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Teaching in the World of Virtual K–12 Learning

Challenges to Ensure Educator Quality

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A final report prepared for Educational Testing Service

by

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Introduction

This report presents the results of a six-month research project examining virtual K–12 teaching and learning. It was first necessary to understand the current state of K–12 virtual education across the country: various contexts and dimensions of online learning, various categories and models of online delivery systems and recent and projected trends in online learning. From there, one can begin to examine how teaching in an online environment differs from "traditional" or "brick-and-mortar" classrooms, what key skills or knowledge are needed for effective online teaching and if and how higher education is preparing teachers for the new world of virtual K–12 learning. Next came an in-depth examination of what was going on in the states: what states have significant virtual K–12 learning initiatives? What specific requirements do states have to ensure the quality of their online teaching force? How many full- and part-time online teachers are there? What interest do states have in pursuing endorsements specific to online teachers and/or an assessment of online teaching competencies?

The results of this study do not produce simple answers, as the world of virtual K–12 education has been described by several individuals as the "wild, wild west;" that is, a largely unregulated, fluid and rapidly changing environment influenced by factors beyond the current jurisdiction of many state departments of education. Nonetheless, as this report will show, there is a growing recognition on the part of many state agency personnel that, while policies often lag behind practice, the issue of teacher quality remains critically important, and attention is gradually shifting to focus on such a critical matter.

Methodology of Study

This study began with a review of the literature on online teaching and learning, as well as a review of recent policy documents from organizations including the International Association for K–12 Online Learning (iNACOL), the Southern Regional Education Board (SREB), the International Society of Technology Education (ISTE), the National Education Association (NEA), the Sloan Consortium, Evergreen Consulting Group, the Digital Learning Council, the Alliance for Excellent Education and the National Commission for Teaching and America's Future (NCTAF). Telephone interviews were conducted and correspondence exchanged with representatives of national organizations (e.g., SREB, iNACOL, NEA, Education Development Center [EDC], Evergreen Consulting Group, CUE, Inc.), higher education personnel (Capella University, University of Phoenix, Idaho State University, Wayne State University, Iowa State University) and teachers and administrators at several state virtual schools (e.g., Florida Virtual School, North Carolina State Virtual School, Virtual Virginia, Connecticut Distance Learning Consortium). In addition, representatives from 31 state agencies were contacted to discuss their states' virtual K–12 programs, teacher policies and potential interest in endorsements, content-area tests or other means to assure the quality of their online teaching staff. The results of this research are summarized in the sections that follow.

Part A: Overview of the Virtual K–12 Educational Landscape

No one really knows exactly how many students are enrolled part-time or full-time in online K–12 learning situations. The difficulty in data collection can be attributed to the significant growth in the number of public, private and for-profit providers of online services, many of which operate outside the traditional school district structure (Picciano and Seaman 2007). These can include school districts outside a state that provide online learning courses to students within a particular state; charter schools within or outside a district; state-supported virtual schools within or outside a state; state technology-service agencies; colleges and universities; a consortium of agencies; private, for-profit entities offering supplemental courses; and private, for-profit virtual schools. Homeschooled students frequently use online service providers for a portion of their course work, with no need to report to an educational agency (Picciano and Seaman 2009). In addition, data on single-district online learning programs are also very limited. Surveys are often used to collect data, and only some districts choose to respond; therefore, results must be extrapolated, and there may be unintended bias in the interpretation. In addition, case studies and anecdotes that highlight the most successful online programs may suggest that K–12 learning is more prevalent than it is. That said, Figure 1 on the following page illustrates some of the most frequently cited and credible figures that provide a sense of the scope of online learning for K–12 students.

Figure 1: The Scope of Online Learning for K–12 Students

As of the end of 2010:

Forty-eight of 50 states, plus Washington, D.C., provided supplemental or full-time online learning opportunities to at least some students.

Thirty-nine states had state virtual schools or state-led online initiatives.

Twenty-seven states, plus Washington, D.C., had full-time online schools serving students statewide.

Twenty states provided supplemental and full-time online learning options statewide.

State virtual-school enrollment grew 40 percent between 2008–09 and 2009–10, to 450,000 course enrollments, but most of that growth occurred in two states (Florida and North Carolina).

The percent of students in full-time online schools varied from 2.79 percent in Arizona to .09 percent in Texas (the average was 1 percent).

Fifty percent of districts had at least one student taking an online course.

The overall estimate of K–12 students enrolled full-time or part-time was four percent.

Over 1.5 million K–12 students were engaged in online or blended learning for the 2009–10 school year.

Sources: iNACOL (2010), Watson et al. (2010)

As impressive as the last figure appears (over 1.5 million K–12 students engaged in online or blended learning), it should be noted that this represents only about three percent of the nearly 50 million K–12 public school students. However, as noted in subsequent sections of this report, significant growth in online course enrollment is forecast in the future.

Categories, Models and Providers of Online Learning Delivery Systems

In order to understand the context in which teaching occurs in online learning environments, it is important to understand the vast array of contexts in which online learning occurs. Online instruction may be supplemental or full-time, within or across multiple school districts or states or even internationally. Instruction may be delivered synchronously or asynchronously,[1] and the

[1] Most delivery systems are asynchronous: students and teachers work at different times and have limited real-time interaction with one another.

type of instruction may range from fully online to fully face-to-face. The five main categories of online programs are described below[2]:

1. *State virtual schools:* These state-led initiatives currently exist in 39 states. They are generally run by state agencies and funded through legislative appropriation, which is sometimes supplemented by fees. Most provide supplemental courses to middle and high school students who are otherwise enrolled in another school part-time. States with significant enrollment or growth in state virtual schools during 2009–10 included Alabama, Florida, Idaho, Louisiana, Michigan, North Carolina and South Carolina. States whose virtual schools experienced flat or declining enrollments during that period included Idaho, Missouri, Arkansas, Illinois and Maryland. Florida has by far the largest state virtual school, with more than 220,000 course enrollments.
2. *Multi-district online schools:* These are frequently organized as charter schools covering grade levels K–12. Many are affiliated with educational management organizations (EMOs), such as K12, Connections Academy, Advanced Academics and Insight Schools. Public education funds generally follow the student but can be supplemented through appropriations, grants and fees. These are mostly full-time programs, and most schools are subject to the same accountability as public or charter schools within the state. Students in EMOs constitute perhaps 75 percent of total enrollment in full-time online schools, although not all EMOs make their enrollment figures available.
3. *Single-district programs:* These programs are run by a district and generally serve students within the district, although some districts allow students from other districts to enroll. Online courses may be provided by private vendors, full-time online schools, state virtual schools or by the districts themselves. Courses are generally supplemental and often combine online and face-to-face components in blended courses or programs. Data on enrollments are very limited, but anecdotal evidence suggests that district-level programs are a source of future growth in online learning.

[2] Most of the information in this next section is from the report *Keeping Pace with K–12 Online Learning* (Watson et al. 2010).

4. *Consortium programs:* These are essentially hybrid programs that may be run by a group of school districts, a nonprofit or another intermediate education agency. Examples include the Virtual High School Global Consortium (which operates internationally), the Wisconsin eSchool Network, the Alaska Virtual Learning Network and the Texas Virtual School Network.
5. *Post-secondary programs:* These programs are usually run by a university or college and provide mostly high school or credit-recovery courses. Some are full-time, and others are supplemental or both. Funding is generally through course fees. Examples are the University of Nebraska Independent Study High School and Brigham Young University — Independent Study.

Because of the wide array of online learning delivery systems and the difficulty in collecting data on K–12 learning activity at the local level, identifying the states with the most significant online programs can be challenging. In an attempt to graphically convey the array and concentration of significant online learning activities across the country, Figure 2 on the next page highlights in yellow the states that have one or more of the following features:

State virtual schools (SVS) with more than 5,000 course enrollments (ce);

Multi-district full-time online schools (MDFT) with more than 5,000 full-time student enrollments (ft);

Single-district programs (SD) that are considered "established" with more than 4,000 course enrollments or which are highest on a per-student basis; and

Consortium programs (CP) that are also considered "established" and not classified as state virtual schools.

Figure 2

Source of data in graphic: Watson et al. (2010) *Keeping Pace with K–12 Online Learning*. Evergreen Education Group.

The Rise of Blended Learning and Its Implications

As noted in the preceding section, the type of instruction delivered in various online delivery models can vary from fully online instruction (characteristic of most supplemental courses provided by state virtual schools) to face-to-face instruction, in which the teacher still delivers most of the instruction. "Blended" instruction is often seen as the best of both possible worlds, as concerns over quality of course work, student readiness and teacher quality can be allayed when "there is also a 'flesh and bones' teacher available to assist and guide students in their studies" (Picciano and Seaman 2009, 26). An important distinction exists between the terminology of "online" versus "blended" learning. Blended learning has no single meaning. Horn and Staker (2011) define it as "any time a student learns, at least in part, at a supervised brick-and-mortar location away from home and, at least in part, through online delivery with some element of student control over time, place, path and/or pace" (p. 3). Horn and Staker's taxonomy of blended learning models is shown below.

Figure 3: Blended Learning Models

Face-to-Face Driver: Teachers deliver most of their curricula, with online learning deployed on a case-by-case basis to supplement or remediate.

Rotation: Students rotate on a fixed schedule between learning online in a self-paced environment and sitting in a classroom with a teacher.

Flex: Online platforms deliver most of the curricula; teachers offer online support on an as-needed basis, using in-person tutoring and small-group sessions (common for credit/dropout recovery programs).

Online Lab: An online platform delivers the entire course, but in a brick-and-mortar lab environment; online teachers work with paraprofessionals who supervise students.

Self-Blend: Students take one or more courses online to supplement traditional school course offerings (this is the most common version for state virtual schools and all online schools with à la carte courses).

Online Driver: An online platform and teacher deliver all curricula, with students working remotely for the most part. Face-to-face check-ins are sometimes required, and extracurricular activities are offered in a brick-and-mortar setting.

