

spotlight

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VIRTUALLY IRRELEVANT

How certification rules impede the growth of virtual schools

KEY FACTS: • **Teacher-certification requirements are among the most onerous rules enforced by state education agencies and have the potential seriously to limit the scope, quality, and accessibility of virtual schooling for years to come.**

• **By design, certification requirements prohibit unlicensed individuals who reside within a state — such as higher education faculty, private-sector professionals, private school faculty, and independent scholars — from teaching virtual courses.**

• **States should allow their virtual schools to have the flexibility to focus on hiring candidates who possess the requisite skills and relevant knowledge and experience, rather than those who possess mandated credentials.**

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There is no question that high-quality teachers produce high-achieving students. The problem is that none of the standards that states and school districts traditionally use to identify high-quality teachers has a significant effect on student performance. A large body of research shows that advanced degrees, years of experience, completion of education courses, teacher test scores, and certification status do not improve teacher effectiveness. Unfortunately, state licensure policies continue to use those criteria to determine who can and cannot teach.¹

Certification and licensure² rules also artificially limit the number and kinds of teachers that state-managed virtual schools employ. State education agencies restrict the pool of teacher candidates to those who have obtained state-specific certification and, in some cases, highly qualified status under the federal No Child Left Behind law (see Appendix A). Those regulations typically disqualify those who reside outside a particular state from teaching in that state. Certification requirements also prohibit unlicensed individuals who reside within a state — such as higher education faculty, private-sector professionals, private school faculty, and independent scholars — from teaching virtual courses.³

Thus, the most serious barrier to the widespread adoption of virtual school-

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ing — a type of instruction that allows qualified instructors to deliver lectures, content, and assessments using Internet-based communication tools — is not an antiquated technological infrastructure or inadequate funding. Rather, it is the application of one-size-fits-all teacher-certification rules and regulations designed to maintain the educational status quo. Teacher-certification requirements are among the most onerous rules enforced by state education agencies and have the potential seriously to limit the scope, quality, and accessibility of virtual schooling for years to come.

How do states sustain certification barriers?

In *Disrupting Class: How Disruptive Innovation Will Change the Way the World Learns*, authors Clayton Christensen, Michael Horn, and Curtis Johnson recount the inspiring story of Jaime Escalante, subject of the book *Escalante: The Best Teacher in America* by Jay Matthews and the film “Stand and Deliver.”⁴

Escalante was a gifted math teacher at Garfield High School, a chronically low-performing school located in Los Angeles. In 1982, Escalante attracted national attention when his students achieved a 100 percent passing rate on the Advanced Placement (AP) Calculus test — twice. The Educational Testing Service, who administers Advanced Placement tests, suspected foul play, so they re-administered the test to Escalante’s students. The students voluntarily retook the test and passed again. By the time he resigned from Garfield in 1991, 570 students at the school were taking Advanced Placement courses.

Christensen, Horn, and Johnson ask, “Escalante was an exceptional teacher. Why not capture Escalante’s instructional magic on film and make it available to schools anywhere?” To put a modern spin on the question, “Why not capture someone with Escalante’s instructional magic on a computer and make it available to schools anywhere?”

The technology to deliver high-quality online instruction exists, but a teacher of Escalante’s caliber without the right teaching certificate would not be permitted to teach in online schools in other states. Why? That teacher would not have the credentials needed to teach in each of the states offering the course. Unless the teacher possessed a current North Carolina teaching license, for example, the NC Department of Public Instruction would not permit him or her to teach in this state, regardless of talent.

Like most states, North Carolina has education leaders who believe that they can improve student performance by enforcing and monitoring extensive teacher-certification requirements. Unfortunately, state certification policies often ensure that mediocre but credentialed teachers remain in public schools, while talented but uncredentialed applicants seldom have an opportunity to enter the teaching profession.

