virtual education*. Some SEAs and LEAs offer virtual education through charter schools. As a result of state restrictions on funding, private companies that offer online programs often incorporate into charter schools operating within different states. Charter schools typically must be approved by a governing agency within a state and cannot be exempted from state standards and assessments. Moreover, states such as Georgia require approval of online content offered by virtual providers as "highly qualified" in the same manner that teachers would be approved in a brick-and-mortar school.

Units of Study, Course Sections, Courses, Programs, and Schools

Educational technology use is becoming widespread within classroom settings, and teachers often incorporate virtual education by offering a single virtual unit of study within the classroom. These small-scale uses of virtual education allow teachers and students to explore virtual learning opportunities within traditional education structures and systems. More extensive uses of virtual education include entirely online course sections, courses, or programs. The expansion of virtual education has also opened new opportunities in the form of completely virtual schools.

This document makes the following distinctions between units of study, course sections, courses, programs, and schools:

- **Unit of Study**: A cohesive and intentional plan for teaching and learning developed to address content standards in a meaningful way (Kentucky Department of Education 2012). A unit of study occurs within a class or course and may be implemented within a specified timeframe.
- **Course Section**: A setting in which organized instruction of course content is provided to one or more students. One or more teachers may provide course section instruction, in person or via a different medium, as in the case of virtual education. Some institutions use the expression "e-class" for subject matter primarily delivered electronically.
- **Course**: The organization of subject matter and related learning experiences for the instruction of students on a regular or systematic basis. While the term "course section" refers to a particular instance or setting when a course is offered to one or more students, the term "course" refers to the subject matter content. Thus, a course may be scheduled or offered as one or more course sections at different times and with different staff.
- **Program**: A series of courses that build upon one another to provide either depth or breadth within a subject matter area. A virtual or traditional school may offer a virtual program that consists of a series of related courses offered online.[3]

[3] The specific use of the term "program" to describe a series of courses differs from its use as an administrative term; administrative uses of the term are more varied, and may describe initiatives, plans of action, or administrative structures (e.g., a dropout prevention program, a consortium online program).

- **School**: An institution that provides instruction for students, has one or more students, has one or more teachers, and has an assigned administrator.[4]

Pace and User Experience

With respect to course section management, pace measures the rate of advancement or progress through academic content. Virtual education provides different approaches to course section pace and delivery that, although not entirely new to public education, are innovative and available to large numbers of students for the first time:

- **Synchronous Pacing**: Virtual course sections may be taught to a group of students who log in, tune in, or otherwise participate at a specified time and learn at the same time, as in a traditional course section, but without a shared physical presence.
- **Asynchronous Pacing**: Virtual course sections may be self-paced and students access course section instruction, materials, and assignments at their convenience as long as work is completed by agreed-upon deadlines. Students may also have the option of taking tests to demonstrate their mastery of course subject matter without taking a course—a process commonly known as testing out of a course.
- **Combined Synchronous/Asynchronous Pacing**: A third alternative for course section pace combines asynchronous activities with periodic synchronous activities such as online discussions, "webinars" (web-based seminars), or phone conferences.

In addition to variability in pace, virtual education offers increased opportunities for tailoring the teaching and learning experience to each individual student's needs. OET's National Education Technology Plan from 2010 identifies three alternatives to a one-size-fits-all model of classroom instruction:

- **Individualization**: Instruction that is paced to the learning needs of different learners. Learning goals are the same for all students, but students can progress through the material at different speeds according to their learning needs. For example, students might take longer to progress through a given topic, skip topics that cover information they already know, or repeat topics they need more help on.
- **Differentiation**: Instruction that is tailored to the learning preferences of different learners. Learning goals are the same for all students, but the method or approach of instruction varies according to the preferences of each student or what research has found works best for students like them.
- **Personalization**: Instruction that is paced to learning needs, tailored to learning preferences, and tailored to the specific interests of different learners. Unlike differentiation, personalized learning includes learning goals that are specific to the individual. In an environment that is fully personalized, the learning objectives and content, as well as the method and pace, may vary (so personalization encompasses differentiation and individualization) (OET 2010).

Individualization, differentiation, and personalization can all be implemented in traditional classroom settings—for example, by teachers who can identify student needs and learning styles and modify lesson plans for individual students. However, advancements in technology facilitate the increased use of these methods by providing teachers and students with additional resources and offering students new methods of engaging with and demonstrating their understanding of course content. Teaching methods and learning environments that are directed by the individual student's interests,

[4] As of the 2016-17 school year the EDFacts definition of school is an institution that provides instruction for students, has one or more students, has one or more teachers, and has an assigned administrator.

capabilities, learning styles, and needs result in different user experiences for students and teachers. In addition, user experience is impacted by the proliferation of devices and the ability to access virtual education resources at any time.

Teachers and students may no longer meet in the traditional face-to-face classroom, and while students once needed to sit in front of a desktop computer for online courses, now they may log in to courses from their homes or anywhere with high-speed internet access, interact entirely virtually with instructors, and access course material on mobile phones. User experience is also changing within traditional classrooms as more schools utilize blended learning, defined as "a formal education program in which a student learns at least in part through online learning with some element of student control over time, place, path, and/or pace and at least in part at a supervised brick-and-mortar location away from home" (Christensen, Horn and Staker 2013).

Changes in pacing and user experience impact the learning environment. Education leaders in both traditional and virtual settings must carefully select the type or types of pace and educational technologies to offer and support in order to ensure that any changes have a positive impact on teaching and learning. Education leaders must also consider the impact of changes on many other instructional and administrative issues that arise when operating any education institution, whether traditional, blended, or fully virtual. These policy decisions will have a profound impact on the types and effectiveness of learning environments they will be able to establish in their schools, districts, and states.

Challenges to Collecting High-Quality Virtual Education Data

Education data are collected in schools and school districts; stored in school, district, or state information systems; and reported by SEAs and the federal government. Existing data systems that are capable of providing high-quality data for accountability and decisionmaking may not be able to accommodate virtual education data systems that are not aligned along traditional administrative, instructional, and policymaking channels. Moreover, the individual data elements used in data systems may not accurately capture data related to virtual education. There are a number of challenges to consider when modifying data systems to capture virtual education data:

- *The use of virtual education and the types of virtual education offered vary greatly among SEAs and LEAs.* Some SEAs have state-endorsed online opportunities, while others do not. Some individual LEAs may offer virtual education, while others do not—for example, remote districts may turn to virtual education to access highly qualified teachers.
- *Data management and governance can be challenging when students are enrolled in multiple districts*. These challenges are further complicated when students and their data are distributed across multiple states and organizations. The use of Common Education Data Standards and standardized course codes can help to minimize such challenges.
- *Virtual education providers may have data collection timelines that vary from an SEA's or LEA's timeline*. Often, SEAs and LEAs will establish data-reporting timelines that correspond to reporting requirements, and if those timelines and requirements are not relevant to the virtual provider it can be difficult to coordinate data collections.
- *Accurately tracking and accounting for students can be difficult when students enroll in virtual schools that are not state-sponsored* (e.g., independent charter schools).
- *Grade levels and school assignments are more flexible in virtual environments*. A student could be taking 8th grade Math and Science courses at a brick-and-mortar middle school while also taking 9th grade Social Studies and 10th grade English virtually at a district's online high school. Although school and grade level assignments may be unnecessary for student achievement within a virtual environment, such assignments are often necessary for accountability measures.

- *Information that is relevant to virtual education may not comply with established reporting schemas*. For example, many data systems track seat time as an indicator of student participation and readiness for progression. However, seat time is an imprecise and often meaningless measure for self-paced virtual education courses. Competency-based measures that indicate a student's mastery of material are often better indicators of virtual education participation and readiness for progression.
- *Virtual instruction and coursework that can be accessed at any time from any location blur the distinction between instructional time and homework*. This distinction is important when schools must comply with federal and state policies that require that a highly qualified teacher be available to students during instruction time.
- *Virtual education courses may not fit traditional ideas of course duration or structure*. Courses in a virtual education model may not have a specified length because they are based on coursework completion or student demonstration of competency, and as a result, a student may be able to complete more than the traditional number of courses in a given semester or year. For example, a student who failed a first attempt at Algebra I may be given the opportunity to demonstrate mastery of various components of that course and will only be expected to repeat or remediate the specific areas in which they cannot demonstrate mastery. The student may be able to work on those areas outside of class time while still maintaining enrollment in a full day of classes. However, state funding structures may prohibit LEAs from providing funding for students enrolled more than full-time. It is important for state and federal reporting purposes that the virtual section has a closing date that fits within the academic year. While a virtual course section may allow a student to complete the coursework over multiple years, reporting procedures do not allow course sections to extend over multiple years of enrollment.
- *Education organizations, educators, students, parents, researchers, and other stakeholders are in need of information on what types of virtual education programs/configurations are most effective; however, evaluation is difficult without high-quality data*. An SEA may want to know which vendors' programs are most effective for offering online programs to a certain grade level. A teacher may need to know which supplemental virtual activities will benefit their students and make effective use of class time. Parents who wish to enroll their child in a fully online public charter school may want to compare how students at the charter school perform on state assessments with how students at brick-and-mortar schools performed. These types of decisions require high-quality virtual education data.
- *LEAs often must change established structures/cultures (e.g., school district, schools, or 7-period days) to accommodate virtual education.*
- *Various systems needed to accurately track and evaluate virtual education may not be integrated with existing systems.*

LEA Frequently Asked Questions: Virtual Education Implementation

Implementation questions that LEAs often face when integrating virtual education into existing education structures include the following:

- **How many virtual courses will an LEA fund for a student? Some LEAs will fund virtual education courses equal to one school day, and students or parents must pay for any additional courses.**
- **Will the LEA make participation in virtual education a graduation requirement?**
- **Will the LEA fund credit recovery courses taken virtually?**
- **Do credit recovery courses, if taken virtually, fulfill LEA requirements for virtual education participation?**

SEAs and LEAs collect data for many reasons related to improving education, such as monitoring student progress; providing students with high-quality teachers; communicating education information to the public; and meeting federal, state, and local reporting requirements. The information generated from data collections has real world, high-stakes

consequences for schools and students, such as determining school funding. SEAs and LEAs that offer virtual education or serve students who engage in virtual learning must be certain that data systems are capable of capturing accurate information on both virtual and brick-and-mortar education. Data elements and systems that were designed to capture information relevant to brick-and-mortar education must be modified and expanded to capture information relevant to virtual education. Failing to update data systems can result in inaccurate or incomplete data.

Opportunities Available Through Virtual Education Data

Although virtual education data do not always align well with existing data systems, students, educators, and policymakers are benefitting from new and different types of information that are available through virtual education. For example, new technologies that are making it easier to implement individualized, personalized, and differentiated education are also making it easier to award course credit based on a student's mastery of materials rather than time spent in class (Freeland 2014). As a result, virtual education can provide precise information on student skills and knowledge. Classroom technologies such as student response systems (clicker systems) that allow students to interact via handheld devices can provide teachers with immediate feedback, such as baseline metrics of comprehension, information on how to proceed with course material, and validation of student understanding. Gaming-based tools also offer teachers the ability to view data such as the path a student took when working on a problem, which then allows the teacher to better understand how a student arrived at a decision. New technologies can capture keystrokes, button clicks, attempts made, and other data in a manner that is not possible using paper and pencil. Teachers can use these formative data to inform teaching both throughout the school day and in longer-term planning.

Learning through Gaming

According to the National Education Technology Plan of 2010, "interactive technologies, especially games, provide immediate performance feedback so that players always know how they are doing" and they "enable educators to assess important competencies and aspects of thinking in contexts and through activities that students care about in everyday life" (OET 2010).

Data and Policy Implications

The implications of policymaking on virtual education are many and varied. Often, policies that apply to brick-and-mortar education must be reconsidered and modified to accurately reflect virtual education experiences. Relevant policy issues include school accreditation, testing and assessment, credits and credit transferability, teacher qualifications, technology access, instructional quality, participation criteria, access to individuals with disabilities, fees/tuition payment, student enrollment, privacy, funding formulas, and resource equity. These issues are both administrative and instructional in nature, and arise at the state, local, school, and classroom levels. At the state level, for example, teacher credentialing policies within and across state boundaries may disqualify some individuals from teaching virtual classes within one state even though they may be considered qualified in another. At the district level, policymakers have the authority to determine which technologies are available for virtual education in schools and classrooms. At the school level, standards may (or may not) be established to limit the number of students and teachers participating in virtual coursework or to determine the time of day best suited for such courses. Finally, at the classroom level, decisions to adapt online materials and instruction to accommodate the needs of special populations might affect access to, and therefore the equity of, resources.