Source: Horn and Staker (2011)

Because "blended learning" means so many different things to different organizations and people, Staker released a report in May 2011 that seeks to clear up some of the confusion by providing case studies of 48 different blended-learning programs, illustrating the various models described in Figure 3. A sample of eight online schools with five different examples of blended learning school models is included in Appendix A.

Proponents of blended learning point out its many potential benefits, including promoting personalized instruction to allow students to work at their own pace and changing methods of instruction to enable teachers to work one-on-one with each student. The regular school day and year can be expanded because instruction can take place outside the traditional classroom. Blended learning can provide a model for school turnaround, by providing a customizable and individualized curriculum. Further, it can promote competency-based learning that allows student funding and advancement to be decoupled from seat time (Picciano and Seaman 2009). According to the Education Commission of the States (ECS), 36 states have introduced state-level policies supporting "proficiency-based credit," but those requirements vary widely (ECS 2011).

Staker's report on blended learning models incorporates the policy guidelines promoted by the Digital Learning Council, founded by former governors Jeb Bush and Bob Wise, to provide a policy framework for states to use digital learning to transform the American education system. The report, *Digital Learning Now!*, which was released on December 1, 2010, provides a series of recommendations. These include lifting caps on class-size ratios, enrollment and budgets for online and blended learning environments; not limiting the number of credits students can earn online or provider options for delivering instruction; and adopting competency-based standards for matriculation instead of seat time. Students should have equal access to all providers — public, chartered and private (Foundation for Excellence in Education 2010). This last recommendation has generated some controversy. In a recent *Education Week* article, Gene V. Glass of the National Education Policy Center at the University of Colorado at Boulder, was quoted as saying, "If the policy recommendations in [the report] were taken seriously … half a dozen large private companies like K12 Inc. would have a clear path toward hundreds of dollars of public education funding. … The 'blend' we see lobbied here is a blend of public monies and private profit-seeking" (Ash 2011).

Projections for the Future of Online Learning

Christensen, Horn and Johnson (2008), in their book *Disrupting Class: How Disruptive Innovation Will Change the Way the World Learns*, predict that half of all high school classes will be online by 2019. Factors that could drive such a trend include the growing commercial market in virtual schooling, bleak budgets at the state and local levels, looming teacher shortages and pressures to both expand learning opportunities for students as well as improve student graduation rates and reduce dropout rates. As Picciano and Seaman (2009) note, "In [rural school districts], online learning is not simply an attractive alternative to face-to-face instruction but increasingly is becoming a lifeline to basic quality education."

There is no question that there are large commercial interests (both nonprofit and profit-making) that have identified a huge potential market in virtual schooling, of which one component is schools run by educational management organizations (EMOs). All online programs have content, software or hardware that has been provided by private suppliers. Many companies and organizations offer learning delivery and management systems (including student information systems, Web conferencing and other technology tools); serve as content providers (some also provide instruction); and provide professional development to educators. Further, if online learning becomes more synonymous with mobile learning (defined as "the act of accessing of curriculum and instruction via devices that travel with students to a variety of locations beyond the school building" [Watson et al. 2010]), another industry is emerging in the development of tools such as netbooks and iPad®s; discrete "learning objects" such as tutorials, practice activities and skill-builders; and podcasts, educator apps and other mobile tools developed by companies such as Apex Learning and Blackboard.

In addition to mobile learning and blended learning, growth in online learning is being fueled by increases in the numbers of district online programs (Wicks 2010). One reason is that the role of state virtual schools is changing. Initially, state virtual schools served a critical role in building online learning expertise and providing leadership around online learning issues. In the last couple of years, however, some states have reduced funding for their state virtual schools or eliminated them altogether (e.g., Tennessee, Maryland, Mississippi and Oklahoma). Shortfalls in state budgets will likely lead to increased online learning activity moving from state virtual schools to the district level (Watson et al. 2010). This trend is further encouraged by states

responding to the Race to the Top federal grant competition by either passing new charter school laws or lifting caps on existing charters, as well as introducing virtual charter school legislation. Some states, such as Alabama, Kentucky, Virginia and West Virginia, do not yet have charter school laws and also have minimal district-level online activity. State virtual schools are the predominant online delivery system, and enrollment has grown over the last two years. Other states, such as Georgia and North Carolina (which has the second largest state virtual school after Florida Virtual School), recently lifted their caps on charter schools; it is uncertain how this will affect the future of the state virtual schools.[3] Appendix B provides a summary of selected data from the 2010 SREB Report of State Virtual schools, including numbers of students, course enrollments (including change from the previous year) and staffing.

Shrinking budgets are also a major impetus toward promoting online learning. States are turning to virtual learning and digital textbooks as a way to save money. For example, a state budget task force in Georgia claimed that the state could save more than $4.5 million if one percent of its students enrolled in two online courses (Alliance for Excellent Education 2010). Other states, such as Michigan, Alabama and North Dakota, have adopted policies that require students to take at least one online course in order to graduate (Watson et al. 2010). Idaho's "Students Come First" legislation, passed in the spring of 2011, promotes the use of technology to both save money and increase educational opportunities for students. It requires that students take a minimum of two online courses over the course of their high school career, and the state hopes to encourage students to take courses providing dual credit.[4] This proposal, however, has proven controversial because of its provisions to shift funding from teacher and administrator salaries to technology investments. The strong focus on online learning generated fears that teacher jobs would be cut, resulting in a recall effort to remove the state superintendent, Tom Luna. The effort failed, but the recently passed legislation will be subject to a voter referendum in the fall (Russell 2011).

The jury is still out on whether online learning saves money. Limited data exist comparing the costs of online, blended and face-to-face instruction. There are potential cost savings in physical infrastructure, as blended learning can reduce the amount of space required

[3] Sources for data in this section include conversations with state agency representatives, as well as state profiles from *Keeping Pace* (Watson et al. 2010).
[4] Source: telephone conversation with Christina Linder, Idaho Department of Education, July 6, 2011.

to serve a larger number of students. Examples include Albuquerque's eCADEMY, which provides students with 80 percent online and 20 percent on-site instruction, and whose building cost one-seventh as much as a new school building serving half the number of students entirely on-site (Watson 2010). Staker (2011) further explains that "[t]he school realizes efficiencies in its use of real estate, as it can serve two cohorts of students at one time. It also saves in personnel costs, particularly administrative costs, because K12, Inc., manages much of the administrative burden of the school" (p. 96). Carpe Diem Collegiate High School and Middle School in Yuma, Arizona, cites savings in labor costs because only six certified full-time teachers (plus various support staff) serve 273 students. The school's newest building has only five traditional classrooms, half as many as would normally be needed, and the capital expenditure per pupil is less than half that of a traditional school building in the same neighborhood (Staker 2011). Florida Virtual School cites a cost of $5,182.85 per full-time (FTE) student, representing a $2,518.06 savings (33 percent per FTE student) to the state of Florida compared to the district-wide average funding of $7,700.90 per FTE student (Florida Virtual School 2010). Glass (2009) points out that the cost of providing virtual education at the K–12 level differs substantially from place to place, but that virtual educators say that costs are comparable to those of traditional schools. "Establishing a fair price for virtual schooling will be crucial as the nation attempts to close the slowly shrinking 'digital divide.' If virtual education is unfairly priced to the benefit of private, corporate providers, the gap in access between rich and poor schools will only be exacerbated" (p. 3).

There are other factors that may inhibit significant growth in enrollment in online courses and schools. Online learning may not be suited for some students' learning styles or needs. Some barriers are institutional, such as a school not having the technological infrastructure or ability to offer online classes. Students in some rural areas still do not have access to broadband Internet either in their schools or homes (a challenge cited by states such as Maryland, West Virginia, Virginia and Kentucky in the 2010 SREB State Virtual School Survey). Lack of qualified IT staff is also cited as a challenge in states like Louisiana and Florida. Project Tomorrow, which facilitates the Speak Up National Research Project to track student demand for online learning, noted that students are seeking out online classes to increase their productivity as learners and customize the learning process to meet their own needs (e.g., they are earning college credits,

taking a class not offered at their school, learning on their own schedule or satisfying graduation requirements). Thirty-eight percent of high school students and 33 percent of middle school students said they would be interested in doing so. However, only 10 percent of teachers are tapping into online classes to enhance student achievement, and only three percent have reported teaching an online class, although 26 percent say they are interested in teaching online. Furthermore, although 52 percent of aspiring teachers have experience with online classes and online professional learning communities, only four percent report they are learning how to teach online classes in their instructional methods courses (Project Tomorrow 2010).

It should also be pointed out that while many programs and schools claim significant savings from online schools, there remain concerns about the quality of online learning and whether there exists real accountability, which includes the means to identify and end ineffective practices and programs. Dillon and Tucker (2011) observe that "without rigorous oversight, a thousand flowers blooming will also yield a lot of weeds." Research in K–12 online education has been very limited. A meta-analysis and review of online learning studies by the U.S. Department of Education concluded that students in online learning conditions performed modestly better than those receiving face-to-face instruction. However, students in blended learning conditions often are provided with additional learning time and instructional elements not received by students in face-to-face situations. The study further points out that there are only a small number of rigorous published studies of K–12 students, so caution is needed in generalizing the results of this meta-analysis (USED 2010).

In summary, the world of virtual K–12 learning is undergoing rapid growth and changes. Advocates believe that virtual learning has the power to transform an obsolete K–12 system of schooling by providing the means to personalize learning, ensure all students have access to quality teaching and extend learning to all hours of the day and days of the week — and do so in a cost-effective manner. Critics contend that adequate safeguards on quality are lacking, and there need to be incentives for virtual programs to provide high-quality outcomes first and secondarily to do so at a lower cost (Staker 2011). Critical to ensuring quality instruction is ensuring the availability of high-quality teachers skilled in online pedagogy. The next section of this paper will address teaching in a virtual K–12 environment.