The North Carolina Virtual Public School (NCVPS), a state-operated online school, also adheres to state certification policies. NCVPS regulations specify, “The North Carolina State Board of Education (NC SBOE) requires teachers who teach for North Carolina Virtual Public School to have a current NC teaching license in the areas in which they are applying to teach.” The NC Virtual School honors certification reciprocity agreements from other states, which allows certified teachers in one state to “transfer” their certification to another participating state. Unfortunately, North Carolina does not have 100 percent reciprocity with all other states. Therefore, a teacher from, e.g., Florida who wishes to become a NCVPS teacher in North Carolina may need to take various steps toward meeting the state’s certification requirements. He or she would also be required to submit extensive paperwork and an \$85 processing fee to the NC Department of Public Instruction’s sizable Licensure Division. According to the National Council on Teacher Quality, only eleven states allow out-of-state teachers to obtain their state certification with “no strings attached.”⁵

Christensen and his colleagues identify “hierarchical interdependencies” as one of the impediments to the creation of customized learning environments. Hierarchical interdependencies are top-down rules and regulations that reinforce particular political, fiscal, professional, and educational practices. They observe,

These range from well-intentioned mandates, which are often contradictory from local, state, and federal policymakers, that influence what happened in schools to union-negotiated work rules that become ensconced in contracts and policies at the state and local levels. ... Even more problematic, this kind of change in practice [customized learning] would require changes in the way prospective science and math teachers are trained and certified.⁶

Without a doubt, certification rules are one of the most entrenched hierarchical interdependencies in our public schools today. Certification and licensure rules exist in a hierarchical interdependency that stifles innovation and change. This interdependency goes far beyond the state education agency. College and universities that prepare teachers for the public school workforce conform their education curricula to the certification rules established by a state education agency, state legislature, or Congress. Certification mandates also keep testing companies, most notably ETS, in business by requiring teachers to pass one or more Praxis exams.

Public school districts are dependent on both the colleges and universities that graduate teachers and the testing companies that assess them. School personnel expect that the course of study established by a college or university, Praxis scores, and credentials granted by the state, indicate that the teaching candidate has the minimum training and qualifications needed to be successful in the classroom.

There is also financial interdependency that exists among the institutions. Colleges and universities enjoy considerable financial gain by maintaining a near monopoly over teacher training, a monopoly created by state certification rules. State education agencies collect hundreds of thousands of dollars in fees from prospective and current teachers, while the testing industry makes millions from teachers who are required to pass standardized test(s). Thus, a number of institutions have financial incentives to thwart attempts to ease or abolish certification standards.⁷

Filling the research deficit

To date, few researchers have recognized certification and licensure as a serious threat to virtual schooling. The Southern Regional Education Board (SREB) published the most comprehensive study of the problem in 2008. Education researcher William R. Thomas observed,

Currently, almost every SREB state virtual school requires its online teachers to be certified in that state. While this may seem necessary to ensure that online teachers are as qualified as their counterparts in traditional schools, it may not be appropriate for instructors who teach in classrooms without borders.

In fact, state teacher certification requirements are thwarting the hiring of quality online teachers, who need unique instructional, communication and technical skills not necessarily required of teachers in a face-to-face setting.⁸

Thomas argued that states should shift their virtual teacher recruitment efforts from residency to skills. Specifically, he recommended that states align their teacher recruitment and retention efforts on the SREB Standards for Quality Online Teaching, a set of criteria that describes the elements that make online school successful.⁹

The SREB standards outline kinds of skills that all virtual school teachers should possess, including mastery of the technology, excellent communication and time-management skills, an awareness of differing abilities and needs of students, and the ability to create, administer, and analyze assessments of student performance. They establish a number of broad areas for states to consider (see Table 1).

The SREB standards, which were written two years before Thomas' study, recommended that states hire those who have obtained state certification requirements. Fortunately, they also provide the option to hire those who have academic credentials in the subject matter or in their field. Presumably, this latter group would include college profes-

sors and other professionals. The one deficiency in this standard is the exclusion of relevant professional experience in the hiring criteria.

Thomas noted that states have added another barrier to the process. Once teachers have received state approval to teach online courses, those teachers complete a state-specific, comprehensive professional-development or online certification course usually taught at an in-state institution before their employment begins. Teachers outside of the state typically do not have access to these courses.

In her study of blending learning for the Innosight Institute, Heather Staker observed a similar trend in the Albuquerque Public Schools eCADEMY. She wrote, “One constraint on growth is that eCADEMY requires its teachers to obtain district certification in online teaching, and this makes rapid expansion difficult.”¹¹ Many other virtual school operators impose similar requirements on prospective teachers.