Given the breadth and depth of issues that affect, and are affected by, virtual education, policymakers must simultaneously demonstrate foresight and caution as they grapple with important pedagogical and policy choices. In many circumstances, virtual education can be a powerful tool that allows students and teachers to access otherwise unavailable expertise, information, and experience. Virtual education is especially useful when decisionmakers choose to

- provide educators with information on how to identify high-quality virtual resources and integrate them into traditional classrooms;
- optimize the use of facilities (e.g., offering alternate scheduling to relieve overcrowding);
- offer coursework not otherwise possible (e.g., when offering a course section is not feasible because too few students have enrolled);
- access instructional expertise or materials not otherwise available;
- assist students with accessing dual enrollment opportunities;
- present instructional material in a format better suited to some students' learning needs;
- allow teachers to personalize learning for students by working with individual students or groups while other students are using online resources;
- introduce supplementary experiences otherwise impractical to offer in real time and space, such as virtual field trips (e-trips);
- maximize educational opportunities beyond traditional school hours;
- eliminate travel time between instructional locations;
- permit students to set their own learning pace;
- offer instruction to hospitalized, incarcerated, homebound, and other students physically unable to travel to a school site;
- offer services to homeschooled students and their parents;
- provide services to students who may prefer alternative settings (for example, to avoid bullying or because they do not function well in a social setting);
- ensure equity of instructional opportunity for all students regardless of school assignment (for example, to equalize options in urban, suburban, and rural settings); and/or
- offer supplemental, remedial, and credit recovery options.

Effective Use of Blended Learning: An Elementary School Example

Implementing virtual education can be a challenge, but once it is implemented, the effective use of virtual education can provide students and teachers with new tools and resources for teaching and learning.

In California, the San Ramon Valley Unified School District heard from teachers when considering a blended learning initiative. An elementary school teacher encouraged the district to implement the initiative by explaining how blended learning could provide him with extra time each day for personal interaction with students. Finding and adopting high-quality virtual resources gives students the opportunity to engage in an online curriculum or task in one area of the classroom while the teacher works closely with small groups or individual students. Moreover, data collected while students interact with virtual resources ensure that the teacher is able to monitor and assess the progress of other students while engaged in small group or individual instruction. The goal of offering personalized learning in a classroom setting is a challenge that can be met in a blended learning environment.

To evaluate whether virtual education is effectively and efficiently serving these functions, decisionmakers must have access to high-quality data. The Forum has produced a host of publications designed to improve data quality in

elementary and secondary education agencies (see appendix D). These resources emphasize that high-quality data are a product of well-trained data management specialists who

- understand how their education organization operates and how data are used;
- recognize the information needs of their constituents (e.g., teachers, principals, superintendents, school board members, and parents and community members);
- acknowledge the challenges inherent in updating data systems to accurately reflect changes in virtual education;
- have the support of high-level policymakers in the organization; and
- develop information systems based on commonly accepted standards for elementary and secondary education data.

Privacy, Confidentiality, and Student Protection

Data Privacy Assistance

The U.S. Department of Education's Privacy Technical Assistance Center (PTAC) provides education stakeholders with timely information and updated guidance on data privacy, confidentiality, and security practices through a variety of resources. The PTAC publication, *Protecting Student Privacy While Using Online Educational Services*, available through the PTAC toolkit, clarifies questions related to student privacy and the use of educational technology in the classroom.

Any data system that collects information about individual students and staff members should comply with regulations and professional standards intended to protect the privacy, security, and confidentiality of students, staff, and parents. SEAs and LEAs that work with virtual education providers must be sure that data are collected, shared, and used in ways that are allowed under the Family Educational Rights and Privacy Act (FERPA),[5] the Protection of Pupil Rights Amendment (PPRA),[6] the Richard B. Russell National School Lunch Act (NSLA),[7] the Children's Online Privacy Protection Act of 1998 (COPPA),[8] and any other relevant federal, state, or contractual requirements.[9] SEAs and LEAs should also ensure that virtual education providers are familiar with and act in compliance with the Children's Internet Protection Act (CIPA).[10]

Individual states are increasingly developing rules and regulations to protect student privacy that are in addition to the requirements of federal laws such as FERPA. Implementing new and changing privacy policies and practices can be difficult for virtual education providers that serve multiple states. Moreover, Attorneys General of individual states may interpret laws differently. SEAs and LEAs must be aware of these changes and the challenges they present to ensure that virtual education providers protect the privacy of student data according to all relevant laws and requirements.

[5] For more information on FERPA, visit the U.S. Department of Education's webpage at http://www.ed.gov/policy/gen/guid/fpco/ferpa/index.html.
[6] For more information on PPRA, visit the U.S. Department of Education's webpage at http://www2.ed.gov/policy/gen/guid/fpco/ppra/index.html.
[7] For more information on NSLA, visit the U.S. Department of Agriculture's Food and Nutrition Service webpage at http://www.fns.usda.gov/nslp/history_5.
[8] For more information on COPPA, visit the Federal Trade Commission's webpage at https://www.ftc.gov/enforcement/rules/rulemaking-regulatory-reform-proceedings/childrens-online-privacy-protection-rule.
[9] For more information about privacy, visit the U.S. Department of Education's Privacy Technical Assistance Center (PTAC) webpage at http://ptac.ed.gov/.
[10] For more information about CIPA, visit the Federal Communications Commission's webpage at http://www.fcc.gov/guides/childrens-internet-protection-act.

Summary

Updating education data systems to reflect the current needs of virtual education will improve the quality of data available to inform decisionmaking.

Advancements and growth in virtual education have provided education agencies, educators, and students with innumerable options for incorporating virtual experiences in teaching and learning. The many variations of virtual education show promise for expanding educational opportunities and improving education endeavors. However, informed decisionmaking about virtual education requires an understanding of the impact of technological innovations and changes on education policies and the collection of education data. Discrepancies between the types of data that are relevant to virtual education and the data elements collected by traditional education data systems can hinder decisionmaking at the classroom, school, district, state, and national levels. Educators, policymakers, and other stakeholders must therefore consider and address policy questions that affect virtual education and then implement best practices for data collection to effectively identify, collect, and use virtual education data.

Chapter 2: Virtual Education Data

While many of the elements SEAs and LEAs use to collect data on virtual education are the same elements used to collect data on brick-and-mortar education, other elements must be added or modified to meet the needs of virtual education data collection. For example, both virtual and brick-and-mortar schools need basic elements to identify students, teachers, and schools, but different elements are often needed to track attendance for traditional and virtual courses. In response to the widespread use of new technologies and new opportunities for virtual and blended learning, many SEAs and LEAs are developing new elements and modifying existing elements to improve the collection of education data. This chapter offers an overview of elements that are commonly used to collect virtual education data. The elements described below are also included in the Common Education Data Standards (CEDS).

One of the basic requirements for tracking virtual education data is the ability to identify virtual education data in traditional data systems. A common approach is the use of a virtual education indicator that can be used to identify data elements that would otherwise be indistinguishable from traditional data elements. For example, a stakeholder reviewing information on K12 schools within a district may be unable to identify which schools are brick-and-mortar and which are virtual. The use of a virtual indicator in addition to information such as the school identifier and name can help the researcher to easily distinguish virtual schools.

Common elements that identify K12 virtual and blended data include the following:

- **Virtual Indicator**: Indicates a school, institution, program, or course section focuses primarily on instruction in which students and teachers are separated by time and/or location and interact through the use of computers and/or telecommunications technologies.
- **Course Interaction Mode**: The primary type of interaction, synchronous or asynchronous, defined for the course.
- **Blended Learning Model Type**: A type of formal education program in which a student learns at least in part through online learning, with some element of student control over time, place, path, and/or pace; at least in part in a supervised brick-and-mortar location away from home; and the modalities along each student's learning path within a course or subject are connected to provide an integrated learning experience.
- **Course Section Instructional Delivery Mode**: The primary setting or medium of delivery for the course.

Additional information on these elements and their use in K12 data systems is available in the CEDS publication, *CEDS Addresses Virtual and Blended Learning* (CEDS n.d.).

In addition to elements that specifically identify virtual data, SEAs and LEAs have found that certain elements that exist in traditional data systems are particularly useful for virtual education data collection. This list includes elements that are intended to identify the organizations responsible for different aspects of education, such as transporting students, providing funding, or tracking attendance. An SEA that serves students who are simultaneously enrolled in a local school based on their home address and a virtual school in another district may find that one LEA is responsible for student funding while another is responsible for attendance. While these situations are not uncommon in traditional education settings, they are more prevalent and may be more complex when students are enrolled in virtual programs. Data elements that help to clarify organizational responsibilities include the following:

- **Responsible Organization Identifier**: Identifies an organization responsible for specific educational services and/or instruction based on a type of responsibility specified in the Responsible Organization Type.
- **Responsible Organization Type**: The type of responsibility the organization has for the student, such as issuing/rewarding diplomas or transporting the student to the physical location of the school or facility in which educational services are delivered.
- **Responsible Organization Name**: The name of a non-person entity such as an organization, institution, agency, or business responsible for the institution/site.
- **Responsible District Identifier**: The district responsible for specific educational services and/or instruction of the student.
- **Responsible District Type**: The type of responsibility the district has for the student.
- **Responsible School Identifier**: The school responsible for specific education services and/or instruction of the student.
- **Responsible School Type**: The type of services/instruction the school is responsible for providing to the student.

Other data elements that feature prominently in virtual education data systems are those that can capture accurate data on both traditional and virtual methods of reporting course section time and course credit completion. Some virtual education opportunities conform to traditional time and credit structures—for example, course sections that meet daily for a set period of time, resulting in a credit amount based on the time spent in the course. Other virtual education opportunities are available outside of traditional time and credit structures—for example, self-paced course sections that students can log into at any time and that assign credit based on skill mastery or competency. Data elements that help to accurately track this information include the following:

- **Course Credit Units**: The type of credit (unit, semester, or quarter) associated with the credit hours earned for the course.
- **Achievement Criteria**: The criteria for competency-based completion of the achievement/award.
- **Competency Set Completion Criteria**: The criteria for the set of competencies that represent completion or partial completion of a unit, course, program, degree, certification, or other achievement/award. Specifies whether completion requires achievement of all items in the set or some number of items.
- **Competency Set Completion Criteria Threshold**: The minimum number of competencies in the set that must be achieved for completion or partial completion of a unit, course, program, degree, certification, or other achievement/award.
- **Course Section Time Required for Completion**: The actual or estimated number of clock minutes required for course completion. This number is especially important for career and technical education courses and may represent (in minutes) the clock hour requirement of the course, the number of minutes (or clock hours) of class time per week, times the number of equivalent weeks the class typically meets.

Chapter 3: Virtual Education Data Use Policy Questions and Common Practices

Integrating virtual education data into existing data systems begins with policy questions. SEAs and LEAs need to know what types of questions data systems must be able to answer. They also need to know whether existing policies and practices are sufficient to collect quality virtual education data. For example, knowing how LEA teacher certification requirements are applied to virtual schools is essential for collecting quality teacher certification data.

The policy questions and common practices discussed in this chapter are intended to aid SEAs and LEAs as they develop data elements and systems that will capture essential information on virtual education; improve the quality of data available on blended learning; and provide information on the interaction between virtual and traditional learning environments. Data systems that can capture information on both virtual and traditional education are increasingly important as blended learning evolves and the demarcation between traditional and virtual education becomes less distinct.

Policy questions that impact the collection of high-quality virtual data can be categorized into the following topic areas:

1. School Identification/Classification
2. School Governance
3. School Accreditation
4. School Contact Information
5. School Location
6. School Enrollment
7. School Calendar
8. Course Information
9. Course Section Information
10. Unit Information, Learner Activities, and Resources
11. Content Governance and Accountability
12. Reporting Information
13. Safety and Discipline
14. Student Information
15. Student Enrollment/Exit Information
16. Student Attendance Information
17. Student Participation/Performance Information
18. Student Progress Information
19. Student Disability Information
20. Staff Member Information
21. Staff Member Employment Status
22. Staff Member Employment Credentials
23. Staff Member Assignment Information
24. Staff Member Attendance Information

These topic areas were identified by SEAs and LEAs that have successfully integrated virtual education data collections into their existing data systems. They are not intended to address all aspects of an SEA or LEA data system, but instead focus on areas where the differences between virtual and brick-and-mortar education commonly impact data collections. This chapter provides detailed information on each topic area, including

- **Examples**: real world scenarios describing how data in a topic area can be used (or misused) in SEAs, LEAs, and schools;
- **Policy Questions**: considerations for the interpretation and use of data elements or information collected and maintained in a topic area; and
- **Common Practices**: methods implemented by SEAs, LEAs, and schools to modify or add data elements that better reflect the information and reporting needs unique to a virtual education setting.

Common Education Data Standards (CEDS) Connect

CEDS Connect (https://ceds.ed.gov/connect.aspx) is an online resource mapping CEDS data elements to specific uses or questions.

Whenever possible, policy questions in this document are linked to CEDS Connect. The CEDS connections listed in the topic areas throughout this chapter provide SEAs and LEAs with information on data elements commonly used to answer specific policy questions.

CEDS also provides a myConnect tool, which allows registered users to compare their data dictionary to CEDS to determine if they have the data elements necessary to answer specific policy questions.

Topic Area 1: School Identification/Classification

Examples:

Advanced coursework is offered to students statewide through a state's "virtual school," but when local schools attempt to register students in the virtual school, they cannot find a school identification number in the state data system. After much research, school staff determines that the state runs its virtual school as a program rather than as a school, even though the program's name suggests the opposite.