Part B: The Challenges and Promises of Online Teaching

Willingness, preparedness and qualifications of the teaching force to teach in online environments, along with appropriate state-level online teacher policies, are crucial factors in determining whether virtual education can fulfill its potential to "transform teaching and learning by redesigning traditional classroom approaches, personalizing instruction and enhancing the quality of learning experiences" (Patrick and Powell 2009). In the next section of this report, attention will be turned to what research and interviews with teachers, higher education faculty and policy makers tell us about the teaching competencies that differentiate online instruction from "traditional" teaching, how teachers are being prepared to teach in online environments and what states are doing or planning to do to ensure online teachers have the necessary qualifications and skills to be effective.

The Current State of Online Teaching Competencies and Standards

Ferdig et al. (2009) confirms what a search of the literature reveals: there is a relative dearth of research into best practices in K–12 virtual schooling. The field lacks a strong body of research knowledge that examines the elements of pedagogy and practice used by successful virtual educators. That said, over the past five years, a number of organizations have released online teaching competencies and standards, as listed in Figure 4 below.

Figure 4: Online Teaching Competencies and Standards

International Standards
UNESCO: *ICT Competency Standards for Teachers* (2008)

National Standards
International Society for Technology in Education [ISTE] *National Education Standards for Teachers* (2008)

International Association for K–12 Online Learning (iNACOL): *National Standards for Quality Online Teaching* (updated August 2010)

Southern Regional Education Board (SREB): *Standards for Quality Online Teaching* (2006)

National Education Association (NEA): *Guide to Teaching Online Courses* (no date)

State Standards
Idaho State Board of Education: *Idaho Standards for Online Teachers* (2010)

iNACOL endorsed the *SREB Standards for Quality Online Teaching* and *Online Teaching Evaluation for State Virtual Schools* and subsequently adopted those standards with minor changes, including two additional standards from the Ohio Department of Education's *Ohio Standards for the Teaching Profession* and the Electronic Classroom of Tomorrow's *Teacher Evaluation Rubric* (iNACOL 2010). Although the iNACOL standards were updated in August 2010, a committee convened during the summer of 2011 to once again review and refresh the standards "because the tools and learning environments constantly change." The revised standards will be unveiled at the November 2011 iNACOL national conference.[5]

iNACOL teaching standards have been very influential at the state level. All of the states that responded to the 2010 State Virtual Survey reported that they had adopted or tailored the iNACOL *Standards for Quality Online Teaching* in their state virtual schools. Numerous states have either codified the iNACOL teaching standards into the course work required for an endorsement or the professional development required for teaching online courses (for example, South Carolina[6] and Wisconsin[7]).

It is important to note, however, that none of these standards has been formally validated. Smith (2009) conducted a small-scale study of 49 teachers in four virtual schools who reviewed the NEA and SREB standards. The questions posed were similar to those in a job analysis survey — i.e., rating of importance of specified teaching standards to practice, frequency of use of specific knowledge and skills and importance of knowledge and skills. The data revealed concerns about the language of the standards, their failure to acknowledge how the roles of individual online teachers vary (depending upon school and course model), perceived omissions in the standards and a lack of differentiation between online and face-to-face teachers. The study was too small for the results to be considered valid; however, the data suggest that further studies are needed to evaluate the comprehensiveness and robustness of these standards.

[5] Source: correspondence/conversations with Alison Powell, iNACOL and Barbara Treacy, EDC.
[6] Source: conversation with Bradley Mitchell, South Carolina DOE, Office of eLearning.
[7] Source: Wisconsin Department of Public Instruction. Guidance on the 30 Hours of Professional Development for Teaching Online Courses. Accessed March 2011, http://dpi.wi.gov/imt/pdf/online_course_pd.pdf.

What Differentiates Online Teaching from "Traditional" Teaching?

Two approaches have been taken to answer this question. The first is to compare the current iNACOL standards to the recently released InTASC teaching standards to identify those standards that are not common; the second is to ask online educators, higher education personnel and individuals from national organizations that train online educators for their perceptions, based on practice. Appendix C lists the 2010 iNACOL standards as of the August 2010 update; Appendix D lists the updated InTASC performance standards noted in the reference chart of key crosscutting themes related to technology.[8] General observations from comparing these two lists of standards indicate that the following areas are not specifically addressed in the InTASC standards:

> Standard B — technology skills: teachers' use of specific technologies, such as word-processing, spreadsheets, presentation software, Internet browsers, email applications and synchronous and asynchronous tools. In addition, teachers must be able to troubleshoot software and hardware problems.
>
> Standard F — teacher experience of online learning from the perspective of the student.
>
> Standard M — instructional design: ability to modify and add content using online learning management systems; incorporation of multimedia and visual resources into an online module.

An examination of the 2010 iNACOL teaching standards suggests that they are largely consistent with good instructional practice, even if that instruction takes place in a virtual environment. However, teaching in a virtual environment is not the same as in a face-to-face environment. Treacy (2007) describes four major differences:

> The online curriculum is different from the face-to-face curriculum — because students are expected to read and explore activities on their own, online instructors must provide clear expectations for student participation, products and pacing. They must be prepared to support learners with varied reading levels and learning needs and identify supplemental resources for their curriculum. Clear written communication skills are critical.

[8] A more formal crosswalk between the InTASC and iNACOL teaching standards was not conducted, as the iNACOL standards are currently being "refreshed" and will not be available until November 2011.

> The social dynamics are different: the focal point of the online classroom is online discussion. Teachers need skills in writing discussion prompts and responding to specific challenges they face in facilitating online discussions. They also need to manage their time, as 24/7 access can be daunting to new online instructors.
>
> There are differences in assessment strategies: course management systems systematically collect student participation data. Online instructors need to implement just-in-time and individualized assessments and project-based learning.
>
> Technical challenges may interrupt the online classroom: the instructor needs to be comfortable with technology and able to respond to basic technical problems with patience.

SREB (2009) further elaborates that, "In a traditional class, the teacher combines instructional and content knowledge to determine which instructional strategies, activities and assessments to use. Technology is rarely the primary means of communication. In online instruction, the teacher must combine instructional and content knowledge with technology and rely on technology as the means of communication" (p. 2).

These differences should debunk what Davis and Rose (2007) term two of the common myths and misconceptions about virtual schooling and online teaching — specifically, that any highly qualified face-to-face teacher is ready to teach a quality online course that has been previously prepared or purchased, and that newly qualified teachers who learn about virtual schooling in their pre-service programs will be ready to teach online when they graduate. The *NEA Policy Statement on Distance Education* further elaborates:

> Although licensure in the subject matter being taught is a necessary condition for any teacher, it is not a sufficient condition for a teacher involved in distance education. Teachers who provide distance education should in addition be skilled in learning theories, technologies and teaching pedagogies appropriate for the online environment. Moreover, because of the rapidly changing technology, these skills should be continuously updated through professional development.

Interviews[9] conducted with numerous online educators affirm that there are specific pedagogical strategies associated with virtual K–12 learning. There was general consensus that the main differences between online teaching and "traditional" teaching are as follows:

There is a shift from the teacher delivering knowledge to **guiding and individualizing learning**.

Teachers must be comfortable and competent utilizing **online instructional materials/course ware**, including digital textbooks, audio and visual presentations and other course content, as well as **learning management systems** that provide communication and instructional tools and assessment features and data.

Teachers must maintain a **high and effective degree of communication** with students and ensure consistent interaction between teacher and student as well as between teacher and parents.

Anecdotal comments from virtual K–12 educators as well as higher education faculty interviewed for this report were both revealing and consistent:

"Online or blended learning is so different and subject to so many variables, including settings, student interactions, student pairing models."

"Online teaching is good teaching. The difference is how to teach more effectively in an online environment. The tools and medium are constantly changing and becoming easier to use."

"Online learning provides the capability for more effective monitoring and supervision of teaching and learning."

"Written communication and assessment feedback are critical."

"Everyone in an online classroom is equally present — no one gets lost."

"Student behavioral issues are not a problem; instead instructionally based issues present the challenges."

[9] See the Acknowledgement section for a list of virtual school teachers, administrators and higher education faculty interviewed for this report.

The core issues for online teachers relate to building a learning community in a virtual environment and keeping participants engaged — that is, knowing how to pose discussion questions and how to get students to reflect about their learning. Teachers must establish clear expectations for student participation, products and pacing. One former state virtual school director succinctly stated that online teachers need to be "hyper communicators," capable of engaging students at a distance, as well as be "hyper organized." In addition, there are certain skills that depend upon the content area. Social studies and English language arts online teachers need the ability to facilitate discussions among and between students in an asynchronous environment. Online math teachers need to be able to deliver quality live sessions of 90 minutes or so to help students struggling with math concepts. This individual also noted that some of the teachers who performed best in online environments were previously alternative school teachers.

The competencies outlined above primarily refer to teachers who are "truly at a distance" and central to instruction (such as teachers in state virtual schools and full-time virtual schools run by educational management organizations). There is a need to distinguish those teachers and the skills and competencies they need from teachers in blended learning settings that are more prevalent at the district level. In some of those settings, there is a team approach to teaching, with teachers working with facilitators and teaching assistants, and class-size ratios can approach as much as one teacher to 400 students.[10] As noted in Staker's 2011 report, the variety of settings and the teacher's role in blended environments varies greatly. Online learning can range from self-paced learning (with little teacher interaction) to fully facilitated interactive instruction. There is a need for more research to determine what impact varying degrees of proximity versus remoteness and offline versus online instruction have on teachers' roles and competencies.

[10] Source: interview with Chris Rapp, Evergreen Consulting.

The Current Status of Online Teacher Education and Professional Development

In December 2009, over one hundred leaders from a cross section of teacher education constituency groups convened at an invitational summit on "Redefining Teacher Education for Digital-Age Learners" at the University of Texas at Austin. Their charge was to initiate a national dialogue on how to develop educators with the needed skills to enable their students to be successful in serving what will be the most digitally savvy, socially networked generation in history. The summary report stated that, "It is necessary to transform schools of education into 21st century learning organizations staffed by teacher educators who themselves manifest the characteristics of 21st century teachers" (Resta and Carroll 2010, p. 4). This includes preparing teachers to teach in online and blended learning environments. Educator development must model technology-supported learning communities of peers, faculty and mentor teachers through teachers' pre-service academic and clinical experiences, and faculty must model digital-age teaching and learning (Resta and Carroll 2010).