Like the SREB, researchers at the Innosight Institute recognized the kinds of barriers that certification and licensure rules may pose for blended learning environments, which combine traditional and virtual instruction. Among the policy changes needed to “maximize blended learning’s transformational potential,” they recommended, “Lifting the rules around certification and licensure to let schools slot paraprofessionals or capable but non-state-certified teachers

Table 1. Southern Regional Education Board (SREB) Standards for Quality Online Teaching, 2006¹⁰

Area	Standards
<i>Academic Preparation</i>	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.
<i>Content Knowledge, Skills and Temperament for Instructional Technology</i>	The teacher has the prerequisite technology skills to teach online.
<i>Online Teaching and Learning Methodology, Management, Knowledge, Skills and Delivery</i>	<p>The teacher plans, designs and incorporates strategies to encourage active learning, interaction, participation and collaboration in the online environment.</p> <p>The teacher provides online leadership in a manner that promotes student success through regular feedback, prompt response and clear expectations.</p> <p>The teacher models, guides, and encourages legal, ethical, safe, and healthy behavior related to technology use.</p> <p>The teacher has experienced online learning from the perspective of a student.</p> <p>The teacher understands and is responsive to students with special needs in the online classroom.</p> <p>The teacher demonstrates competencies in creating and implementing assessments in online learning environments in ways that assure validity and reliability of instruments and procedures.</p> <p>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.</p> <p>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.</p> <p>The teacher demonstrates frequent and effective strategies that enable both teacher and students to complete self- and pre-assessments.</p>

into appropriate assistive or instructional roles and enable schools to extend the reach of great teachers across multiple, geographically disparate locations.”¹²

Conclusion and Recommendations

State certification requirements would prohibit Salman Khan, a gifted teacher, and founder of the Khan Academy online school, from teaching mathematics and science.¹³ On the Khan Academy website, Salman Khan writes,

I teach the way that I wish I was taught. The lectures are coming from me, an actual human being who is fascinated by the world around him. The concepts are conveyed as they are understood by me, not as they are written in a textbook developed by an educational bureaucracy. Viewers know that it is the labor of love of one somewhat quirky and determined man who has a passion for learning and teaching. I don't think any corporate or governmental effort — regardless of how much money is thrown at the problem — can reproduce this.¹⁴

He is right. No corporate or governmental effort can reproduce it, but they can surely block it. Through certification requirements, they do.

Rather than impede the progress of online learning, state education agencies should rethink their teacher-certification policies and devise rules that are more favorable to the online education environment:

1. States should acknowledge the disconnect between certification rules, teacher quality, and online learning.¹⁵
2. State education agencies and legislators should ease or eliminate traditional certification and licensure requirements for online teachers.
3. If eliminating the existing certification process is not an option, states should reform lateral-entry or alternative certification programs, so that individuals who do not possess education credentials to teach can easily obtain them.
4. A consortia of states may also consider the development of a common education credential for virtual school teachers. In a 2008 study, researchers at the University of Florida outlined best practices for K-12 teachers, which states could use to formulate a “standardized model for exemplary instruction in K-12 virtual schooling.”¹⁶ (see Appendix B.).
5. The U.S. Department of Education or a national organization like the National Governors Association should encourage states to adopt agreements for full reciprocity with other states. The agreement should include a licensure processing fee waiver and minimal paperwork requirements.
6. States should allow their virtual schools to have the flexibility to focus on hiring candidates who possess the requisite skills and relevant knowledge and experience, rather than those who possess mandated credentials. The SREB *Standards for Quality Online Teaching* and iNACOL's *National Standards for Quality Online Teaching* provide good starting points for establishing an alternative to the standard credential review of teaching candidates¹⁷ (see Appendix C).
7. In an era of budget shortfalls and economic uncertainty, policymakers and researchers should continue to promote high-quality online instruction (see Appendix D).

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Appendix A. State Virtual School Programs and Certification Requirements

Program ¹⁸	Year Started	Type	State Teachers Certification Required?
Alabama ACCESS	2005	SEA	Yes
Arkansas Virtual High School	2000	SEA	Yes
Colorado Online Learning	1999	Independent NGO with partial state funding	Yes
Connecticut Virtual Learning Center	2007	SEA	Yes
Florida Virtual School	1997	Special school district	Yes
Georgia Virtual School	2005	SEA	Yes
Hawaii Virtual Learning Network	2008	SEA	Yes
Idaho Digital Learning Academy	2002	Government entity outside SEA	Yes ¹⁹
Illinois Virtual School	2001	SEA	Yes
Iowa Learning Online	2004	SEA	Yes
Kentucky Virtual Schools	2000	SEA	Yes
Louisiana Virtual School	2000	SEA	Yes ²⁰
Maryland Virtual Learning Opportunities	2003	SEA	Yes
Michigan Virtual School	2000	NGO – state funded	Yes
Mississippi Virtual Public School	2006	SEA outsourcing to EMO	Yes
Missouri Virtual Instruction Program	2007	SEA	Yes
Montana Digital Academy	2010	Unit of the higher education system	Yes
New Hampshire Virtual Learning Academy Charter School	2007	LEA	Yes
New Mexico IDEAL	2008	SEA	Yes
North Carolina Virtual Public School	2007	SEA	Yes
North Dakota Center for Distance Education	1996	SEA	Yes
South Carolina Virtual School	2007	SEA	Yes
South Dakota Virtual School	2007	SEA	Yes
Tennessee – e4TN	2006	LEA	Yes
Texas Virtual School Network	2009	SEA	Yes
Utah Electronic High School	1994	SEA	Yes
Vermont Learning Cooperative	2010	SEA/LEA	Yes
Virtual Virginia	2004	SEA	Yes
West Virginia Virtual School	2001	SEA	Yes
Wisconsin Virtual School	2000	LEA	Yes