The county high school had changed its classification many times: originally a regular high school, it became a magnet school, then a charter school, and eventually an alternative school. In its final reconstitution a separate, virtual school was housed in the school's technology center. State auditors called the district several times to confirm that both the alternative school and the virtual school had the same street address, and only released supplemental funding after verifying that the school classifications had been reported correctly.

An LEA allowed students to access advanced coursework that was not offered locally through an out-of-state virtual program. However, when submitting data to the state, the LEA found that the virtual program did not collect data in the same manner as brick-and-mortar schools.

Policy Questions:

- Is the virtual entity a school, a program, a course, or a course section?
- How is a school that is geographically outside of the district or state identified (i.e., flagged in the education data system)? Does it require a separate address data element?
- What criteria are used to establish or recognize a school in your state or locality?
- Does your definition of a school accommodate virtual schools?
- Does your organization define virtual schools differently than regular schools?

- Are out-of-district and out-of-state schools recognized by the same criteria?
- Can your data system identify (i.e., flag) a school classified in several categories (for example, if a school is simultaneously alternative, magnet, charter, and virtual)?

Common Practices:

- School attributes that reference school classification may simplify communications and recordkeeping.
- A school may belong to more than one category (e.g., a single institution may simultaneously be an alternative school, a magnet school, and a virtual school). Systems that maintain these data element flags separately are able to identify these schools.
- Many education data system managers have determined that it is necessary to collect classification information for each school within their jurisdiction, as well as for schools in other jurisdictions attended by any of their students, either virtually or in person.

Topic Area 2: School Governance

Example:

The SEA governs all public schools statewide and staff are accustomed to maintaining data on public school students submitted by LEAs throughout the state. When several students enrolled in a virtual school in another state, the SEA began receiving reports from LEAs that the virtual school failed to share student data with them in a timely manner, and the delays impacted the LEA and SEA data-reporting schedules. The SEA, LEA, and virtual school had to quickly meet to establish data governance and ensure that the SEA had access to data needed for reporting.

Policy Questions:

- Does your organization have a process to determine the governance structure of a virtual school located beyond your administrative boundaries?
- When working with a virtual school located beyond your organization's administrative boundaries, which organization governs student records, and is there a process in place for resolving questions of data ownership?
- Does your organization recognize the governance structure of the virtual school?
- Do other governing bodies, such as an SEA or LEA, need to recognize the governance structure of the virtual school? If so, do they?
- Do you have accurate contact information for the school's administrators so you can reach the appropriate authorities as needed?
- Which administrative or legal entity will resolve conflicts?

Common Practices:

- Several governing bodies (e.g., an SEA or LEA) may need to recognize a virtual school's governance structure before credit can be transferred or funds expended.
- Some organizations have both public and private governance structures (e.g., a private organization receiving public funds to operate public schools).
- Some organizations have governance structures beyond the traditional elementary/secondary education setting, such as universities offering courses to high school students.
- Some organizations' governance structures cross traditional administrative boundaries in the public sector (e.g., national and regional virtual schools).

Topic Area 3: School Accreditation

Example:

A national news show exposed an accreditation organization that never conducted site visits, financial audits, or program reviews as a part of its accreditation process. Instead, any organization that paid its $1,495 annual fee in a timely manner was labeled "accredited." The school district realized that its supplemental services partner boasted that very same "prestigious" credential discussed in the show. Clearly, accreditation was only meaningful relative to the standards set by, and the integrity of, the institution issuing the credentials.

Policy Questions:

- Does your organization have a process to determine the accreditation status of a virtual school located beyond your administrative boundaries?
- Does an existing reciprocity agreement mean your organization must recognize a virtual school's accreditation if another entity recognizes it (for example, if your state and a neighboring state have agreed to recognize each other's schools)?
- Does your organization recognize the accreditation status of all virtual schools in which your students are enrolled?
- Do other governing bodies, such as a state education agency or institution of higher education, need to recognize the accreditation status of the virtual school? If so, do they?
- Do you have accurate contact information for the accrediting organization so you can reach the appropriate authorities as needed?

Common Practices:

- Other governing bodies, such as local or state education agencies, may need to recognize the accreditation status of a virtual school before credit can be transferred or funds expended.
- The meaning of the label "accredited" varies based on the standards used to measure a school, program, or staff. A virtual school's "accreditation" is significant only when granted by an agency whose review process conforms to standards deemed acceptable by local authorities.
- The process for determining whether to recognize a virtual school's accreditation is often identical to the one used for traditional schools (e.g., when credits are transferred from an out-of-state brick-and-mortar school).

Topic Area 4: School Contact Information

Example:

The system is down on a Monday morning and students cannot access their coursework—and the virtual school only checks e-mail once every 48 hours. Will students be without access for two days? How can the local school contact the provider to have the system repaired immediately?

Policy Questions:

- How do you contact a school when it is truly virtual (i.e., it has no brick-and-mortar school building)? How do you handle routine correspondence? Payment? Instructional and administrative issues? Technical problems? Emergencies?
- Can the virtual provider guarantee accessibility during standard or "routine" business hours? If technical problems occur, such as a server going down, how is communication handled during off-hours?

- Have planners accommodated differences in time zones when negotiating "routine" business hours and other contact periods?
- Are proposed constraints on the use of contact information acceptable? For example, may a virtual school respond to messages only during its local business hours? May messages be returned within 48 hours but not necessarily sooner, even in an emergency?
- How do you determine a school's location when it is truly virtual (i.e., it has no brick-and-mortar school building)? How do you handle routine correspondence? Payment? Instructional and administrative issues? Technical problems? Emergencies?

CEDS Connection: Contacting a Virtual School

This connection contains the basic data elements needed to identify contact information for a virtual school. The element Address Type for Organization can be used to specify multiple address records for a single virtual school, for example, if the school has different mailing and shipping addresses.

Common Practices:

- Maintaining accurate contact information about virtual schools is imperative because they operate from locations across the globe. E-mail addresses and websites are especially relevant, and telephone numbers should include international (country) codes for sites outside of the United States.
- As legal entities, even virtual organizations have a formal business address. This official address (and telephone number) is a logical starting place for contact information.
- A virtual school's only physical presence may be that of a server, while its students, teachers, and administrators may all be geographically separated. When this is the case, a business address or primary contact address should be secured.
- Different contact information may be necessary for routine correspondence, payment, instructional matters, administrative concerns, technical problems (i.e., a help desk), and emergencies.
- Many organizations require that service providers maintain "routine" business hours, during which they must be accessible via the provided contact information.
- Data systems should allow for multiple types of virtual school contacts (e.g., different contact information for administrators and tech support) and multiple types of contact methods (e.g., e-mail, address, and telephone number).
- A traditional brick-and-mortar school offering virtual courses (within or beyond its administrative borders) will have an address associated with its physical site and to which traditional address-related data elements will apply without modification. In contrast, a virtual school may or may not have a physical location where students receive education services. In fact, a virtual school's only physical presence may be that of a server, while its students, teachers, and administrators may all be geographically separated. When this is the case, a business address or primary contact address should be listed as the school address.

Topic Area 5: School Location

Example:

Rural enhancement grants and other federal and state funds are often allocated based on the geographic location of a school's mailing address (assuming the school is serving students in that region). This assumption is not necessarily valid for virtual schools, which may serve students from other counties, states, and even countries. It may therefore be unwise to allocate funding aimed at specific populations within a geographic area based solely on a school's mailing address.

Policy Questions:

- Does your organization or its governing authority require that service providers be located within certain geographical boundaries (e.g., within the state or district) if they are to be paid with state or local funds?
- Does your organization award or receive resources based on a school's geographic location? If this resource distribution is based on the assumption that a school serves its local population, consider that an out-of-state virtual school may, in fact, be serving your local students. At the same time, a virtual school headquartered within your geographic boundaries may receive funds without serving the targeted local population.

Common Practices:

- When physical location affects funding, concerns may arise about inconsistencies between a school's physical location and its business address. Funding agencies may wish to consider additional criteria, including student demographic data, when determining a school's eligibility for such programs (other examples include high poverty and enterprise zone locations).
- Some organizations have governance structures that cross traditional school boundaries (e.g., national and regional virtual schools).
- To meet state requirements, some organizations find it useful to certify virtual instructors even when they teach through a school located in a different state.

Topic Area 6: School Enrollment

Example:

A student in a local school building uses the school's equipment to access a virtual school. The local school believes it should receive some portion of the full-time equivalency (FTE) for pupil funding for providing facilities, equipment (computers, water fountains, and restrooms), and custodial support; the virtual school disagrees because it hires staff based on student-to-teacher ratios. Who will mediate this dispute and on what criteria will they base the decision?

Policy Questions:

- Can your data system identify students who have partial or full enrollment in virtual schools, or who have no primary school of record?
- Will a point-in-time count accurately depict enrollment in both traditional and virtual schools?
- Do any rules and regulations limit student participation in virtual offerings based on attendance areas (e.g., for a single-district online program)?
- Have policymakers decided when students in a traditional school may enroll in virtual courses? Reasons might include enhanced course offerings, postsecondary credits, remedial support, home bound instruction, cultural outreach, and virtual field trips.
- How is funding allocated when a student is physically present in one school but enrolled in another, as may occur in virtual education (for example, when students use the technology at their local school to access a virtual school)?

Common Practices:

- Enrollment data for virtual and traditional schools may change if students begin but do not complete a virtual course, illustrating the limitations of point-in-time measurements.
- Enrollment counts based on physical presence may undercount virtual enrollments if students access their virtual coursework via computers in traditional schools.

Topic Area 7: School Calendar

Example:

A student enrolled in a traditional school is taking a virtual course through the media center. When the local school goes on spring break, the student cannot access the virtual course section for ten days even though the virtual school is in session. Policymakers at the local school soon realize that they may need to open their campus and buildings to accommodate the needs of students enrolled in these virtual courses.

CEDS Connection: Linking Virtual Course Section Information to Competency Measures

This connection contains the basic data elements needed to assign course credit to a virtual course section based on measures of competency. Additional information can be linked using the Course Section Identifier.

Policy Questions:

- Does the virtual provider adhere to a defined calendar? Are there established transcript and graduation dates? Will discrepancies between virtual and brick-and-mortar calendars affect required reporting?
- What are the units of measure in your organization's instructional calendar (instructional minutes, days, weeks, performance, etc.) and can they be aligned with the units of measure in the virtual provider's instructional calendar?
- Does your organization measure course credit based solely on traditional seat time, or does it accept other measures more applicable to the virtual environment (total days login-accessible, total days website-accessible, time online, time estimated to complete a course, demonstrated competency, etc.)?
- Is your organization's data system capable of linking virtual course section information to competency measures?
- Course competency measures are often determined locally. Is your data system capable of collecting rubric data?

Common Practices:

CEDS Connection: Rubric Definition

This connection catalogs the CEDS elements used to define various types of rubrics (e.g., analytic and holistic rubrics).

- When a student is enrolled in multiple schools, it is necessary to compare instructional calendars to provide appropriate logistical support and accurately credit coursework.
- Some translation is necessary from traditional time-based measures of session length to units more applicable to virtual settings (total days log-in accessible, total days website-accessible, time online, time estimated to complete a course, demonstrated competency, etc.).
- To accurately track competency-based measures, it is useful for SEAs and LEAs to link specific course sections to learning standards and achievement measures.
- Many schools assess course credit based on traditional seat time, although this is changing. In a virtual setting, seat time is often not an accurate measure.
- Virtual school calendars that function according to years (365-day limits between start and end dates) help to maintain student cohorts.

Topic Area 8: Course Information

Example:

A student took English I in 9th grade at a virtual school, so her guidance counselor assumed she would be prepared for English II when she enrolled the next year at the local high school. Unfortunately, the virtual school curriculum was not aligned to the state standards and some of the content expected on the statewide graduation exam was not covered. The guidance counselor realized that courses with identical names may not teach identical content and, in the absence of a standard course classification system, there was no way of knowing how similar or different such courses might be.

CEDS Connection: School Courses for the Exchange of Data (SCED)

SCED is a voluntary, common classification system for prior-to-secondary and secondary school courses.

This connection contains the basic data elements needed to implement the SCED classification system, which can be used to map course information from one classification system to another. SCED can also be used to compare course information; maintain longitudinal data about students' coursework; and exchange course-taking records.

Policy Questions:

- Does your curriculum framework or standard apply to virtual coursework?
- Do your organization's required content assessments apply to virtual coursework?
- Can students acquire exceptions to curriculum framework and assessment requirements (e.g., for transferred coursework)?
- Can you map transferred course information, including credits, to your organization's course classification system?

Common Practices:

- Course names may vary between organizations (and different subject matter areas may have the same, or a similar, course name). Whenever credits are transferred, course codes and coding systems need to be coordinated between institutions for the data to be meaningful.
- Terminology regarding frameworks, standards, benchmarks, grade-level expectations, etc., may also vary between organizations. Organizations must be aware of these differences and their effects on data when transferring information.
- The School Courses for the Exchange of Data (SCED) Classification System provides a voluntary, common classification system for prior-to-secondary and secondary school courses that can be used to compare course information, maintain longitudinal data about students' coursework, and efficiently exchange course-taking records.