The summit's call for the reinvention of teacher education is sorely needed. In the *Going Virtual! Research Series,* which reports the results of a survey of online teachers to identify their professional development needs, only 30 percent of respondents report having received any professional development at the university level. Only 12 percent of brand-new online teachers reported receiving college or university training (Dawley, Rice and Hinck 2010). As noted earlier in this report, only four percent of aspiring teachers reported in the Project Tomorrow survey that they were learning how to teach online classes in their instructional methods courses (Project Tomorrow 2010). As part of this research, faculty and officials at three national online institutions of higher education that offer undergraduate teacher preparation programs (University of Phoenix, Capella and Walden) were contacted to determine whether they prepare their undergraduates (who themselves are taking their course work online) to teach in an online K–12 environment. All reported that, other than as part of an undergraduate educational technology course, any courses addressing teaching online are available only at the graduate or certificate level. Capella partnered briefly with Florida Virtual School (FLVS) beginning in 2003 to develop courses for P–12 online teaching leading to a master's degree. This program, although not widely used, is still in existence. The University of Central Florida and University of South Florida currently partner with FLVS to provide virtual student teaching and internships, and

FLVS staff participate in introductory teacher-preparation classes by providing information about teaching online. FLVS staff commented that graduate-level programs tend to focus too much on course development and design skills as well as applications of technologies — many of which become obsolete rapidly — rather than in online pedagogy.

There are abundant higher education institutions that provide graduate-level certification programs in online teaching and learning. A few illustrative examples are as follows:

California State University, Hayward: Certificate in Online Teaching and Learning; MS in Education with an Option in Online Teaching and Learning

Valdosta (Georgia) University: Online Teaching Certificate; Online Teaching Endorsement

Northeastern University (Massachusetts): Distance Learning

University of Nebraska at Kearney: MA in Education, Online Curriculum and Instruction; Post-baccalaureate Online Teaching Certificate

Arizona State University: Graduate Certificate Program

Michigan Virtual University: Online Instructor Program

University of Wisconsin–Madison: Distance Education Certificate Program

Boise State University: Graduate Certificate in Online Teaching with a focus at the K–12 level

One of the few comprehensive initiatives to address virtual K–12 teacher preparation education at the undergraduate level was the Teacher Education Goes into Virtual Schooling (TEGIVS) project. This three-year, federally funded project was designed to integrate a comprehensive virtual school curriculum into four diverse programs of pre-service teacher education for the first time. The higher education institutions involved included a land-grant university (Iowa State University); a large, public, southern university (University of Florida); a highly selective eastern university (University of Virginia); and a liberal arts college (Graceland University), along with several Midwest campuses including a virtual campus. Although the grant ended in 2008, some of the work was sustained in undergraduate and graduate course work, certificate programs and partnerships with virtual schools at the University of Florida, Boise State University, Plymouth State, Wayne State and Iowa State University (Barbour and Unger 2009; Davis and Rose 2007). Another initiative to introduce virtual K–12 education into pre-service teacher training is occurring in Colorado. Recently, the deans of several Colorado colleges and universities met

with the Colorado Department of Education to seek approval for a provision that up to 300 of the 800 hours of required field experiences for aspiring teacher candidates be allowed to be done in a virtual environment.[11]

The initiatives noted above remain, unfortunately, the exception, and impact only small numbers of educators. As a consequence, a large business has developed around the provision of professional development to online educators. Major players include national organizations such as iNACOL, SREB, ISTE, EDC and NEA; for-profit companies such as Blackboard, Pearson, Kaplan, Insight Schools, Connections, K12; and online learning providers such as state virtual schools (of which some of the most comprehensive programs are offered by FLVS, ACCESS Distance Learning [Alabama], North Carolina Virtual School, Virtual High School Global Consortium and Michigan Virtual University). Online teaching-competency checklists are offered by several organizations as mechanisms to help online teachers and their administrators identify professional development needs. Examples include the SREB *Online Teaching Evaluation for State Virtual Schools* (2006), iNACOL *National Standards for Quality Online Teaching* (2010) and the NEA *Guide to Teaching Online High School Courses* (n.d.). The problem, however, is that most existing teacher assessment tools for online educators are limited to the evaluation of a teacher's technical abilities, skills and self-efficacy. Because of the dearth of research into best practices in K–12 virtual schools and what practices make teachers effective in online environments, the field lacks a strong body of knowledge that identifies the elements of successful pedagogy and practice used by successful virtual educators (Black, Ferdig and DiPetro 2008). Currently, there are few statewide, national or international endorsements for K–12 educators. Until there is an adequate research base around what constitutes best practices in virtual school instruction, a strong foundation and justification for establishing state endorsements will be lacking (Ferdig et al. 2009). The next section of this paper will examine recommendations for state educator certification policies from several national organizations, as well as states' current policies for online educators.

[11] Source: interview with Dr. Jamie Goetz, Colorado Department of Education.

Part C: State-Level Policies for Online Educators

As online K–12 education has become viewed in many policy circles as a potential solution to teacher shortages, budget shortfalls, achievement gaps and the challenge of preparing students for a global world, a number of policy groups are calling for states to implement specific policies for online teachers. The NEA calls for a teaching license in the subject area being taught and proposes that states do not restrict that license to the state in which the teacher delivers the instruction, in recognition of the multistate use of distance education (NEA 2011). Further, the NEA recommends that teacher licensure bodies include the ability to instruct online as part of the evaluation of those seeking to enter the teaching profession (NEA, *Guide to Teaching Online Courses*). The summary report of the Invitational Summit on Redefining Teacher Education for Digital-Age Learners reinforces the idea that state educator certification policies must support new roles for educators and new ways of staffing schools — that is, teachers who facilitate learning rather than simply delivering educational content. Bodies that approve teacher preparation programs must foster transformation to digital-age educator development and require evidence that teachers have the knowledge and skills to teach in both online and blended learning environments. Further, common national competency standards need to be established for digital-age teachers as a means to help ensure state-to-state reciprocity (Resta and Carroll 2010). The Digital Learning Council in its *Digital Learning Now!* report makes a series of recommendations for online teachers, such as that states should provide alternative teacher certification routes, including online instruction and performance-based certification, and allow for certification reciprocity or permit online teachers to be certified in another state (Foundation for Excellence in Education 2010). The State Educational Technology Directors' Association (SETDA) has also recommended that states recognize teacher licenses and certifications from other states and has noted that some members of the educational community are discussing the possibility of a national certification for virtual teachers (SETDA 2008). A teaching endorsement can serve as an indicator of completion of initial training in theoretical, technical and

pedagogical foundations, as well as in the legal and ethical issues related to online courses. The endorsement potentially indicates that a teacher has skills in curriculum and basic media design for online learning, as well as understanding of technical issues such as online management systems and use of asynchronous or synchronous features. Debuel (2008) cites the lack of national acceptance of a state certificate as the barrier to an endorsement in online teaching. Present certification programs in online learning vary significantly, so the certificate generally carries less weight than when it is tied to a specific degree. There are also practical impediments to educators voluntarily seeking certificates or endorsements. The time required for rigorous training is often more than what some educators are willing to expend. Further, there is a disincentive to take training in one institution if that training must be repeated in order to teach in another online program (Debuel 2008).

What States Are Currently Doing

With rare exceptions, almost all states require virtual instructors to be state-certified, with a handful of states permitting teachers to be certified in another state (e.g., Michigan, Nevada, North Carolina, Montana and West Virginia) (Watson et al. 2010; Center for Digital Education 2009). Some states, such as Alabama, allow university faculty to serve as online teachers. At least 22 states require teachers to have completed appropriate training to teach online, and five states do not require any specific training (Bush 2009).

Appendix D provides a synopsis of telephone interviews and correspondence with representatives of 31 state agencies to collect data on their states' virtual K–12 education programs, policies for ensuring the quality of online teaching staff and interest in certification endorsements and/or a content-area test for online educators. Highlights of this research are summarized below.

Currently, six states have adopted online teaching endorsements: Georgia, Idaho, Louisiana, Michigan, South Carolina and Utah. All are currently voluntary. This suggests that these endorsements may be considered more as desirable portfolio-builders rather than required credentials (Quillan and Davis 2010). The requirements for these endorsements vary considerably as shown on the next page.

Figure 5: States with Online Teaching Endorsements

Georgia: The Online Teaching Endorsement Program became effective in 2006. This is optional and requires the teacher to have a level 4 or higher professional teaching certificate. All programs providing the endorsement must meet Georgia's standards for approval of Professional Education Units and Educator Preparation Programs. Endorsements usually consist of three to four courses, equivalent to three semester hours each, provided by IHEs, school systems or regional educational service agencies with a GaPSC-approved professional education unit.

Idaho: Legislation passed in 2011. Requirements include an eight-week online teaching internship and completion of a state-approved program of at least twenty semester credit hours of study in online teaching and learning at an accredited college or university or a state-approved equivalent. There are also provisions for demonstrating competency in the Idaho Standards for Online Teaching, which were approved in 2010.

Louisiana: Requires at least three years of teaching experience or equivalent out-of-state teaching certificate to type B or level 2; completion of an online course or combination of online courses covering best practices in teaching online courses, including facilitation skills, strategies for assessing learning, use of online tools, asynchronous discussion, online course-authoring tools and ethical and legal issues related to use of online resources; and completion of an online teaching internship or successfully serving as an instructor/facilitator of an online course of at least six weeks in length.