Key: EMO=Education Management Organization; LEA=Local Education Agencies (school district); NGO=Non-government Organization; SEA=State Education Agency.

Appendix B: Best Practices for K-12 Virtual School Teachers

The following list was developed Meredith DiPietro, Richard E. Ferdig, Erik W. Black, and Megan Preston and published as “Best practices in teaching K-12 online: Lessons learned from Michigan Virtual School teachers” in the *Journal of Interactive Online Learning*.²¹

<i>Practice</i>	<i>Description</i>
General Characteristics	
Michigan Virtual School teachers go the extra mile to support student learning	This practice represents a synthesis of statements made by participants that address the multiple ways teachers provide support for students, and their commitment to students’ success. The importance of ‘going the extra mile’ to support students was discussed as a means for increasing confidence with the content presented in the course and encouraging student course completion.
Michigan Virtual School teachers are skilled with the basic uses of technology	This practice represents a synthesis of statements made by participants that identify the ability to successfully utilize technology and function in the course environment. Having skill with the basic uses of technology was discussed in terms of the benefit it has on instruction, such as knowing what tools are available in the course environment and their educational potential for supporting student learning.
Michigan Virtual School teachers are interested in and enjoy exploring new technologies that have potential value for virtual school environments	This practice represents a synthesis of statements made by participants which indicate an interest in exploring the potential for using a variety of web-based technologies (outside of the course environment) with the virtual school courses they teach. The interest participants had for using technology was discussed in relation to their desire to seek out and find high quality web-based tools to integrate into their instructional content. An interest in exploring technologies was also observed during the interview, as some participants expressed interest in having time to explore the medium used to conduct the interviews, Adobe Connect, for the potential value it could have for their virtual school course
Michigan Virtual School teachers are flexible with their time	The twenty-four hour-a-day nature of virtual school courses makes being flexible an implied characteristic of a successful virtual school teacher. The extent to which flexibility was observed is worth noting and including in the list of practices. Participants were not only willing to schedule a series of two interview sessions, but in some cases rescheduled the pre-set interviews multiple times because of last minute technical problems they or the researchers experienced or unanticipated scheduling conflict. The researchers’ observation of ‘flexibility’ was further supported by statements supporting other practices, such as the willingness of virtual school teachers to ‘go the extra mile’ to support students at times when students and/or parents were available.
Michigan Virtual School teachers have a deep understanding of the varying learning styles of their students	This practice represents a synthesis of statements made by participants that identify the need for considering the student population enrolled in a virtual school course. Michigan Virtual School teachers combined this with the knowledge and nature of the content to guide decisions regarding how information was presented. Understanding the learning styles of students was discussed by participants as a means for ensuring the virtual school course is accessible to students with varying learning styles, as well as offering them the greatest opportunity to be successful.
Michigan Virtual School teachers establish a presence in the course to motivate students	This practice represents a synthesis of statements made by participants that discuss the motivational aspect of establishing presence in a virtual school course. Logging into the course environment regularly, providing quick replies to student inquiries and being active in the discussion board was identified as a way of maintaining student engagement, as well as motivating them to complete the course.
Michigan Virtual School teachers have good organizational skills	This practice represents a synthesis of statements made by participants that refer to organizational characteristics as important for being a good virtual school teacher. Personal and instructional organization was addressed by participants as a foundational element for administering and maintaining virtual school courses.