Topic Area 9: Course Section Information

Example:

A student advances through a self-paced Algebra I course and easily passes the end-of-course assessment in the third month of the school year. He completes an online geometry course two months later. As he enrolls in trigonometry, his guidance counselor realizes that the school district has never awarded so much credit to a student in a single academic year. The administration and school board want to encourage the student, but realize they must consider the consequences of such rapid academic progress and establish policies to guide future decisionmaking.

Policy Questions:

- How does your organization define a course section, and is your system capable of collecting information on virtual or blended course sections that do not use traditional measures of course pace and timing?
- Are students allowed to begin a new course if they complete a self-paced course prior to the end of the normal grading period?
- Is there a maximum number of credits a student may earn (or an education agency will fund) per unit time, and does this limit conflict with self-paced acceleration of academic progress?
- Does your organization's scheduling system accommodate asynchronous class settings that do not have traditional class periods, beginning and ending times, and meeting days?
- Can your organization's attendance system accommodate asynchronous class settings that may not employ traditional time-based attendance measures such as "school days"?
- Do established policies clarify permissible rates of advancement from course to course (e.g., is a student permitted to complete self-paced Algebra I, Geometry, and Trigonometry in a single academic year)?
- Are funding formulas dependent upon class pace and class timing expectations that do not apply to virtual education?

CEDS Connection: Virtual Course Section

This connection contains the basic data elements needed to identify a virtual course section.

Common Practices:

- Virtual education may use performance-based instruction, in which students advance from one instructional level to the next based on mastery of subject matter and skill sets. In asynchronous virtual courses, where communication between participants occurs at different times, students often advance through course material at their own pace as long as they meet minimum contact requirements to demonstrate participation. Students may thus complete a virtual course in less—or more—time than is allotted during a normal grading period.
- In a synchronous virtual environment, attendance is relatively straightforward to measure—either the student is present and on time for class or not, just as in face-to-face coursework. For asynchronous classes, however, some schools, districts, and states have established a minimum number of online interactions to measure student attendance; others count logins, time online, or the number of keystrokes per unit time.
- Student competency is often determined according to specific learning standards. Organizations that use learning standards have found it useful to maintain a web link to the learning standard and a copy of the learning standard statement in the local data system.

Topic Area 10: Unit Information, Learner Activities, and Resources

Example:

An online course has lesson activities and assignments due at periodic points throughout the grading period. Rather than work at an even pace between due dates, some students ignore their coursework for long periods of time and complete their assignments at the last minute. Administrators recognize that this is not the best way to encourage sound study habits and student behavior, so they develop policies to structure expectations more evenly throughout the course. Unfortunately, this leads to the creation of "busy work" in some courses not well suited for frequent assignments or assessment (e.g., reading-intensive history courses). School leaders are then forced to reconsider blanket policies about online course management.

Policy Questions:

- Does your organization maintain unit-level information for coursework in a traditional school? If so, should you maintain similar information for coursework offered by virtual providers?
- Do required learning standards apply to virtual coursework?
- Are procedures in place for acquiring exceptions to learning standards requirements (e.g., for transferred coursework)?
- Can you map learning standards from transferred coursework to your organization's learning standards requirements?

Common Practices:

- Terminology regarding frameworks, standards, benchmarks, grade-level expectations, etc., may vary between organizations.
- Many schools assess course credits based on traditional classroom time, although this is changing. In a virtual setting, these time-based measures may need to be translated into units more applicable to the virtual environment (e.g., total days login-accessible, time online, time estimated to complete a course, performance, etc.).
- In addition to (or in place of) data on units, some schools track learner activities (e.g., a lesson or homework assignment). Learner activity elements can be used to collect data on both personalized learning and group learning. This shift is particularly suited to online learning that may be individually paced and adaptive.

Topic Area 11: Content Governance and Accountability

Example:

A student earns several credits from a virtual school he believes to be accredited. When he requests an exemption from instructional requirements at his local school, he discovers that the local school does not recognize the virtual school's accreditation. As the coursework was not approved in advance, the local school refuses to transfer the credit into the student's permanent record. This decision has substantial implications for the student's academic plans, including a missed opportunity to participate in advanced coursework and, perhaps, delayed graduation.

Policy Questions:

- Does your state accept National Board Certification?
- Does your organization allow a virtual teacher who is not located within the state to be the Teacher of Record?
- Does your state require specific online pedagogy?
- How does your organization account for virtual courses that are not aligned with standards?
- Must your organization recognize a virtual school's accreditation status prior to accepting the credit it awards?
- Does any other governing body (e.g., an SEA or institute of higher education) need to recognize the virtual school's accreditation status? If so, do they?

Common Practices:

- SEAs and LEAs often require all virtual instructors to be certified according to state and local requirements, even when a virtual school is located in another state.
- The local school and, perhaps, other governing bodies (e.g., the LEA or SEA) may need to recognize the accreditation status of a virtual school prior to accepting the credit it awards.

Topic Area 12: Reporting Information

Example:

A local school issues report cards on a quarterly basis, but the virtual school several local students "attend" generates academic progress reports on a monthly basis. Local school administrators do not have an existing mechanism for communicating these monthly reports to parents, but decide to establish electronic means for doing so rather than not make use of the detailed information made available by the virtual service provider.

Policy Questions:

- Can a student receive a grade from an instructor not employed by your organization (e.g., for a virtual course section)?
- Can you crosswalk grading systems when coursework is transferred in from another organization?
- Who may access online information about individual student performance (e.g., what are the security rules for online report cards)?
- Who may supervise assessments and other student work? For example, is it acceptable for a student's parents/guardians to supervise homework and assessments when a student accesses virtual coursework from home?
- Do you have appropriate data-sharing agreements with online course providers?
- What organization is responsible for tracking data on courses that a student takes in addition to the standard number of courses?

Common Practices:

- Many schools measure grading periods based on traditional classroom time, although this is changing. In a virtual setting, these time-based measures may need to be translated into units more applicable to the virtual environment (e.g., total days login-accessible, total days website-accessible, time online, time estimated to complete a course, performance, etc.).

Topic Area 13: Safety and Discipline

Example:

A student uses a school computer to participate in a virtual course, but then sends another student a harassing e-mail, views inappropriate internet content, or hacks into other files on the network. The school's acceptable use policy clearly states that such offenses are punishable by loss of technology privileges. However, the principal realizes that if the student loses access to the school's technology, it would effectively suspend him from his virtual coursework, which was not the intention of the disciplinary action.

Policy Questions:

- Does your organization have student conduct regulations and acceptable use policies, and do those policies apply to virtual education and address cyberbullying?
- How are disciplinary incidents monitored and reported in virtual education?
- Are virtual collaboration rooms subject to filtering and monitoring?
- Are all virtual providers in compliance with the Children's Internet Protection Act (CIPA)?
- Do fee-based virtual providers have financial disincentives to expel students?

Common Practices:

- Any organization providing K12 education should have published acceptable use policies.
- SEAs and LEAs should require virtual providers to report violations of student conduct regulations and acceptable use policies to the SEA/LEA and/or law enforcement authorities.
- Providing internet safety training to students can help to educate students about safe and appropriate internet use.
- Schools often require filters on web-accessible technologies.

Topic Area 14: Student Information

Example:

A student becomes homeless and is no longer able to use her home computer to participate in a virtual class on a regular basis. Because demographic information is regularly updated in the student record system, the instructor at the virtual school is aware of this and handles the student's changing attendance and performance patterns by offering support services rather than dealing with it as a disciplinary issue.

Policy Questions:

- What information is required for state and federal public reporting?
- What information is necessary to ensure equitable access to virtual education for all students?

Common Practices:

- Procedures and policies for verifying student identities can help to minimize any discrepancies between student information maintained in the LEA/SEA and the virtual school.
- Accurate demographic information about enrolled students is required by many federal, state, and local funding formulas.
- To make informed instructional and service decisions, instructors may need to know students' demographic information (e.g., if a student's behavior and performance changes abruptly, his teacher may benefit from understanding that his family situation has also recently changed).
- Staff may need to know when special adaptive and assistive technologies (e.g., language translation software) are required for a student to equitably participate in virtual education, even though access to the student's personal information might otherwise be restricted.
- Data systems should be able to report all demographic information required for state and federal public reporting (e.g., equity of access subgroup populations).

Topic Area 15: Student Enrollment/Exit Information

Examples:

A student is enrolled full time in a virtual school that is paid by his local public school system. Two months into the school year, the student's family moves away but fails to formally withdraw from the old school district. Without accurate data about the student's current enrollment status, the first school system continues to pay for the student's virtual school costs even though his new local school system should now be covering the costs.

A student within a brick-and-mortar district fails to achieve the credits necessary for graduation, so the school encourages the student to enroll in an online school within another district. After joining the district with the virtual

program, the student drops out of all academics and the district with the virtual school now takes on the process of including the drop out record for the student.

Policy Questions:

- Does the virtual provider differentiate instruction according to grade levels?
- What constitutes full-time/part-time status? Is it based on number of classes, minutes of instruction, credits taken, or some other measure?
- To ensure comparable data, has the virtual provider agreed to your organization's definition of "full-time/part-time" status?
- Is tuition charged and paid by the course section, credit, term, or other basis?
- Is there a limit on the tuition your organization will pay for a student's virtual education (either by course, credit, term, or cumulative over time)?
- Must the student pay for virtual education that exceeds the maximum amount of funded hours?
- Who bears the costs when students repeatedly register for, but do not complete, virtual courses?
- Must virtual education service providers be located within established geographic boundaries (e.g., within the state) to receive public funds?
- Do virtual education vendors charge technology fees?
- How will you verify a student's enrollment/exit status when paying for students to attend virtual schools?
- If students are enrolled in virtual coursework, how will schools determine average daily membership and other statistics used in funding calculations?
- When a student transfers to a virtual school in another district, does the initial or resident district retain responsibility for the student's graduation status or does it become the responsibility of the virtual school/district?

Common Practices:

- SEAs and LEAs must consider the effects of self-paced virtual education when tracking cohorts.
- Virtual education funding is usually based on either enrollment or attendance. Either unit may be measured on a per class, per day, or per term basis, and translated to a full-time equivalency (FTE) standard. "FTE" is defined as the amount of time a student is enrolled in (attending) a school, stated as a proportion of full-time enrollment (attendance); or the number of courses/credits taken, stated as a proportion of full-time course load.
- At the high school level, the number of credits taken is generally most relevant when determining FTE. At the elementary school level, FTE is often stated in instructional minutes per full-time day.
- "Time enrolled in a school" may need to be translated into units that correspond to enrollment in a virtual setting.
- In some virtual schools, students follow a grade-based chronology (e.g., they must complete grade 1 before enrolling in grade 2), but new concepts are introduced at different "grade levels" based on how much of a K-8 sequential curriculum they have completed.
- Enrollment and credit data may be compared to determine whether students are completing their virtual coursework.

Topic Area 16: Student Attendance Information

Example:

The server at a student's school is down and she cannot access a synchronous virtual class. She is upset to learn that the virtual school marked her as "absent" even though she was in the computer lab the entire time, waiting for the server to be fixed. A complaint to the principal results in a change to an "excused absence," but the student still is not satisfied given that she was ready and prepared for class.

Policy Questions:

- What constitutes "in attendance" status? Is it based on number of classes, minutes of instruction, number of keystrokes, time logged in, performance, or some other measure?
- Given the high stakes of attendance data (for instance, they are used in funding formulas), what definition of attendance must be used? Does this definition reasonably accommodate the virtual education setting?
- To ensure comparable data, has the virtual provider agreed to your organization's definition of "in attendance" status?
- Have you and the virtual provider determined which organization is responsible for a student missing class because of a technical problem? For example, will a student be marked absent if there is server downtime? What about when a student's home internet connection does not work?

Common Practices:

- Attendance in a virtual (especially asynchronous) setting may be most accurately measured by factors that are not time-based or do not otherwise apply to a traditional face-to-face setting; these might include number of keystrokes, time logged in, end-of-unit performance, etc.
- Some situations may call for combinations of attendance factors, for example, a learning coach or parent may log the number of hours a student works both online and offline, while the system also monitors time online and the frequency of student contact with teachers through synchronous live lessons or email.
- Attendance should incorporate after-hours (e.g., at home) activities for all virtual evening classes.

Topic Area 17: Student Participation/Performance Information

Example:

A high school student earned a C in a virtual course at a highly competitive college, but his local high school awarded him an A for the high school credit equivalent. School administrators felt this policy was fair, but worried when another student was awarded an F by the college, yet claimed that, given the course's difficulty, he should receive a passing grade on his high school transcript. In addition to the immediate concern of awarding credit for a failing grade, administrators found themselves wondering how these somewhat subjective grade translations might influence the determination of class rank and other class honors (e.g., class valedictorian).

Policy Questions:

- Can a student receive a grade from an instructor not employed by your organization (e.g., for credits taught virtually)? Is the Teacher of Record the instructor of the virtual course, or a proctor employed locally?
- Is there a way to distinguish between virtual courses and in-person courses for reporting purposes?
- Is relevant information about the virtual course (such as the method of delivery) lost in reporting?
- Who makes the final determination when a grade assigned in a course is questioned?