Michigan: Has an optional Educational Technology (NP) endorsement that became effective in 2008, the requirements of which were strengthened to include expectation of the knowledge and skills related to online teaching and learning — e.g., Online Technology Experience and Skills, Online Course Design and Online Course Delivery. This endorsement is often obtained in connection with a Master's Degree in Educational Technology.

South Carolina: Optional online teaching endorsement based on iNACOL standards and available through the University of Charleston (six semester hours in required courses and two semester courses in elective courses). Course work may be waived and a certificate in Online Teaching granted for those teachers who have successfully taught three online courses through an accredited institution or professional development program within three years of application. State requirements also refer to meeting a "minimum qualifying score(s) on a content-area examination(s) required by the State Board of Education." Currently, only about six state virtual school teachers (one-half of the total) have sought this endorsement; there is some limited interest from one charter school.

Utah: This Distance Learning Endorsement requires specialized professional preparation of at least sixteen hours in four areas, one of which is "learning and teaching at a distance" (the program description has some references to online teaching), plus successful completion of a Distance Education Faculty Training workshop conducted by the Utah State Office of Education and Utah Education Network and consisting of twenty hours of hands-on technical training and a ten-minute mini lesson taught over Utah's Distance Education System.

Several states, including Colorado and Arizona, are considering adopting online teaching endorsements. The Colorado Online Advisory Board initiated an investigation of an online endorsement in 2008,[12] and state officials say discussions are continuing. The Arizona eLearning Task Force recommended an online endorsement in 2010,[13] and the state department of education is actively pursuing this option. West Virginia is currently discussing an online endorsement option, with the possibility of making it required for new online teachers but optional for existing teachers.[14]

Other states have pursued different approaches to ensure their online teachers are qualified. Effective in 2008, all online educators in Wisconsin are required to take 30 hours of professional development based on iNACOL standards. North Carolina requires that teachers in its state virtual school get certification through the Carolina Online Teacher Program. Kansas is updating its professional education and content program standards to address online learning delivery and technical skills for its teachers. Hawaii is developing a mentoring and training program for online educators, in collaboration with the University of Hawaii Department of Educational Technology.[15]

Several states have expressed interest in a content-area test for online educators. As noted in Figure 5, South Carolina already has a provision in its certification regulations for a content-area examination for online educators as "required by the State Board." Idaho has expressed interest in a content-area examination, as it would enable the state to credential experienced online educators without requiring them to take additional course work to qualify for an endorsement, as well as provide a standardized way to issue a teaching certificate. At the May 2011 ETS Client Conference, representatives from the following additional states also indicated an interest in adopting online teaching endorsements and/or content-area tests for

[12] Source: www.cde.state.co.us/onlinelearning/download/OLAB092308%20.pdf (accessed March 2011).
[13] Source: www.ade.az.gov/eLearning/2010/08-30-10E-LearningMinutes.pdf (accessed March 11, 2011).
[14] Source: comments from state representative at May 2011 ETS Client Conference.
[15] Source: interviews with state education personnel; Watson et al. 2010.

online teachers: Hawaii, Kansas, Kentucky, Louisiana, Missouri, North Carolina, Pennsylvania, Tennessee, Utah, Vermont and West Virginia. Some states were interested in a separate content-area test and others were in favor of an integrated approach that treats online teaching as another pedagogy — thus, incorporating online teaching pedagogy into the *Praxis*™ Principles of Learning and Teaching tests.

Part D: Endorsements and Assessments for Online Educators: Pros and Cons

There are strong arguments for the creation of a content-area test for online educators. It would allow for a competency-based approach to credentialing online educators; it would potentially drive pre-service educator preparation programs to prepare teachers to teach in online and blended learning environments; and it would create conditions for allowing certification reciprocity between states for online educators. As noted earlier, state certification policies that are state-specific are rapidly growing obsolete in the world of online K–12 education, as teachers and their students are now often separated by state lines.

Challenges to Creating a Valid and Reliable Assessment for Online Teachers

The largest challenge has been previously noted in this report: the relative dearth of research in best practices in K–12 virtual schooling and knowledge about which elements of pedagogy and practice are used by successful virtual educators. Although iNACOL standards for online teachers are used widely as the basis for professional development and to guide course work leading to online teaching credentialing programs in higher education, the standards have never gone through a formalized validation process. These standards are being revised as this paper is written, because practice is evolving so rapidly. In fact, what constitutes "K–12 virtual teaching and learning" is in flux, as blended and mobile learning are rapidly expanding. This significant variance in the meaning of "online learning," which can range from fully self-paced learning with little teacher interaction to fully facilitated interactive instruction, significantly impacts the nature of teaching in an online environment. If the lines between brick-and-mortar and virtual classrooms continue to blur and more and more educators employ technology applications, digital textbooks and other instructional materials, including social networking websites and iTunes® and iPhone® apps, most (if not all) educators will need to incorporate elements of online teaching pedagogy into their practice.

Recommendations

Given the "wild, wild west" nature of K–12 online learning across the country, there are potentially significant differences in the quality of online learning experiences for students and the quality of their teachers, and a content-area test of online teaching pedagogy could be an important step in guiding online teacher preparation and professional development. Little is known about the training and oversight of teachers employed by educational management organizations. The roles of online teachers differ widely, depending upon the setting in which they teach and the extent of virtual or face-to-face interaction they have with students. Many teachers are part-time, providing supplemental online courses to students while working full-time in traditional settings. There are some concerns that requiring endorsements and content-area tests will serve as a disincentive to educators to work in online environments. On the other hand, some state virtual schools like ACCESS in Alabama pay teachers very well for part-time teaching online, and there is an abundant supply of interested candidates. So a competency-based online teaching credential could make interested teachers more marketable.

Some current state educator policies create barriers to providing a pool of qualified online educators. Examples include lack of state certification reciprocity agreements or failure to allow candidates with recognized credentials in one state to teach online in another state. College or university faculty who have strong academic credentials but do not meet state licensure requirements are not permitted to teach in K–12 online programs in most states. Further, requiring individuals who undergo training in one institution to repeat that training to teach in another online program serves as a disincentive to educators. In these cases, a content-area assessment could serve to verify the online teaching credentials of a potentially larger pool of teachers and further help alleviate teacher shortages in Advanced Placement (AP®) Program courses and subjects such as physics, Chinese and Japanese.

All of the above conditions suggest that a content-area assessment of online teaching competency could help increase accountability for the quality of online teaching and learning, particularly in the currently largely unregulated world of virtual charters and schools run by educational management organizations. There exist, however, a number of challenges to overcome. These include:

- the rapidly changing world of virtual K–12 learning, with blurring lines between online and brick-and-mortar learning and constantly evolving technology;
- the need for more research into what constitutes online pedagogy that leads to higher levels of student success;
- an unknown future market for online learning and online teachers, as currently less than two percent of students have taken an online course, and no one knows the number of full- or part-time online teachers currently working across the country; and
- state policies regarding online educators can be expected to lag behind practice in the field for some time to come.

On the other hand, the predicted growth of blended and mobile learning in schools across the country suggests that all teachers will need to be skilled in various dimensions of online pedagogy. The technology is evolving, but all teachers will eventually need to be able to build virtual learning communities, understand technological tools, use online instructional materials/course ware, interact online with students and parents and guide students in the legal, safe, ethical and healthy use of technology. One can also argue that *all* teachers need to establish clear expectations for student participation, products and pacing; to guide and individualize learning; and to engage students using multiple modes of communication. As K–12 learning shifts more and more into a virtual environment, these expectations of effective teaching are not just desirable but necessary for all teachers.

With the exception of a handful of states with a significant number of state virtual schools, many state agencies are still struggling to identify what online learning programs exist in their states as well as determine what forms of oversight are needed and who should be responsible for that oversight. Reporting on numbers of online full-time students and course enrollments is uneven, and no states have a comprehensive system for reporting full- and part-time teachers. State-level policy makers have just begun to turn their attention to issues of online teacher quality, and some have left it to higher education institutions to address through those institutions' teacher education program approval processes. There is a growing recognition among state certification directors and professional standards board personnel that existing certification policies that are state-specific may not fit the new world of online education.

Although only approximately three percent of students have experienced online learning and only three percent of teachers have taught an online course, significant growth is expected in the coming decade — in particular at the district level, with significant involvement of commercial for-profit educational management organizations.

Appendix A: Sample of Selected Case Studies of Various Blended School Models (Source: Staker 2011)

ACCESS, Alabama
Online lab and "self-blend;" state virtual school

Teachers are primarily full-time brick-and-mortar and teach online part-time
Teacher compensation: $150/student per half credit
659 teachers trained by end of 2010

Acton Academy, Austin, Texas
Grades 1–5
"Flex" blended

Enrollment target of 36 students, with one master teacher and two assistants

Carpe Diem Collegiate High School and Middle School, Yuma, Arizona
Grades 6–12
"Rotation" blended

Six teachers for 273 students: one each for math, language arts, science, physical education, social studies and electives. All teachers teach all students and grade levels. During online instructional programs, "assistant coaches" (or highly qualified paraprofessionals) provide direction and help.

Connections Academy (Vision Academy), Houston, Texas
Grades 9–10
43 students
"Flex" model

All teachers and content provided through Connections Academy; teachers are all Texas-certified. Two face-to-face paraprofessionals provide help, but in the 2011–12 school year, a certified math teacher was added to provide additional math support.

eCADEMY, Albuquerque, New Mexico, Public Schools
Pre-K–12
Dropout recovery/prevention: open 3:10 p.m. to 9 p.m.
1,500 students

"Online Driver:" first meeting is face-to-face; remainder of course work is online. Teachers receive $190/student/semester; class size generally 30 students. Significant cost savings as building serves multiple shifts of students.

Hoosier Academies (partnership with K12, Inc.), Indianapolis, Indiana, charter school
Grades K–12
528 students

"Rotation" model: "two-day hybrid;" students rotate between online learning in a remote location for half the time and on-site face-to-face instruction for the other half. Teachers are available online or by phone to answer questions.

Michigan Virtual School (Michigan's state virtual school operated by a nonprofit or for-profit service provider)
Grades 6–12
15,000 students
"Self-blend" model

Three course styles:

1. *Instructor-led courses:* Michigan-certified teacher provides lesson plan, direction, content and feedback to students using Blackboard learning management system (average cost is $220–275 per seat).
2. *Instructorless courses:* Apex learning provides content for the educational products and services used with no instructor involvement ($190 per seat cost).
3. *Instructor-supported courses:* (current pilot) online teachers available to answer questions, but assignments and assessments are autoscored. MVS provides content and also licenses from various third parties.

Note: MVU is piloting an Online Teaching and Learning Mastery Program that uses project-based learning to offer K–12 teachers the opportunity to create online activities and online courses.

School of One, New York City
Pre-K–12
1,477 students
"Rotation" model

Mathematics is the only subject taught through blended learning. Highly supervised. Zones for independent learning, small-group collaboration and online learning. Eleven content providers provide over one thousand courses covering fourth- to ninth-grade math.

Appendix B: Summary of Selected Data from 2010 SREB Report on State Virtual Schools

State	# Students	# Course Enrollments	Δ from Prior Year	FT Teachers	PT Teachers	# Districts Offering Virtual Learning	Online PD Requirements for SVS Teachers
Ala.	12,957	31,187	+10–25%	none	558	unknown	3 days of initial PD, 6 PD modules in next year or two; 2 additional modules per year
Ark.	2,195	2,832	reduced	7	10	unknown	60 hours per year
Fla.	97,183	213,926	+25–50%	1,036	68	all districts required to offer virtual instruction; FVLS partners to provide franchises and FT options	extensive, including ESOL classes
Ga.	5,757	9,042	+25–50%	14	100	7 out of 186	yes, 3 hours per semester, plus attend professional learning symposium
Ky.	971	1,615	No Δ	0	35	3 out of 174	no mandates from state
La.	5,568	7,090	No Δ	16	84	unknown	no mandates from state
Md.	No data	No data	Declined 10–25%	none	none	2 out of 24	no mandates from state
Miss.[16]	3,198	5,707	Declined 10–15%	8	58	no response	no mandates from state
N.C.	27,632	73,658	+50%	0	300-350	9 or 115	initial and ongoing
Okla.[17]	No data	No data	reduction	yes	none	47 of 534	no mandates from state

[16] Mississippi chose not to participate in the 2010 SREB survey; responses are from the Keeping Pace 2010 survey. Connections Academy is to take over state virtual school operations.
[17] OU High School program is to be discontinued in August 2011; districts expected to have capacity to offer students increased opportunities for online courses.

State	# Students	# Course Enrollments	Δ from Prior Year	FT Teachers	PT Teachers	# Districts Offering Virtual Learning	Online PD Requirements for SVS Teachers
S.C.[18]	10,087	4,878	+10–25%	11	47	9 of 186	monthly face-to-face meetings, webinars; online teaching certification required
Tenn.	1,404	1,754	+25–50%	0	140	no response	no
Texas	1,489	1,806	+50%	See note[19]	See note[3]	unknown	professional development course authorized by TxVSN
Va.	6,276	6,276	+25–50%	24	13	20–30 out of 226 (est.)	No
W.Va.	1,455	3,924	+10–25%	6	none	1 out of 55 (known)	No

[18] Budget shortfall will result in enrollments limited to 3,000 students per semester and summer.
[19] Teachers are employed by TxVSN provider districts, not by the TxVSN.

Appendix C: iNACOL National Standards for Quality Online Teaching (updated August 2010)

A. The teacher meets the professional teaching standards established by a state licensing agency or the teacher has academic credentials in the field in which he or she is teaching.

Meets the state's professional teaching standards or has academic credentials in the field in which he or she is teaching.

Provides evidence that he or she has credentials in the field of study to be taught.

Knows the content of the subject to be taught and understands how to teach the content to students.

Facilitates the construction of knowledge through an understanding of how students learn in specific subject areas.

Continues to update academic knowledge and skills.

B. The teacher has the prerequisite technology skills to teach online.

Demonstrates the ability to effectively use word-processing, spreadsheet and presentation software.

Demonstrates effective use of Internet browsers, email applications and appropriate online etiquette.

Utilizes synchronous and asynchronous tools (e.g., discussion boards, chat tools, electronic whiteboards) effectively.

Troubleshoots typical software and hardware problems (i.e., change passwords, download plug-ins, etc).

Demonstrates growth in technology knowledge and skills in order to stay current with emerging technologies and trends.

C. The teacher plans, designs and incorporates strategies to encourage active learning, interaction, participation and collaboration in the online environment.

Demonstrates effective strategies and techniques that actively engage students in the learning process (e.g., team problem solving, in-class writing, analysis, synthesis and evaluation instead of passive lectures).

Facilitates and monitors appropriate interaction among students.

Builds and maintains a community of learners by creating a relationship of trust, demonstrating effective facilitation skills, establishing consistent and reliable expectations and supporting and encouraging independence and creativity.

Promotes learning through group interaction.

Leads online instruction groups that are goal-oriented, focused, project-based and inquiry-oriented.

Demonstrates knowledge and responds appropriately to the cultural background and learning needs of non-native English speakers.

Differentiates instruction based on students' learning styles and needs and assists students in assimilating information to gain understanding and knowledge.

Demonstrates growth in teaching strategies in order to benefit from current research and practice.

Creates a warm and inviting atmosphere that promotes the development of a sense of community among participants.

Encourages students to bring real-life examples into the online classroom.

Mandates participation by setting limits if participation wanes or if the conversation is headed in the wrong direction.

Provides structure for students but allows for flexibility and negotiation.

Uses best practices to promote participation.

Begins each lesson with a short, student-friendly, summary statement indicating the goal of the lesson and the primary benchmarks that will be covered.

Provides extended resources and activities to increase achievement levels.

D. The teacher provides online leadership in a manner that promotes student success through regular feedback, prompt response and clear expectations.

Models effective communication skills and maintains records of applicable communications with students.

Encourages interaction and cooperation among students, encourages active learning, provides prompt feedback, communicates high expectations and respects diverse talents and learning styles.

Persists in a consistent and reasonable manner until students are successful.

Establishes and maintains ongoing and frequent teacher-student interaction, student-student interaction and teacher-parent interaction.

Provides an online syllabus that defines objectives, concepts and learning outcomes in a clearly written, concise format.

Provides an online syllabus that defines the terms of class interaction for both teacher and students, defines clear expectations for both teacher and students, defines the grading criteria, establishes inappropriate behavior criteria for both teacher and students and explains the course organization to students.

Uses student data to inform instruction, guides and monitors students' management of their time, monitors learner progress with available tools and develops an intervention plan for unsuccessful learners.

Provides timely, constructive feedback to students about assignments and questions.

Gives students clear expectations about teacher response time.

Contacts students who are not participating.

Recognizes that student interaction with the lesson has instructional value and therefore encourages students to participate in leading the instruction and/or demonstrating mastery of the content in other appropriate ways.

Personalizes feedback (support, growth and encouragement).

Communicates high expectations.

E. The teacher models, guides and encourages legal, ethical, safe and healthy behavior related to technology use.

Facilitates student investigations of the legal and ethical issues related to technology and society; teaches students that copyright laws are created for a reason.

Establishes standards for student behavior that are designed to ensure academic integrity and appropriate uses of the Internet and written communication.

Identifies the risks of academic dishonesty for students.

Demonstrates an awareness of how the use of technology may impact student testing performance.

Uses course content that complies with intellectual property rights policies and fair use standards.

Provides students with an understanding of the importance of acceptable use policies (AUP).

Demonstrates knowledge of resources and techniques for dealing with issues arising from inappropriate use of electronically accessed data or information.

Informs students of their rights to privacy and the conditions under which their names or online submissions may be shared with others.

F. The teacher has experienced online learning from the perspective of a student.

Has taken an online course and applies experiences as an online student to develop and implement successful strategies for online teaching.

Demonstrates the ability to anticipate challenges and problems in the online classroom.

Demonstrates an understanding of the perspective of the online student through appropriate responsiveness and a supportive attitude toward students.

G. The teacher understands and is responsive to students with special needs in the online classroom.

Understands that students have varied talents and skills and uses appropriate strategies designed to include all students.

Provides activities, modified as necessary, that are relevant to the needs of all students.

Adapts and adjusts instruction to create multiple paths to learning objectives.

Encourages collaboration and interaction among all students.

Exhibits the ability to assess student knowledge and instruction in a variety of ways.

Provides student-centered lessons and activities that are based on concepts of active learning and that are connected to real-world applications.

Demonstrates ability to identify students struggling with ELL or literacy issues and delivers specific strategies.

Identifies options to expand student thinking, address styles of learning and avenues for enrichment or intervention.

Knows how to implement a team teaching concept.

H. The teacher demonstrates competencies in creating and implementing assessments in online learning environments in ways that assure validity and reliability of instruments and procedures.

Creates or selects fair, adequate and appropriate assessment instruments to measure online learning that reflect sufficient content validity (i.e., that adequately cover the content they are designed to measure), reliability and consistency over time.

Implements online assessment measures and materials in ways that ensure instrument validity and reliability.

I. The teacher develops and delivers assessments, projects and assignments that meet standards-based learning goals and assesses learning progress by measuring student achievement of learning goals.

Includes authentic assessment (i.e., the opportunity to demonstrate understanding of acquired knowledge and skills as opposed to testing isolated skills or retained facts) as part of the evaluation process; assesses student knowledge in a forum beyond multiple guess.

Provides continuous evaluation of students to include pre- and post-testing and student input throughout the course.

Demonstrates an understanding of the relationships between and among the assignments, assessments and standards-based learning goals.

J. The teacher demonstrates competencies in using data and findings from assessments and other data sources to modify instructional methods and content and to guide student learning.

Assesses each student's background and content knowledge and uses these data to plan instruction.

Reviews student responses to test items to identify issues related to test validity or instructional effectiveness.