- Can you map grading systems when coursework is transferred from another organization?
- Does your organization need to monitor student completion of virtual coursework?
- Are virtual service providers systematically monitored and evaluated based on student outcomes such as participation and performance?

Common Practices:

- A virtual course can start/end at any time, but for enrollment purposes, start and end dates should occur within a single calendar year.
- Depending on policies and agreements between local schools and virtual service providers, the institution that maintains an individual's permanent record often retains the right to determine (or change) final grade assignments.
- Student completion of, and performance in, virtual courses may vary based on a wide range of factors, including student readiness, curricular choices, content presentation, instructor-student interactions, local supervision and support, assignment and assessment rigor, and grading practices. Some students may perform better (i.e., complete a course with an acceptable grade) in courses offered by some providers than in courses offered by other providers. Local schools may wish to monitor student completion and performance for each provider to ensure that coursework is appropriately rigorous and verify that local investment in virtual courses is not squandered on enrollments that do not earn credits.
- Students fail to complete coursework for a wide range of reasons, including lack of interest, aptitude, and support. Some students may find virtual coursework adds another layer of difficulty, especially if they are uncomfortable using technology, have problems accessing instructional materials online, or are unfamiliar with online assessment procedures. Local schools may want to collect data about why students do not complete virtual courses.

Topic Area 18: Student Progress Information

Example:

As the school year ended and graduation approached, school staff began determining class rankings and honors. After comparing student grade point averages and course credits, staff found that the highest-ranked students were those who had taken a multitude of online courses that were considerably less rigorous than courses offered at the school. Moreover, the online students were able to take multiple courses in the span of a single semester, which gave them considerably more credits than students who enrolled in in-person courses. The school had not established policies governing the transfer of virtual credits and had failed to ensure that virtual courses were as rigorous as traditional courses.

Policy Questions:

- How is class rank determined among virtual students?
- How does your organization measure course completion/credits (instructional minutes, competency, etc.)?
- Is virtual course content aligned with applicable content standards?
- How will your organization and the virtual provider compare course completion information to ensure that credits are accurately and reliably awarded?
- May students begin a new course if they complete a self-paced course prior to the end of your normal grading period?
- Is there a maximum number of credits a student may earn per unit time (e.g., per traditional grading period or per year) that conflicts with self-paced acceleration of academic progress?

- Is there a limit to the number of credits a student is permitted to transfer in for the calculation of grade point average, class rank, honors, etc.?
- Is there a limit to the number of credits a student is permitted to transfer in for graduation purposes?
- Does your organization's calendar need to be adjusted for students participating in virtual coursework (e.g., can credits be completed in a virtual school with an academic calendar that does not coincide exactly with yours)?

Common Practices:

- Once a school establishes a policy governing how credit is awarded for virtual courses, those credits can be transferred in the same way as any other transferrable credits.

Topic Area 19: Student Disability Information

Example:

A student with partially impaired vision enrolls in a virtual class. Without access to this information, the instructor has no way of knowing that the student needs curricular materials to be adapted to meet his physical needs. The absence of information about special needs may effectively deny equitable access to this student who requires adaptive or assistive technologies, or other modifications to which he is entitled.

Policy Questions:

- What demographic information is required for the organization's state and federal public reporting?
- What information about a student's special needs is necessary to ensure equitable access to virtual education?
- What information about a student's special needs is necessary for informed and appropriate decisions about services, placement, and accommodations?
- What other health-related information is necessary for appropriate curricular accommodations for students (e.g., adjusting "field work" requirements for a student hospitalized for an extended period)?

Common Practices:

- Instructors may need to know about a student's disabilities, related individualized education plans (IEPs), and Section 504 plans for informed decisionmaking.
- Technical staff may need to know when special adaptive and assistive technologies (e.g., large print monitors or script readers) are required for a student to equitably participate in virtual education, even though access to the student's disability status information may be restricted.
- Virtual education can be an adaptive technology in itself when students are not mobile or unable to attend a traditional school (e.g., when they are home- or hospital-bound).

Topic Area 20: Staff Member Information

Examples:

A student complains about receiving harassing e-mails from "someone" at her virtual school. Without a robust technology security system, neither the local nor the virtual school may be able to confirm the source of the allegedly harassing messages.

A student who attends a local school also takes a virtual course. When he suddenly stops showing up at school, an alert administrator wants to ask his virtual school teacher whether the student is still participating in the virtual course. Without accurate contact information, the administrator may be unable to contact the virtual teacher in a timely manner.

Policy Questions:

- Do you maintain identification information about employees, contractors, consultants, volunteers, in-kind providers, independent contractors, businesspeople, and any other individual providing services to students?
- Does your organization maintain identification information about staff who work at virtual schools, especially for individuals whose jobs put them in contact with students or confidential student information, either directly or indirectly?
- Is each staff member, contractor, etc., assigned a unique identification number?
- Must these identifying numbers be unique across all institutions within the state?
- Is the virtual provider required to assign its staff members unique identification numbers?
- How will your organization and the virtual provider compare unique identification numbers to ensure that staff records are accurately matched?
- What demographic information about virtual school staff members should your organization maintain, and what information about virtual school staff need only be available on request?
- What do you need to know about a staff member's disabilities to ensure an accommodating work environment?
- Are background checks conducted by outside organizations acceptable?
- What virtual school staff will have access to data about your student? Is access to be limited by "need to know" and security clearance verification? Have all privacy expectations, based on the Family Educational Rights and Privacy Act (FERPA) and state laws, been formally communicated to the virtual school?
- Must staff members reside in a specified geographic region (e.g., in the community served by the school district)?
- Do you need to know where virtual school teachers are physically located to verify their credentials (e.g., relative to standards applicable in their home state)?
- Should you maintain contact information about virtual school teachers in case an administrator needs to call, e-mail, or otherwise contact them?
- Should contact information be maintained in case law enforcement officials need to locate a virtual school teacher?
- Should teacher contact information be posted in a publicly accessible location or format?

Common Practices:

- Accurate data systems should include identification information about employees, contractors, consultants, volunteers, in-kind providers, independent contractors, business people, and any other individual providing services to students.
- Data systems should distinguish between a Teacher of Record, an on-site facilitator, an instructional designer, and a technical support provider.

- Data systems should allow users to calculate the size of virtual classes in which their students are enrolled, as well as whether contact between the virtual school and the student comes from the Teacher of Record or from a teacher's assistant.
- Any exchange of staff member information among virtual and local schools should include unique identification numbers in order to facilitate record matching across data systems.
- Depending on policies and reporting requirements, some organizations maintain detailed demographic information about employees and contractors.
- Technical staff may need to know when special adaptive and assistive technologies (e.g., large print monitors or script readers) are required for staff members to accomplish their job, even though access to staff disability status may be restricted.
- Staff members capable of accessing student data may include administrators and instructors, as well as technical and research staff who maintain and operate data systems. Many institutions require that all staff with access to individual staff or student information be credentialed or licensed, receive a background check/security clearance, and have a "need to know" as defined by FERPA.
- Because virtual courses are offered from locations around the globe, maintaining accurate contact information about virtual school staff is imperative. Information about e-mail addresses and websites is especially important for virtual communications. Telephone numbers should include international (country) codes as applicable for staff outside of the United States.
- A local school may choose to maintain both personal and business contact information for virtual education staff, including all instructional, administrative, and technical staff who have contact with the school's students or access to their confidential information.

Topic Area 21: Staff Member Employment Status

Example:

Selecting a virtual school as the district's supplemental education partner was difficult. The school board was unable to break the tie between the competing service providers, until a perceptive board member noticed that one of the virtual schools had a much lower staff turnover rate than the other. The school board felt strongly that this indicator of stability differentiated the competitors, and finally selected its new virtual service provider.

Policy Questions:

- Do your contracts with service providers (such as virtual schools) clearly state that your organization does not assume an employment relationship with contracted staff?
- Should you maintain employment status information for contracted virtual service providers (how long teachers have been employed by the virtual school, employment history, etc.)?

Common Practices:

- Virtual school staff members have privacy rights. Any information maintained by a local school, SEA, or LEA about virtual service providers should be afforded standard privacy considerations, as specified by education and employment regulations.
- If an education institution is paying a virtual teacher or other staff member directly, it must verify employment eligibility based on standard, federally recognized criteria.

Topic Area 22: Staff Member Employment Credentials

Example:

Like all schools, the local high school had to report the number of qualified teachers who instructed their students. This status was based in part on state certification, which required teachers to have completed a state history course in college. Administrators wondered how the school's virtual service providers could be expected to have taken such a course if they lived in other states.

Policy Questions:

- Does your organization have credentialing requirements for staff members (e.g., teaching degrees or certificates), and do these credentialing requirements apply to virtual education staff?
- Can staff acquire exceptions to these requirements (e.g., virtual staff who do not live in your state may not need to have taken a state history course)?
- Does any other governing body (e.g., an SEA) need to approve these exceptions?
- Should you maintain experience information for contracted virtual service providers (e.g., how long teachers have been employed by the virtual school)?
- Does your organization require teachers to hold a certification for online teaching?

Common Practices:

- Assessing virtual school staff credentials is no different than evaluating traditional staff credentials. However, because many credentialing requirements are based on local or state regulations not otherwise applicable to virtual staff (e.g., they may not have attended a college offering a required local state history course), policymakers may consider whether exceptions to some credentialing requirements are appropriate for virtual staff.
- Credentialing requirement exceptions may need to be approved by other governing bodies (e.g., an SEA or LEA).
- The terms "certification," "licensure," and "endorsement" are not used consistently across the nation. Care should be taken to verify meaning when using this terminology.

Topic Area 23: Staff Member Assignment Information

Example:

A virtual school advertises a 12:1 student-to-instructor ratio for its middle school classes. However, the virtual provider includes online teaching assistants in its definition of "instructor." In reality, its student-to-certified teacher ratio is 36:1, which is not what contracting school districts had been led to expect.

Policy Questions:

- Can your data system distinguish between a Teacher of Record, and on-site facilitator, an instructional designer, and a technical support provider?

Forum Guide to the Teacher-Student Data Link: A Technical Implementation Resource (2013)

This resource provides a practical guide for implementing a teacher-student data link (TSDL) that supports a range of uses at the local, regional, and state levels. The guide addresses the considerations for linking teacher and student data from multiple perspectives, including governance, policies, data components, business rules, system requirements, and practices. It provides references to promising practices for high quality data linkages, including TSDL-specific processes such as roster verification and the establishment of the Teacher of Record.

- Does your organization have a required curriculum framework, content standard, class time, or instructional approach that applies to virtual coursework?
- Does your organization expect class size to be within a certain range?
- May class size limits be modified in the presence of online teaching assistants or other special circumstances?
- Can you map virtual coursework to your organization's course classification system?

Common Practices:

- Course names may vary between organizations. As with any course information translated from other institutions, course codes and coding systems must be coordinated if data are to be meaningful.
- The School Courses for the Exchange of Data (SCED) Classification System provides a voluntary, common classification system for prior-to-secondary and secondary school courses that can be used to compare course information, maintain longitudinal data about students' coursework, and efficiently exchange course-taking records.
- Determinations about the adequacy of staff member credentials are often contingent upon assignment. For example, a math credential is relevant for an individual teaching an algebra class, but less relevant for a language arts teacher. Mapping course subject to educator (or staff member) credential can help to determine best fit for staff assignments.

CEDS Connection: School Courses for the Exchange of Data (SCED)

SCED is a voluntary, common classification system for prior-to-secondary and secondary school courses.

This connection contains the basic data elements needed to implement the SCED classification system, which can be used to map course information from one classification system to another. SCED can also be used to compare course information; maintain longitudinal data about students' coursework; and exchange course-taking records.

Topic Area 24: Staff Member Attendance Information

Example:

When a problem with student behavior arises, local administrators try to get a status report on the student's performance from his two virtual teachers. Administrators then learn that, in addition to a barrier of two time zones, communication with virtual teachers is further complicated by the virtual school's poorly defined office hours and by e-mail inquiries that are guaranteed to be answered "within five days."

Policy Questions:

- Does your organization need to know when virtual school teachers, administrators, or other staff members are (and are not) expected to be available to your students?
- Do you need to know when virtual school staff are (and are not) expected to be available to your administrators and teachers?
- What specific attendance expectations apply to virtual school staff?
- How might virtual school staff schedules need to be adjusted to accommodate your school day (or vice versa)?
- Will time zone differences complicate this scheduling?

Common Practices:

- Whatever the method, attendance should be reported consistently and in a manner that reflects policy direction (based on reporting requirements and the information needs of decisionmakers).
- Attendance should incorporate after-hours (e.g., at-home) activities for all virtual evening classes.

Appendix A: Examples of SEA and LEA Policies

Course Scheduling and Credit

To avoid discrepancies in data collection around course schedules and credit, some SEAs and LEAs have chosen to record virtual courses as yearlong and give them weight according to the value of the course rather than the timeframe over which the course is completed. For example, a student may take a .5 credit virtual history course that is slated as a yearlong course. Because it is only worth .5 credits, such a course would appear as a single semester option in a traditional system. However, the expanded timeframe of a year allows the student to complete the course at his or her own pace—which may be faster or slower than a traditional single-semester course. Regardless of whether or not students follow a consistent pattern of individual class completion, they receive credit if the course is completed prior to the end of the school year. By recording the course as a yearlong course, the actual record of completion and credit can hold to the end of the year for recording, allowing the SEA or LEA the flexibility to manage the data.