Uses observational data (e.g., tracking data in electronic courses, Web logs, email) to monitor course progress and effectiveness.

K. The teacher demonstrates frequent and effective strategies that enable both teacher and students to complete self- and pre-assessments.

Employs ways to assess student readiness for course content and method of delivery.

Employs ways for students to effectively evaluate and assess their own readiness for course content and method of delivery.

Understands that student success (e.g., grade, level of participation, mastery of content, completion percentage) is an important measure of teaching and course success.

Provides opportunities for student self-assessment within courses.

Empowers students to independently define short- and long-term learning goals and monitors their personal progress.

L. The teacher collaborates with colleagues.

Networks with others involved in online education.

Leads collaborative efforts to create common assessments among grade-level and/or content-area teachers and share assessment results with colleagues to collaboratively plan instruction that will best meet individual student needs.

M. The teacher arranges media and content to help students and teachers transfer knowledge most effectively in the online environment.

Demonstrates the ability to modify and add content and assessment, using an online learning management system (LMS).

Incorporates multimedia and visual resources into an online module.

Demonstrates the ability to effectively use and incorporate subject-specific and developmentally appropriate software in an online learning module.

Reviews all materials and Web resources for their alignment with course objectives and state and local standards and for their appropriateness on a continuing basis.

Creates assignments, projects and assessments that are aligned with students' different visual, auditory and hands-on ways of learning.

Arranges media and content to help transfer knowledge most effectively in the online environment.

Appendix D: InTASC Standards Addressing Technology-Related Competencies[20]

Standard #3: Learning Environments

3(g) The teacher promotes responsible learner use of interactive technologies to extend the possibilities for learning locally and globally.

3(h) The teacher intentionally builds learner capacity to collaborate in face-to-face and virtual environments through applying effective interpersonal communication skills.

Standard #4: Content Knowledge

4(g) The teacher uses supplementary resources and technologies effectively to ensure accessibility and relevance for all learners.

Standard #5: Application of Content

5(c) The teacher facilitates learners' use of current tools and resources to maximize content learning in varied contexts.

Standard #6: Assessment

6(i) The teacher continually seeks appropriate ways to employ technology to support assessment practice both to engage learners more fully and to assess and address learner needs.

Standard #8: Instructional Strategies

8(g) The teacher engages learners in using a range of learning skills and technology tools to access, interpret, evaluate and apply information.

Standard #9: Professional Learning and Ethical Practice

9(d) The teacher actively seeks professional, community and technological resources, within and outside the school, as supports for analysis, reflection and problem solving.

Standard #10: Leadership and Collaboration

10(g) The teacher uses technological tools and a variety of communication strategies to build local and global learning communities that engage learners, families and colleagues.

[20] Source: reference chart of key crosscutting themes in updated InTASC standards (Council of Chief State School Officers 2011, 23).

Appendix E: Summary of Online Teaching and Learning Initiatives from Selected States[21]

SVS = State Virtual School PT = Part-Time
FT = Full-Time PD = Professional Development

State	# FT/PT Teachers[22]	Highlights of Online Learning Initiatives and Comments from State Contacts Regarding Online Teaching Policies and Initiatives	SVS?	Charter School Laws?
Ala.	SVS: 558 PT	ACCESS distance learning is the state virtual school and has the third highest course enrollments in the country. There has been significant investment in infrastructure for distance learning in the last several years. Courses are taught outside of normal school day; there is a waiting list for most subjects except world languages. Teachers are paid generous stipends (the bulk of funding goes to teacher stipends). Three days of initial training are required; all new teachers have a mentor and are required to participate in monthly webinars. Experienced teachers have periodic PD, with face-to-face meeting/training at least once per year. Strong online support is provided through "community sites" that are content-specific. ACCESS designs most of its own course work in partnership with the University of Alabama. There is currently no interest in an endorsement, as ACCESS controls selection, training, support, and PD for all ACCESS teachers. Alabama was the second state to introduce an online course graduation requirement.	yes	no
Ariz.	no data	Arizona has 36 online programs in Arizona Online Instruction and has lifted caps on the number of districts and charters that can offer online programs. The Arizona State Board of Charter Schools approves online programs in charters; the state board of education approves them in districts. There have been slight enrollment declines in the last two years. The Arizona eLearning Task Force proposed examining an online teaching endorsement in August 2010. The issue has again been moved forward after a department reorganization.	no	yes
Calif.	no data	California online learning initiatives include UC Prep initiative (state-led), numerous online charter schools and district online programs. The state's Commission on Teacher Credentialing (CTC) has established a Teacher Preparation Advisory Panel to examine issues of standards and credentialing of online teachers (among other issues). Recommendations are due August 2012. Orange County was a founding member of CUE, Inc.'s Leading Edge Certification initiative, and the California Department of Education is also a partner.	no	yes

[21] Highlights of online learning initiatives and teacher policies noted in this table incorporate selected comments, interviews and correspondence from state education agency personnel, plus data from *Keeping Pace* (Watson et al. 2010), unless otherwise noted.
[22] Unless otherwise noted, these data come from the SREB 2010 Survey of State Virtual Schools (June 2011).

State	# FT/PT Teachers[23]	Highlights of Online Learning Initiatives and Comments from State Contacts Regarding Online Teaching Policies and Initiatives	SVS?	Charter School Laws?
Colo.	640.5 "highly qualified" teachers; total "adults:" 867[24]	Enrollment in Colorado Online Learning (the state virtual school) has been decreasing due to local district budget constraints. Colorado has 22 full-time multi-district online schools and twelve single-district online programs. The Colorado Department of Education has extensive policy frameworks and reporting requirements. In 2008, discussions began regarding an online teaching endorsement, which is still being explored. Recent changes to Colorado's teacher evaluation laws require 50 percent of an evaluation to be based on student achievement, so more precise tracking of and reporting on online teachers is expected to be required.	yes[25]	yes
Conn.	no data	The Connecticut Distance Learning Consortium operates as a state virtual school in conjunction with the state department of education. Connecticut Virtual High School provides credit recovery, Mandarin and Japanese. Local districts are not required to pay for online courses. Some districts participate in the Global Virtual High School initiative. Online teachers may be certified in any state.	yes	yes
Fla.	SVS: 1,036 FT 68 PT	Florida Virtual School (FVLS) delivers supplemental instruction to about two percent of Florida students. Funding follows the student, which makes this part of larger school-choice policies. Forty of 67 Florida school districts operate FVLS franchises (primarily for full-time programs), in which district teachers teach online but FVLS provides training and mentoring to the district. Legislation has been proposed to allow "adjunct" faculty with specific expertise to teach. Discussion of an online teaching endorsement is taking place (no decisions yet). Significant growth is largely the result of class-size limits, the economy, funding policies (funding follows the student and is based on successful completion of course) and the issue of homeschooled families, including military families. FVLS partnered with Connections Academy to provide full-time services for K–8 students.	yes [26]	yes

[23] Unless otherwise noted, these data come from the SREB 2010 Survey of State Virtual Schools (June 2011).
[24] Source: D. Carpenter, K. Kafer, K. Reeser and S. Shafer. *Summary Report of the Operations and Activities of Online Programs in Colorado*. (Boulder, Colo.: Colorado Department of Education, 2011.) Retrieved June 2011, www.cde.state.co.us/onlinelearning/download/1011/2011_AnnualReport_OnlinePrograms.pdf.
[25] Colorado's state virtual school is an independent nongovernmental organization with partial state funding.
[26] Florida Virtual School is a special district school that also offers district franchises.

State	# FT/PT Teachers[27]	Highlights of Online Learning Initiatives and Comments from State Contacts Regarding Online Teaching Policies and Initiatives	SVS?	Charter School Laws?
Ga.	SVS: 14 FT 100 PT	Georgia Virtual School and Georgia Cyber Academy operate statewide programs; several suburban Atlanta districts have significant online programs. Changing charter school laws are leading to expansion of charters (previously local boards served as charter school authorizers; they are now approved through the Georgia Charter School Commission). Georgia's Online Teaching Endorsement has been in effect since 2006; it is governed by Georgia standards for Approval of Professional Educator Units and Educator Preparation Programs. Fifty-one educators currently hold the endorsement. There are no plans for content-area test.	yes	yes
Hawaii	no data	Statewide online programs include Hawaii Virtual Learning Network partners: E-School and Myron B. Thompson Academy, the private Kamehameha Schools and Elite Element Academy and Hawaii Technology Academy. State policies include developing a mentoring and training program for online teachers and providing support and incentives to teachers to become qualified to teach online courses or to utilize online courses to incorporate project-based and work-relevant learning.	yes	yes
Iowa	no data	Iowa Learning Online is the state virtual school providing supplemental courses to school districts. It has been funded to date with federal e-Rate funds, so enrollment has been flat. Proposals are being drafted to create a robust state virtual school offering full-time and supplemental options, possibly to be addressed at an education summit convened by the governor this summer. If Iowa's programs are scaled up, then attention will be turning to training and possible credentialing of online teachers.	yes	yes
Idaho	SVS: 252 PT	Idaho Digital Learning Academy is one of the oldest virtual schools. Currently there are seven virtual charter schools and state distance learning academy. No data are available on districts providing supplemental courses. Governor's 2011 reform legislation promotes blended learning and requires students to take two online courses over the course of their high school careers, with students encouraged to seek dual-credit course work. Idaho adopted standards for online teachers in 2010; endorsement adopted in 2011 (voluntary).	yes[28]	yes

[27] Unless otherwise noted, these data come from the SREB 2010 Survey of State Virtual Schools (June 2011).
[28] Idaho Virtual School is a governmental entity outside of the state education agency.

State	# FT/PT Teachers[29]	Highlights of Online Learning Initiatives and Comments from State Contacts Regarding Online Teaching Policies and Initiatives	SVS?	Charter School Laws?
Kan.	no data	There are 44 online programs (mostly district-based, including charters). The state is updating professional education standards to address competencies related to online learning, delivery and technology skills for all teachers. In the future, preparation programs would be required to address online pedagogy. PD in online pedagogy currently required for online teachers.	no	yes
Ky.	SVS: 35 PT	Kentucky Virtual Schools is the state virtual school and provides support for districts wishing to offer blended learning options to students. The Appalachian Educational Laboratory and the Collaborative for Teaching and Learning are participating in a project to document and compare student performance and teacher engagement in blended versus nonblended environments. There are no state online policies currently.	yes	no
La.	SVS: 16 PT 84 PT	Louisiana Virtual School was formed in 2000; there are no significant district programs. Charter schools are permitted but none were approved as of August 2010, although more applications were submitted in fall 2010 due to the lifting of a cap on charters. Louisiana has an endorsement in Online Instruction requiring online courses plus an online teaching intern experience or successful experience as an instructor/facilitator of an online course.	yes	yes
Mass.	no data	Districts have accessed online courses through the Virtual High School Global Consortium. In January 2010, the state legislature passed laws allowing individual districts to establish their own virtual schools without state oversight. The Massachusetts Virtual Academy at Greenfield (in affiliation with K12) was first to be approved. The state board is attempting to put virtual schools under the auspices of charter school legislation. Massachusetts is also exploring the need for online teaching competencies and a possible endorsement/credentialing requirement for online educators. The state is still in the early stages of exploration of these issues.	no	yes
Maine	no data	The Maine Online Learning Program has established an approved list of online learning providers for districts. Currently, there are no requirements in effect for online teachers, other than state certification. The Virtual High School Global Consortium serves 36 high schools; there are no major multidistrict programs. K12 has a pilot program with two districts.	no	no

[29] Unless otherwise noted, these data come from the SREB 2010 Survey of State Virtual Schools (June 2011).

State	# FT/PT Teachers[30]	Highlights of Online Learning Initiatives and Comments from State Contacts Regarding Online Teaching Policies and Initiatives	SVS?	Charter School Laws?
Mo.	no data	Virtual education is moving from state virtual schools to charters such as Aventa, Apex and Connections due to SVS budget cuts (17 percent decrease); the Missouri Virtual Instruction Program (MoVIP) now has a tuition-based funding model. Missouri Virtual and St. Louis virtual schools have closed. The state's goal is to produce a clearinghouse of courses — supported by the state's school board association. Missouri has concerns over online teacher quality and wants to build district capacity to offer online courses. Currently, staff development is minimal, and there is no systematic emphasis in preparing online teachers in teacher-education programs.	yes	yes
N.J.	no data	There are no statewide policies or requirements for online learning or teaching, but New Jersey is in the process of developing such policies. Currently, 46 districts are members of the Virtual High School Global Consortium, and some districts contract with online learning providers.	no	yes
N.C.	450 PT[31]	North Carolina Virtual Public School (NCVPS) is the second-largest state virtual school. The cap was lifted off charter schools in the last legislative session; impact on virtual charters is uncertain. There was a 54 percent increase in summer school virtual enrollments this year. Twenty to thirty students per course; also 100–150 "conversation coaches" employed for critical language instruction. All NCVPS instructors must have Carolina Online Teacher Program (COLT) training and three to five years teaching experience; must participate in a teacher-assistance program (four- to -six-week online orientation course) and then work with a veteran online teacher; and are subject to additional training and performance review. There is a voluntary "buddy" system for new online teachers. There are currently no district-based virtual programs. There is support for an online teaching endorsement. A critical difference is seen between "managing" students online versus "teaching" students online. Some form of synchronous contact is required — a minimum of one per week. This necessitates reasonable class size.	yes	yes
N.D.	no data	North Dakota Center for Distance Education is a small state virtual school. Districts often turn to out-of-state providers for alternative education and credit recovery programs (e.g., Jefferson County, Kentucky, online courses). Additional course requirements in math and science for graduation may increase demand for online providers. The state is increasing its role in brokering online learning service providers for districts. Currently, teachers of online content must be certified and meet or exceed their corresponding state's standards for highly qualified.	yes	no

[30] Unless otherwise noted, these data come from the SREB 2010 Survey of State Virtual Schools (June 2011).
[31] The SREB 2010 Survey of Virtual Schools indicated 300–350 part-time teachers. The figure above came from the NCVPS.

State	# FT/PT Teachers[32]	Highlights of Online Learning Initiatives and Comments from State Contacts Regarding Online Teaching Policies and Initiatives	SVS?	Charter School Laws?
Okla.	no data	Statewide programs include Oklahoma Virtual High School and Oklahoma Virtual Academy. There are also two university-sponsored, tuition-based high school programs. OU High School (degree-granting arm of the Oklahoma Independent Learning High School) has been discontinued as of August 2011. Teachers may be certified in another state or be faculty at a postsecondary institution. Local school boards set most policies, including students per instructor.	no	yes
Pa.	no data	Pennsylvania has twelve K–12 cyber schools serving over 24,000 students and some district programs. Cyber charter schools are regulated by charter school laws in general and regulations specific to cyber charters. Seventy-five percent of charter school staff must meet state certification standards, including staff in cyber charters.	no	yes
S.C.	SVS: 47 PT/11 FT add'l. 72+ FT in charters; limited or no data on district programs	South Carolina has a state virtual school plus five FT virtual charter schools; Horry and Greenville counties operate their own online schools. State has a voluntary online teaching endorsement, with about half of FT state virtual school teachers seeking endorsement; there has been only limited interest from charter schools. Endorsement requires course work from the University of Charleston, based on SREB/iNACOL standards. There is a provision in the regulations to include a content-area examination (if available).	yes	yes

[32] Unless otherwise noted, these data come from the SREB 2010 Survey of State Virtual Schools (June 2011).

State	# FT/PT Teachers[33]	Highlights of Online Learning Initiatives and Comments from State Contacts Regarding Online Teaching Policies and Initiatives	SVS?	Charter School Laws?
Tenn.	SVs: 140 PT pool of 220 teachers trained through Hamilton County Virtual School[34]	A state virtual school (e4TN) was funded through a federal grant, but funding was to run out on June 30, 2011. A virtual charter school law passed, as part of the lifting of charter school caps (new approvals are currently in transition). Niswonger Foundation was to provide some support to e-learning by housing e4TN online courses and providing course content and technical services to some districts. Local education authorities are responsible for implementing and controlling online-learning programs. Hamilton County Virtual School is one of the district programs. The status of e4TN is uncertain.	yes	yes
Texas	no data	Texas Virtual School Network (TxVSN) and Electronic Course Program serve as a state virtual school for Texas. TxVSN does not directly offer courses; instead, courses are provided by "provider districts." Districts are authorized to provide online courses with no quality control or oversight if they do not choose TxVSN courses. There is concern over quality control of online teachers located outside of Texas, but oversight is not yet an immediate priority.	yes	yes
Utah	no data	The state virtual school is Utah Electronic High School. Utah Virtual Academy is the state's largest online charter school. Other virtual initiatives include the Open High School of Utah and several district programs. Utah has a Distance Learning Endorsement consisting of sixteen semester hours in the area of distance/technology education.	yes	yes
Va.	SVS: 24 FT 13 PT	Virtual Virginia now has demand exceeding enrollment limits. There are many district programs but no full-time online charter schools. New legislation provides for a more rigorous review of applications for online providers. This is a rapidly expanding environment.	yes	no

[33] Unless otherwise noted, these data come from the SREB 2010 Survey of State Virtual Schools (June 2011).

[34] Source: J. Watson, A. Murin, L. Vashaw, B. Gemis, C. Rapp. *Keeping Pace with K–12 Online Learning.* (Boulder, Colo.: Evergreen Education Group, 2010.) Retrieved February 2011, www.kpk12.com/wp-content/uploads/KeepingPaceK12_2010.pdf.

State	# FT/PT Teachers[35]	Highlights of Online Learning Initiatives and Comments from State Contacts Regarding Online Teaching Policies and Initiatives	SVS?	Charter School Laws
Vt.	no data	Vermont just started a state virtual school called the Vermont Virtual Learning Cooperative, funded by ARRA and Title IID federal funds. As of June 2010, 25 Vermont high schools were using the Virtual High School Global Consortium to deliver online classes. There are no major district-level online programs or other full-time options for students. Department of education staff have expressed interest in a content-area assessment for online teachers.	yes	no
Wash.	no data	A Digital Learning Department was recently created in the Department of Public Instruction. There are a variety of statewide and district-run programs for online learning. No online teacher standards are currently in place, but there is potential interest in developing specific standards for online teachers as well as developing some sort of credential for online teachers.	no	no
Wis.	no data	There are fifteen virtual charter schools; enrollment of about 5,250 students was expected in 2010–11. Wisconsin Virtual School is a partnership between the Department of Public Instruction and Cooperative Educational Service Agency using ARRA funds for PD. There was a 70 percent increase in summer school enrollments, funded through course fees. Wisconsin eSchool Network is a consortium of nine school districts providing AP classes, credit recovery and other courses. Thirty hours of PD are required of all online teachers as of July 2010, "to ensure that teachers are able to transfer their mastery of the ten Wisconsin teaching standards into the online environment." Professional development should be based on iNACOL standards, but there is no current discussion of an endorsement.	yes	yes
Wyo.	no data	Wyoming Switchboard Network (WNS) was established to serve as a central collector of distance-education resources. Five Wyoming school districts operate statewide online programs, along with small single-district programs. Current guidelines originate in distance-education course rules ("transmitting" and "receiving" ends). A task force has been set up by the governor's office to update guidelines and laws.	no	yes
W.Va.	SVS: 6 FT	In summer 2010, a statewide technology conference for P–12 grades was held. There has been some discussion of an endorsement (advanced credential) or an additional requirement for teacher preparation programs; the conversation is just starting. No charter school legislation exists at this time. An online learning experience is required for graduation.	yes	no

[35] Unless otherwise noted, these data come from the SREB 2010 Survey of State Virtual Schools (June 2011).

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