Attendance and Competency

The actual length of time required for students to demonstrate competency in a course varies, and measures of competency are often better indicators of student success in virtual courses than traditional measures of seat time such as Carnegie Units. As a result, some SEAs and LEAs have begun tracking competency instead of traditional attendance measures. To shift the focus from attendance to competency, SEAs and LEAs may establish baseline values for a course and determine appropriate assessments to measure student skills and knowledge required for the established course objectives. Such competency measurements eliminate the need to track attendance in the traditional fashion of "seat time" and minutes.

SEAs and LEAs that employ competency-based measures may need to establish new policies to ensure that students are progressing in virtual courses. Common practices include

- establishing a regular schedule of teacher-student meetings to monitor progress, and increasing the frequency of the meetings if needed;
- maintaining timelines for achieving course objectives and reevaluating and adjusting timelines quickly if students cannot meet objectives; and
- informing parents and guardians of course objectives and timelines so that if objectives are not met within the timeline, the student, parent or guardian, and teacher can adapt the timeline and/or workload to ensure that the student achieves competency.

Appendix B: SEA Virtual and Distance Learning Websites

The types of virtual education opportunities available to students vary across states. Many SEAs have established websites with information on state virtual schools, other virtual education providers, and relevant policies, laws, and regulations that determine the SEA's approach to virtual education. The list below provides links to information on virtual education available through each SEA's website.

State	Website
Alabama	Alabama Connecting Classrooms, Educators, & Students Statewide (ACCESS) Distance Learning
Alaska	Alaska's Learning Network Alaska Statewide Correspondence Schools
Arizona	Arizona Online Instruction
Arkansas	Arkansas Digital Learning
California	California eLearning Framework
Colorado	Colorado Department of Education Blended and Online Learning
Connecticut	Connecticut Distance Learning Consortium
Florida	Florida Department of Education Virtual Education
Georgia	Georgia Virtual Learning Georgia eCore
Hawaii	Hawaii Virtual Learning Network
Idaho	Idaho Digital Learning
Illinois	Illinois Virtual School Illinois State Charter School Commission Virtual Schooling Report and Recommendations
Indiana	Indiana Virtual School Indiana Connections Academy
Iowa	Iowa Learning Online
Kansas	Kansas State Department of Education Virtual Schools and Programs Webpage
Kentucky	Kentucky Virtual Course Providers
Louisiana	Louisiana Connections Academy Louisiana Supplemental Course Academy Louisiana Virtual Charter Academy
Maine	Maine Virtual Academy Maine Connections Academy

State	Website
Maryland	Maryland Virtual Learning Opportunities Maryland State Department of Education Process and Procedures for Offering Student Online Courses in Maryland Public Schools
Massachusetts	Massachusetts Department of Elementary and Secondary Education Digital Learning
Michigan	Michigan Virtual School Michigan Merit Curriculum Online Experience Guideline
Minnesota	Minnesota Department of Education (MDE) Online Learning MDE Approved Online Learning Provider List
Mississippi	Mississippi Virtual Public School
Missouri	Missouri Virtual Instruction Program
Montana	Montana Office of Public Instruction Distance Learning Registration and Registered Providers Montana Virtual Academy Montana Digital Academy
Nebraska	Nebraska Virtual Instruction Source Nebraska Virtual High School
Nevada	Nevada Department of Education Distance Education
New Hampshire	New Hampshire Educators Online New Hampshire Virtual Learning Academy
New Jersey	New Jersey Virtual School
New Mexico	Innovative Digital Education and Learning – New Mexico
New York	New York State Education Department Online and Blended Learning
North Carolina	North Carolina Virtual Public School Public Schools of North Carolina Financial and Business Services
North Dakota	North Dakota Center for Distance Education
Ohio	Ohio Resource Center iLearnOhio
Oklahoma	Oklahoma State Department of Education Statewide Virtual Charter School Board Instructional Technologies – Supplemental Online Courses
Oregon	Oregon Department of Education Educational Technology Oregon Virtual School District

State	Website
Pennsylvania	Pennsylvania Department of Education Cyber Charter Schools
Rhode Island	Rhode Island Department of Education Virtual & Digital Learning
South Carolina	Virtual South Carolina South Carolina Department of Education Virtual Education
South Dakota	South Dakota Virtual School
Tennessee	Tennessee Online Public School
Texas	Texas Virtual School Network (TxVSN)
Utah	Utah State Office of Education Statewide Online Education Program
Vermont	Vermont Virtual Learning Cooperative
Virginia	Virginia Department of Education Virtual Learning
Washington	Washington Office of Superintendent of Public Instruction Digital Learning Department
West Virginia	Distance Learning and the West Virginia Virtual School West Virginia Virtual School
Wisconsin	Wisconsin Digital Learning Collaborative Wisconsin Department of Public Instruction Online Learning: A Guide for Schools Wisconsin Department of Public Instruction Virtual Charter Schools
Wyoming	Wyoming Switchboard Network

Appendix C: Suggested Elements for Virtual Education Data Systems

The basic unit of information within an education information system is the data element. A data element is an atomic unit of data that has precise meaning or precise semantics that can be defined and measured. This chapter provides a list of data elements that are commonly used in virtual education data systems. Many of these elements are not unique to virtual education and they may already be in use in existing, non-virtual data systems. The elements are categorized according to the topic areas discussed in Chapter 3.

1. School Identification/Classification
2. School Governance
3. School Accreditation
4. School Contact Information
5. School Location
6. School Enrollment
7. School Calendar
8. Course Information
9. Course Section Information
10. Unit Information, Learner Activities, and Resources
11. Content Governance and Accountability
12. Reporting Information
13. Safety and Discipline
14. Student Information
15. Student Enrollment/Exit Information
16. Student Attendance Information
17. Student Participation/Performance Information
18. Student Progress Information
19. Student Disability Information
20. Staff Member Information
21. Staff Member Employment Status
22. Staff Member Employment Credentials
23. Staff Member Assignment Information
24. Staff Member Attendance Information

While this list includes elements that are commonly used in virtual education data systems, it does not include a comprehensive list of all possible virtual education data elements. Members of the Forum's Virtual Education Working Group identified these elements as useful for establishing virtual education data systems that are capable of providing information for basic operational, management, and reporting purposes. SEAs and LEAs may find this list useful as they build new data systems or expand existing systems to capture data on virtual education.

Topic Area	Data Elements
1. School Identification/ Classification	Virtual Indicator Name of Institution School Identifier School Identification System Administrative Funding Control School Type Magnet or Special Program Emphasis School Charter School Indicator Organization Type Short Name of Institution Grades Offered School Level Charter School Type School Operational Status Operational Status Effective Date Program Type Alternative School Focus Type
2. School Governance	Name of Institution Administrative Funding Control Responsible District Type Responsible Organization Type Responsible School Type
3. School Accreditation	Name of Institution Accreditation Agency Name Accreditation Award Date Accreditation Expiration Date
4. School Contact Information	Institution Telephone Number Type Primary Telephone Number Indicator Telephone Number Web Site Address Virtual Indicator Address City School Identifier School Identification System Name of Institution Address Postal Code State Abbreviation Address Street Number and Name Address Type for Organization Local Education Agency Identifier Local Education Agency Identifier System

Topic Area	Data Elements
5. School Location	Address Type for Organization Address Street Number and Name Address Apartment Room or Suite Number Building Site Number Address City State Abbreviation Address County Name Latitude Longitude Address Postal Code County ANSI Code Country Code
6. School Enrollment	Local Education Agency Identifier Local Education Agency Identification System School Identifier School Identification System Responsible District Identifier Responsible District Type Responsible School Identifier Enrollment Entry Date Responsible School Type Entry Grade Level Entry Type Exit Grade Level Exit or Withdrawal Type Exit or Withdrawal Status Cohort Year Cohort Graduation Year Enrollment Status Enrollment Exit Date

Topic Area	Data Elements
7. School Calendar	Session Type Session Begin Date Session End Date Days in Session Instructional Minutes Session Code Session Description Session Marking Term Indicator Session Scheduling Term Indicator School Year Calendar Code Calendar Description First Instruction Date Last Instruction Date School Year Minutes Minutes Per Day Session Attendance Term Indicator Virtual Indicator Achievement Criteria Achievement Criteria URL Competency Set Completion Criteria Competency Set Completion Criteria Threshold Course Section Identifier Learning Standard Document Creator Learning Standard Document Description Learning Standard Document Identifier URL Learning Standard Document Jurisdiction Learning Standard Document Publication Status Learning Standard Document Subject Learning Standard Document Title Learning Standard Document Valid End Date Learning Standard Document Valid Start Date Learning Standard Document Version Learning Standard Document Language Learning Standard Document License Learning Standard Document Publication Date Learning Standard Document Publisher Learning Standard Document Rights Learning Standard Document Rights Holder Learning Standard Item URL Learning Standard Item Code Learning Standard Item Education Level Learning Standard Item Identifier Learning Standard Item Prerequisite Identifier Learning Standard Item Statement Learning Standard Item Type Learning Standard Item Previous Version Identifier Learning Standard Item Blooms Taxonomy Domain Learning Standard Item Concept Keyword

Topic Area	Data Elements
8. Course Information	Course Code System Course Description Course Title Curriculum Framework Type Course Aligned with Standards Course Identifier Course Credit Units Course Credit Value Additional Credit Type SCED Course Code SCED Course Level SCED Course Subject Area SCED Grade Span SCED Sequence of Course Available Carnegie Unit Credit High School Course Requirement Course Grade Point Average Applicability Course Level Characteristic Instruction Language Core Academic Course Ability Grouping Status Advanced Placement Course Code Tuition Funded Credit Type Earned Related Learning Standards Course Section Assessment Reporting Method Course Department Name Blended Learning Model Type Career Cluster Course Applicable Education Level Course Certification Description Course Department Name Course Funding Program Course Interaction Mode Family and Consumer Sciences Course Indicator K12 End of Course Requirement National Collegiate Athletic Association Eligibility Work-based Learning Opportunity Type Course Section Instructional Delivery Mode Virtual Indicator

Topic Area	Data Elements
9. Course Section Information	Course Section Identifier Classroom Identifier Course Section Time Required for Completion Course Section Instructional Delivery Mode Session Begin Date Session End Date Session Designator Session Type Class Period Class Beginning Time Class Ending Time Class Meeting Days Timetable Day Identifier Receiving Location of Instruction Blended Learning Model Type Course Interaction Mode Virtual Indicator Competency Set Completion Criteria Competency Set Completion Criteria Threshold Achievement Criteria Learning Standard Item URL Learning Standard Item Code Learning Standard Item Statement Learning Standard Item Association Type Learning Standard Item Association Destination Node Name Learning Standard Item Association Destination Node URI Learning Standard Item Association Origin Note Name Learning Standard Item Association Origin Note URI Learning Standard Item Association Weight

Topic Area	Data Elements
10. Unit Information, Learner Activities, and Resources	Related Learning Standards Course Section Instructional Delivery Mode Learner Activity Add To Grade Book Flag Learner Activity Creation Date Learner Activity Description Learner Activity Due Date Learner Activity Due Time Learner Activity Language Learner Activity Maximum Attempts Allowed Learner Activity Maximum Time Allowed Learner Activity Maximum Time Allowed Unit Learner Activity Possible Points Learner Activity Prerequisite Learner Activity Release Date Learner Activity Rubric URL Learner Activity Title Learner Activity Type Learner Activity Weight Learner Action Actor Identifier Learner Action Date Time Learner Action Object Description Learner Action Object Identifier Learner Action Object Type Learner Action Type Learner Action Value Learning Resource Access API Type Learning Resource Access Hazard Type Learning Resource Access Mode Type Learning Resource Adaptation URL Learning Resource Adapted From URL Learning Resource Assistive Technologies Compatible Indicator Learning Resource Based On URL Learning Resource Book Format Type Learning Resource Concept Keyword Learning Resource Control Flexibility Type Learning Resource Copyright Holder Name Learning Resource Copyright Year Learning Resource Creator Learning Resource Date Created Learning Resource Description Learning Resource Digital Media Sub Type Learning Resource Digital Media Type Learning Resource Education Level Learning Resource Educational Use Learning Resource Intended End User Role Learning Resource Interactivity Type Learning Resource Language Learning Resource License URL Learning Resource Media Feature Type

Topic Area	Data Elements
11. Content Governance and Accountability	Responsible District Type Responsible Organization Type Responsible School Type Course Aligned with Standards Adequate Yearly Progress Status Alternate Adequate Yearly Progress Approach Indicator Annual Measurable Achievement Objective AYP Progress Attainment Status for LEP Students Annual Measurable Achievement Objective Proficiency Attainment Status for LEP Students Annual Measurable Achievement Objective Progress Attainment Status for LEP Students Appealed Adequate Yearly Progress Designation Adequate Yearly Progress Appeal Changed Designation Adequate Yearly Progress Appeal Process Date Accountability Report Title Elementary-Middle Additional Indicator Status Gun Free Schools Act Reporting Status High School Graduation Rate Indicator Status Local Education Agency Improvement Status Participation Status for Math Participation Status for Reading and Language Arts Proficiency Target Status for Math Proficiency Target Status for Reading and Language Arts Public School Choice Implementation Status Title III Professional Development Type School Year Competency Set Completion Criteria Competency Set Completion Criteria Threshold

Topic Area	Data Elements
12. Reporting Information	Assessment Content Standard Type Assessment Identification System Assessment Identifier Assessment GUID Assessment Title Assessment Type Assessment Short Name Assessment Academic Subject Assessment Level for Which Designed Assessment Objective Assessment Purpose Assessment Type Administered to Children With Disabilities Assessment Early Learning Developmental Domain Assessment Family Short Name Assessment Family Title Assessment Provider Assessment Revision Date Assessment Score Metric Type Language Code Achievement Title Achievement Description Achievement Start Date Achievement End Date Achievement Award Issuer Name Achievement Award Issuer Origin URL Achievement Category System Achievement Category Type Achievement Image URL Achievement Criteria Achievement Criteria URL Achievement Evidence Statement Learning Goal Description Learning Goal End Date Learning Goal Start Date Learning Goal Success Criteria Learner Activity Title Learner Activity Description Learner Activity Prerequisite Learner Activity Type Learner Activity Creation Date Learner Activity Maximum Time Allowed Learner Activity Maximum Time Allowed Unit Learner Activity Due Date Learner Activity Due Time Learner Activity Maximum Attempts Allowed Learner Activity Add To Grade Book Flag Learner Activity Release Date Learner Activity Weight Learner Activity Possible Points

Topic Area	Data Elements
13. Safety and Discipline	Incident Identifier Incident Time Incident Location Facilities Identifier Reporter Identifier Disciplinary Action Taken Duration of Disciplinary Action Incident Date Incident Reporter Type Incident Description Incident Behavior Incident Injury Type Related to Zero Tolerance Policy Incident Time Description Code IDEA Interim Removal Reason IDEA Interim Removal Discipline Reason Educational Services After Removal Incident Cost Secondary Incident Behavior Disciplinary Action Start Date Disciplinary Action End Date Discipline Action Length Difference Reason Full Year Expulsion Shortened Expulsion Incident Multiple Offense Type Incident Perpetrator Identifier Incident Perpetrator Injury Type Incident Perpetrator Type Incident Person Role Type Incident Regulation Violated Description Incident Related to Disability Manifestation Incident Reported to Law Enforcement Indicator Incident Victim Identifier Incident Victim Type Incident Witness Identifier Incident Witness Type

Topic Area	Data Elements
14. Student Information	Public School Residence Status Hispanic or Latino Ethnicity American Indian or Alaska Native Asian Black or African American Native Hawaiian or Other Pacific Islander White Demographic Race Two or More Races Sex Birthdate City of Birth State of Birth Abbreviation Country of Birth Code Language Type Language Code Homelessness Status Migrant Status Economic Disadvantage Status Eligibility Status for School Food Service Programs Participation in School Food Service Programs First Entry Date into a US School Limited English Proficiency Status Birthdate Verification Military Connected Student Indicator Entry Grade Level Exit Grade Level
15. Student Enrollment/Exit Information	Enrollment Status Enrollment Entry Date Entry Type Entry Grade Level Cohort Year Enrollment Exit Date Exit or Withdrawal Status Exit or Withdrawal Type Nonpromotion Reason Promotion Reason LEA Identifier LEA Identification System School Identifier School Identification System Responsible District Identifier Responsible District Type Responsible School Identifier Responsible School Type Exit Grade Level Cohort Graduation Year Displaced Student Status Promotion Reason

Topic Area	Data Elements
16. Student Attendance Information	Number of Days Absent Number of Days in Attendance Calendar Event Date Attendance Event Type Attendance Status Absent Attendance Category Present Attendance Category Student Attendance Rate
17. Student Participation/ Performance Information	Enrollment Entry Date Enrollment Exit Date Exit or Withdrawal Type Name of Institution School Identifier School Identification System Program Name Program Identifier Course Title Course Identifier SCED Course Code Course Code System Responsible School Type Number of Credits Attempted Number of Credits Earned Student Course Section Grade Earned Responsible District Type Responsible Organization Type

Topic Area	Data Elements
18. Student Progress Information	Promotion Reason Nonpromotion Reason Credits Attempted Cumulative Credits Earned Cumulative Grade Points Earned Cumulative Grade Point Average Given Session Grade Point Average Cumulative High School Student Class Rank Size of High School Graduating Class Class Ranking Date Projected Graduation Date Honors Description Credit Type Earned Grade Value Qualifier Proficiency Status Progress Level Number of Credits Attempted Number of Credits Earned Student Course Section Grade Earned Course Repeat Code Course Identifier Course Code System Course Title Grade Level When Course Taken Technology Literacy Status in 8th Grade Diploma or Credential Award Date High School Diploma Type Academic Honors Type High School Diploma Distinction Type Career and Technical Education Completer Recognition for Participation or Performance in an Activity End of Term Status Literacy Assessment Administered Type Literacy Goal Met Status Literacy Post Test Status Literacy Pre Test Status Postsecondary Enrollment Action Cohort Description Graduation Rate Survey Cohort Year Graduation Rate Survey Indicator Pre and Post Test Indicator Career Education Plan Date Career Education Plan Type Course Department Name Professional or Technical Credential Conferred Student Course Section Grade Narrative

Topic Area	Data Elements
19. Student Disability Information	Primary Disability Type Disability Condition Type IDEA Indicator Section 504 Status Awaiting Initial IDEA Evaluation Status IDEA Educational Environment for School Age Disability Determination Source Type Disability Status
20. Staff Member Information	First Name Middle Name Last or Surname Generation Code or Suffix Personal Title or Prefix Other First Name Other Last Name Other Middle Name Other Name Other Name Type Staff Member Identifier Staff Member Identification System Social Security Number Personal Information Verification Hispanic or Latino Ethnicity White Native Hawaiian or Other Pacific Islander American Indian or Alaska Native Asian Black or African American Sex Birthdate Address Type for Staff Address Street Number and Name Address Apartment Room or Suite Number Address City Address County Name Address Postal Code State Abbreviation Country Code Telephone Number Type Telephone Number Primary Telephone Number Indicator Electronic Mail Address Type Electronic Mail Address

Topic Area	Data Elements
21. Staff Member Employment Status	Employment Status Employment Start Date Employment End Date Employment Separation Reason Position Title Hire Date Contract Days of Service Per Year Staff Compensation Base Salary Employment Separation Type Staff Compensation Health Benefits Staff Compensation Retirement Benefits Staff Compensation Other Benefits Salary for Teaching Assignment Only Indicator Staff Compensation Total Benefits Staff Compensation Total Salary Migrant Education Program Personnel Indicator Title I Targeted Assistance Staff Funded
22. Staff Member Employment Credentials	Credential Type Teaching Credential Type Teaching Credential Basis Credential Issuance Date Credential Expiration Date Years of Prior Teaching Experience Highest Level of Education Completed Highly Qualified Teacher Indicator Paraprofessional Qualification Status Program Sponsor Type Career and Technical Education Instructor Industry Certification

Topic Area	Data Elements
23. Staff Member Assignment Information	School Level Session Type Local Education Agency Identifier Local Education Agency Identification System School Identifier School Identification System Teaching Assignment Start Date Teaching Assignment End Date K12 Staff Classification Primary Assignment Indicator Staff Full Time Equivalency Assignment Start Date Assignment End Date Classroom Position Type Itinerant Teacher Migrant Education Program Staff Category Professional Educational Job Classification Special Education Age Group Taught Special Education Paraprofessional Special Education Related Services Personnel Special Education Staff Category Special Education Teacher Title I Program Staff Category Staff Member Identifier Staff Member Identification System Teacher of Record Teaching Assignment Role Teaching Assignment Contribution Percentage Classroom Position Type SCED Course Code Course Section Identifier Course Title Course Code System Course Identifier Course Aligned with Standards Course Interaction Mode Course Section Time Required for Completion Course Section Instructional Delivery Mode Class Period Instruction Language Classroom Identifier Session Begin Date Session End Date Session Designator Receiving Location of Instruction Virtual Indicator Days In Session School Year Minutes Instructional Minutes
24. Staff Member Attendance Information	Leave Event Type Attendance Status

Appendix D: References and Related Resources

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Richard B. Russell National School Lunch Act, 42 U.S.C. 1751 et seq.

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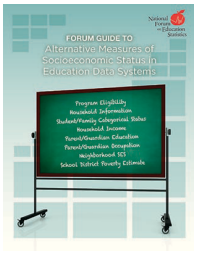
Additional Resources

Common Education Data Standards
https://ceds.ed.gov/
The Common Education Data Standards (CEDS) project is a national collaborative effort to develop voluntary, common data standards for a key set of education data elements to streamline the exchange, comparison, and understanding of data within and across P-20W institutions and sectors. This common vocabulary enables more consistent and comparable data to be used throughout all education levels and sectors necessary to support improved student achievement. CEDS is a voluntary effort that increases data interoperability, portability, and comparability across states, districts, and higher education organizations.

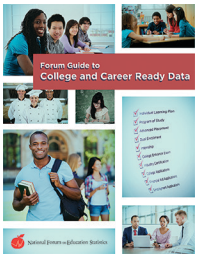
Learning Registry
http://learningregistry.org/
The Learning Registry is a new approach to capturing, connecting, and sharing data about learning resources available online with the goal of making it easier for educators and students to access the rich content available in the ever-expanding digital universe. The Learning Registry is a joint effort of the Department of Education and the Department of Defense, with support of the White House and numerous federal agencies, non-profit organizations, international organizations, and private companies.

U.S. Department of Education Privacy Technical Assistance Center (PTAC)
http://ptac.ed.gov/
PTAC is a "one-stop" resource for education stakeholders to learn about data privacy, confidentiality, and security practices related to student-level longitudinal data systems and other uses of student data. PTAC was established by the U.S. Department of Education to provide timely information and updated guidance on privacy, confidentiality, and security practices through a variety of resources, including training materials and opportunities to receive direct assistance with privacy, security, and confidentiality of student data systems.

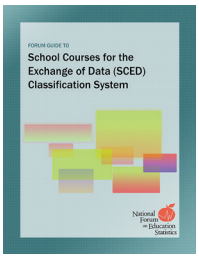
Forum Resources



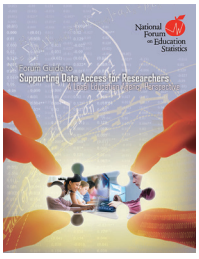
Forum Guide to Alternative Measures of Socioeconomic Status in Education Data Systems (2015)
http://nces.ed.gov/forum/pub_2015158.asp
The Forum Guide to Alternative Measures of Socioeconomic Status in Education Data Systems provides "encyclopedia-type" entries for eight plausible alternative measures of socioeconomic status (SES) to help readers better understand the implications of collecting and interpreting a range of SES-related data in education agencies. Chapter 1 reviews recent changes in how SES data are collected in many education agencies and presents a call to action to the education community. Chapter 2 reviews practical steps an agency can take to adopt new measures. Chapter 3 describes each of the eight alternative measures, including potential benefits, challenges, and limitations of each option.



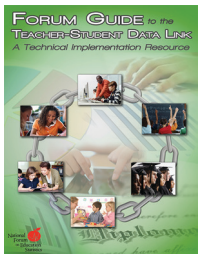
Forum Guide to College and Career Ready Data (2015)
http://nces.ed.gov/forum/pub_2015157.asp
This guide examines how education agencies can use data to support college and career readiness (CCR) initiatives. It includes five use cases focused on the data needs and helpful analytics for (1) fostering individualized learning for students, (2) supporting educators in addressing student-specific needs, (3) guiding CCR programmatic decisions using postsecondary feedback loops, (4) measuring accountability and continuous improvement, and (5) maximizing career opportunities for all students.



Forum Guide to School Courses for the Exchange of Data (SCED) Classification System (2014)
http://nces.ed.gov/forum/pub_2014802.asp
School Courses for the Exchange of Data (SCED) is a voluntary, common classification system for prior-to-secondary and secondary school courses that can be used to compare course information, maintain longitudinal data about student coursework, and efficiently exchange course-taking records. This best practice guide provides an overview of the SCED structure and descriptions of the SCED Framework elements, recommended attributes, and information for new and existing users on best practices for implementing and expanding their use of SCED.



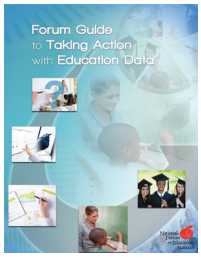
Forum Guide to Supporting Data Access for Researchers: A Local Education Agency Perspective (2014)
http://nces.ed.gov/forum/pub_2014801.asp
The Forum Guide to Supporting Data Access for Researchers: A Local Education Agency Perspective is intended to help local education agencies (LEAs) field, support, and monitor research requests for access to data on staff and students. At its foundation is a focus on the unique needs of LEAs, including the fact that they receive requests from researchers for both existing data (data already collected by the LEA) and new data (data to be collected by researchers through direct interaction with students, staff, or records systems). The guide presents core practices, operations, and templates that that can be adapted by LEAs as they consider how to respond to these requests for data.



Forum Guide to the Teacher-Student Data Link: A Technical Implementation Resource (2013)

http://nces.ed.gov/forum/pub_2013802.asp

The Forum Guide to the Teacher-Student Data Link: A Technical Implementation Resource provides a practical guide for implementing a teacher-student data link (TSDL) that supports a range of uses at the local, regional, and state levels. The guide addresses the considerations for linking teacher and student data from multiple perspectives, including governance, policies, data components, business rules, system requirements, and practices. It provides references to promising practices for high quality data linkages, including TSDL-specific processes such as roster verification and the establishment of the Teacher of Record.



Forum Guide to Taking Action with Education Data (2013)

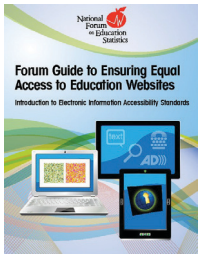
http://nces.ed.gov/forum/pub_2013801.asp

The Forum Guide to Taking Action with Education Data provides stakeholders with practical information about the knowledge, skills, and abilities needed to more effectively access, interpret, and use education data to inform action. The document includes an overview of the evolving nature of data use, basic data use concepts, and a list of skills necessary for effectively using data. The Guide recommends a question-driven approach to data use, in which the following questions can help guide readers who need to use data to take action: What do I want to know? What data might be relevant? How will I access relevant data? What skills and tools do I need to analyze the data? What do the data tell me? What are my conclusions? What will I do? What effects did my actions have? What are my next steps? The Briefs that accompany the Introduction are written for three key education audiences: Educators, School and District Leaders, and State Program Staff.

Forum Guide to Supporting Data Access for Researchers: A State Education Agency Perspective (SEA) (2012)

http://nces.ed.gov/forum/pub_2012809.asp

The Forum Guide to Supporting Data Access for Researchers: A State Education Agency Perspective recommends policies, practices, and templates that can be adopted and adapted by SEAs as they consider how to most effectively respond to requests for data about the education enterprise, including data maintained in longitudinal data systems. These recommendations reflect sound principles for managing the flow of data requests, establishing response priorities, monitoring appropriate use, protecting privacy, and ensuring that research efforts are beneficial to the education agency as well as the research community.



Forum Guide to Ensuring Equal Access to Education Websites (2011)

http://nces.ed.gov/forum/pub_2011807.asp

The Forum Guide to Ensuring Equal Access to Education Websites is designed for use by information technology administrators, data specialists, and program staff responsible for the "content" in data reports, as well as education leaders (e.g., administrators who prioritize tasks for technical and data staff), and other stakeholders who have an interest in seeing that our schools, school districts, and state education agencies operate in an effective and equitable manner for all constituents, regardless of disability status. It is intended to raise awareness in nontechnical audiences and suggest best practices for complying with Section 508 goals at an operational level in schools, school districts, and state education agencies. It is not intended to recreate technical resources that already exist to facilitate Section 508 compliance.

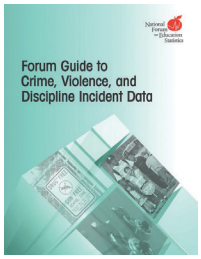
Traveling Through Time: The Forum Guide to Longitudinal Data Systems (Series)
Book I: What is an LDS? (2010)
http://nces.ed.gov/forum/pub_2010805.asp

Book II: Planning and Developing an LDS (2011)
http://nces.ed.gov/forum/pub_2011804.asp

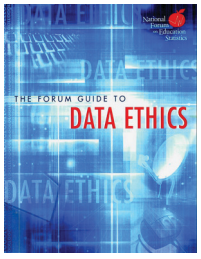
Book III: Effectively Managing LDS Data (2011)
http://nces.ed.gov/forum/pub_2011805.asp

Book IV: Advanced LDS Usage (2011)
http://nces.ed.gov/forum/pub_2011802.asp

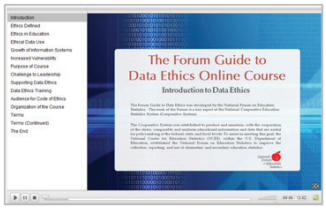
Longitudinal data systems (LDSs) are increasingly becoming the state of the art in education data. An LDS makes it possible not only to monitor the success of individual students, but also to identify trends in those students' education records. These systems provide powerful and timely insights about students and allow educators to tailor instruction to better meet individual needs. They can also reveal with great clarity the effects our policies, programs, and decisions have on schools. The *Traveling Through Time* series is intended to help state and local education agencies meet the many challenges involved in developing robust systems, populating them with quality data, and using this new information to improve the education system. The series introduces important topics, offers best practices, and directs the reader to additional resources related to LDS planning, development, management, and use.



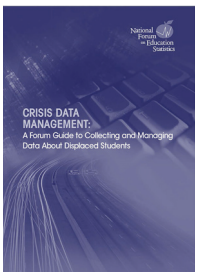
Forum Guide to Crime, Violence, and Discipline Incident Data (2011)
http://nces.ed.gov/forum/pub_2011806.asp
This document focuses on the use of crime, violence, and discipline data to improve school safety. It presents strategies for implementing an incident database, including system design, management, and training; recommends a body of data elements, definitions, and code lists useful for collecting accurate and comparable data about crime, violence, and discipline; and offers suggestions for the effective presentation and reporting of data. This guide was created in collaboration with the Discipline Data Working Group of the U.S. Department of Education to ensure that it will be useful to states and districts reporting data to the Office for Civil Rights, the Office of Safe and Drug Free Schools, the Office of Special Education and Rehabilitative Services, and ED*Facts*.



Forum Guide to Data Ethics (2010)
http://nces.ed.gov/forum/pub_2010801.asp
While laws set the legal parameters that govern data use, ethics establish fundamental principles of "right and wrong" that are critical to the appropriate management and use of education data in the technology age. This guide reflects the experience and judgment of seasoned data managers; while there is no mandate to follow these principles, the authors hope that the contents will prove a useful reference to others in their work.



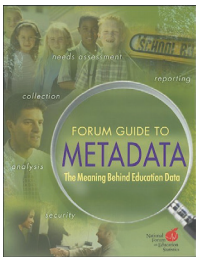
Forum Guide to Data Ethics Online Course
http://nces.ed.gov/forum/dataethics_course.asp
The Forum Guide to Data Ethics Online Course is based on the *Forum Guide to Data Ethics* and includes an online test. Individuals who pass receive a certificate.



Crisis Data Management: A Forum Guide to Collecting and Managing Data About Displaced Students (2010)

http://nces.ed.gov/forum/pub_2010804.asp

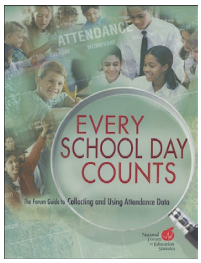
This document provides recommendations that can be used by elementary and secondary education agencies to establish policies and procedures for collecting and managing education data before, during, and after a crisis.



Forum Guide to Metadata: The Meaning Behind Education Data (2009)

http://nces.ed.gov/forum/pub_2009805.asp

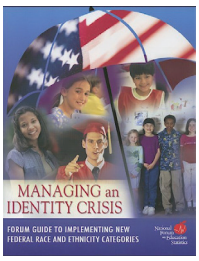
This document offers best practice concepts, definitions, implementation strategies, and templates/tools for an audience of data, technology, and program staff in state and local education agencies. It is hoped that this resource will improve this audience's awareness and understanding of metadata and, subsequently, the quality of the data in the systems they maintain.



Every School Day Counts: The Forum Guide to Collecting and Using Attendance Data (2009)

http://nces.ed.gov/forum/pub_2009804.asp

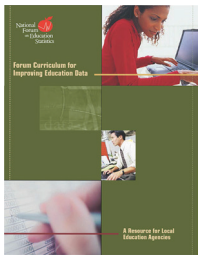
This document offers best practice suggestions on collecting and using student attendance data to improve performance. It includes a standard set of codes to make attendance data comparable across districts and states. The product also presents real-life examples of how attendance information has been used by school districts.



Managing an Identity Crisis: Forum Guide to Implementing New Federal Race and Ethnicity Categories (2008)

http://nces.ed.gov/forum/pub_2008802.asp

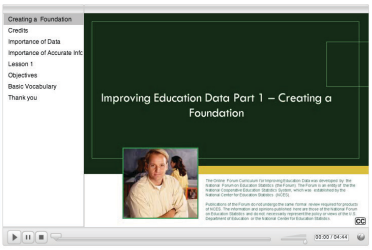
This best practice guide is developed to assist state and local education agencies implementing federal race and ethnicity categories—thereby reducing redundant efforts within and across states, improving data comparability, and minimizing reporting burden. It serves as a toolkit from which users may select and adopt strategies that will help them quickly begin the process of implementation in their agencies.



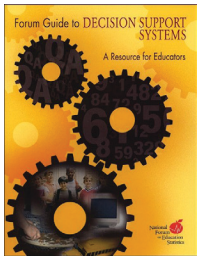
Forum Curriculum for Improving Education Data: A Resource for Local Education Agencies (2007)

http://nces.ed.gov/forum/pub_2007808.asp

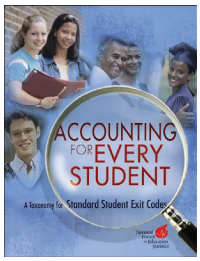
This curriculum supports efforts to improve the quality of education data by serving as training materials for K12 school and district staff.



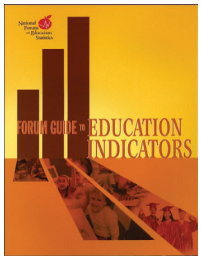
Improving Education Data Online Course
http://nces.ed.gov/forum/dataqualitycourse/dataquality.asp
The Improving Education Data Online Course is based on topics addressed in the Forum Curriculum for Improving Education Data: A Resource for Local Education Agencies. The course is offered in in two parts: Part 1 – Creating a Foundation introduces users to the concept of quality data, assists users in assessing school or district data quality issues, introduces the concept of classifying education data, and touches on laws governing data security and confidentiality. Part 2 – Coordinating Quality Data covers the roles and responsibilities of the data steward, discusses data flow and cycles and how they affect high-quality data, examines how data entry errors can affect quality data, introduces the concepts of a data dictionary, a data calendar, and a data audit. Finally, it suggests communications strategies that LEA staff should consider to improve data quality.



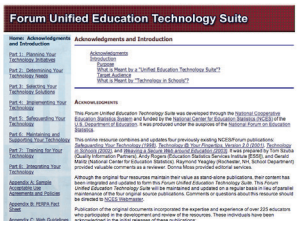
Forum Guide to Decision Support Systems: A Resource for Educators (2006)
http://nces.ed.gov/forum/pub_2006807.asp
This document was developed to remedy the lack of reliable, objective information available to the education community about decision support systems. It is intended to help readers better understand what decision support systems are, how they are configured, how they operate, and how they might be developed and implemented in an education setting.



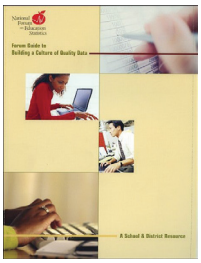
Accounting for Every Student: A Taxonomy for Standard Student Exit Codes (2006)
http://nces.ed.gov/forum/pub_2006804.asp
This guide presents an exhaustive and mutually exclusive exit code taxonomy that accounts, at any single point in time, for all students enrolled (or previously enrolled) in a particular school or district. It is based on exit code systems in use in state education agencies across the nation and a thorough review of existing literature on the subject.



Forum Guide to Education Indicators (2005)
http://nces.ed.gov/forum/pub_2005802.asp
This guide provides encyclopedia-type entries for 44 commonly used education indicators. Each indicator entry contains a definition, recommended uses, usage caveats and cautions, related policy questions, data element components, a formula, commonly reported subgroups, and display suggestions. The document will help readers better understand how to appropriately develop, apply, and interpret commonly used education indicators.



Forum Unified Education Technology Suite (2005)
http://nces.ed.gov/forum/pub_tech_suite.asp
The Forum Unified Education Technology Suite presents a practical, comprehensive, and tested approach to assessing, acquiring, instituting, managing, securing, and using technology in education settings. It will also help individuals who lack extensive experience with technology to develop a better understanding of the terminology, concepts, and fundamental issues influencing technology acquisition and implementation decisions.



Forum Guide to Building a Culture of Quality Data: A School and District Resource (2005)
http://nces.ed.gov/forum/pub_2005801.asp
This guide was developed by the Forum's Data Quality Task Force to help schools and school districts improve the quality of data they collect and to provide processes for developing a "Culture of Quality Data" by focusing on data entry—getting things right at the source. The quality of data will improve when all staff understand how the data will be used and how data become information. This guide will show how quality data can be achieved in a school or district through the collaborative efforts of all staff.