Michigan Virtual School teachers use student and course data, as well as other sources of information available to them to self evaluate the pedagogical strategies they use	This practice represents a synthesis of statements made by participants that address the need for virtual school teachers to constantly evaluate the instructional strategies they are using. The need for this type of self-evaluation was discussed in terms of the benefits analyzing the relationship between the mode of content delivery, characteristics of enrolled students, and types of assessment strategies used has for optimizing students' content knowledge acquisition.
Michigan Virtual School teachers have extensive knowledge of and appreciation for the content area they teach	This practice represents a synthesis of statements made by participants that indicate the value of extensive content knowledge. The value of extensive content knowledge was discussed in terms of its implicit value for answering students' content based questions, as well as directing the types of pedagogical strategies they used to support student learning.
Michigan Virtual School teachers understand the impact of course pacing on course design and the pedagogical strategies they use	This practice represents a synthesis of statements made by participants that address the relationship between course pacing and the selection of appropriate pedagogical strategies. The importance of understanding this relationship was discussed in terms of the expectations participants had for students' use of the discussion board, as well as emphasis placed on one-on-one instruction and teacher-student vs. student-student interaction.
Michigan Virtual School teachers continually extend their content and technological knowledge	This practice represents a synthesis of statements made by participants that address the value of keeping up to date with the curriculum and technology. Continually developing knowledge in these areas was discussed in regards to Michigan Virtual School teachers' value in being introduced to new strategies for teaching content and how that can meet the needs of diverse students enrolled in the course.
Michigan Virtual School teachers are committed to the opportunities offered by virtual high schools	This practice represents a synthesis of statements made by participants that identify the need for successful virtual school teacher to acknowledge the service virtual schools offer students, and their role in it. Acknowledging the opportunities offered by virtual high schools was discussed in terms of the importance for understanding the critical role teachers play in the helping to satisfy the legitimate need virtual school courses fill.
Classroom Management Strategies	
Michigan Virtual School teachers use strategies to address inappropriate or abusive behavior of students in public forums of the course	This practice represents a synthesis of statements made by participants that articulate the importance of addressing inappropriate behavior of students enrolled in a virtual school course. The importance of dealing with this behavior was discussed in terms maintaining a non-threatening course environment for students. Additionally, participants discussed the importance of establishing rules of conduct, and a presence in the course to prevent inappropriate or abusive behavior.
Michigan Virtual School teachers monitor venues of public communication in their course to identify students in personal crisis	This practice represents a synthesis of statements made by participants that acknowledge the emotional turbulence of high school students and the importance of being active in the course to facilitate the identification of students in need. The identification of students in crisis and what measure should be taken to ensure their well-being were included in the statements made by participants.
Pedagogical Strategies: Assessment	
Michigan Virtual School teachers use multiple strategies to assess student learning	This practice represents a synthesis of statements made by participants that identify the need for successful virtual school teacher to utilize multiple modes of assessment in their course. While all participants indicated the use of multiple strategies, there were significant differences in the types of strategies used based on the content area of the course.
Michigan Virtual School teachers use alternative assessment strategies that allow students the opportunity to represent their knowledge in ways that are personally meaningful	This practice represents a synthesis of statements made by participants that address the benefits of integrating personal representations of knowledge as a strategy for assessment. Using this type of assessment strategy was talked about in terms of the instructional benefits it offers by making content more personally relevant to students and experiences with content more concrete.

Michigan Virtual School teacher use alternative assessment strategies to accommodate the varying learning styles of their students	This practice represents a synthesis of statements made by participants that identify the value of utilizing alternative strategies for accurately assessing student content knowledge acquisition. Use of alternative assessments was discussed in regards to the opportunity they offer students to demonstrate their knowledge in a manner consistent with their learning style.
Pedagogical Strategies: Engaging Students with Content	
Michigan Virtual School teachers build in course components to reflect the interests of students enrolled in the course	This practice represents a synthesis of statements made by participants that address teachers using student interests making the course engaging for students. Integrating knowledge about students' interests was discussed in relation to the value this strategy has for facilitating engagement with the learning process and a level of enjoyment which can ultimately enhance the learning of content.
Michigan Virtual School teachers are flexible in their use of pedagogical strategies to accommodate varying learning styles	This practice represents a synthesis of statements made by participants that address the need for teachers to use student-centered pedagogical practices. Utilizing student-centered practices was identified as a means for addressing the various learning styles of students enrolled in the course, and meeting their instructional needs.
Michigan Virtual School teachers establish strong relationships with mentors	This practice represents a synthesis of statements made by participants that address the important role of mentors in supporting student learning. Forming strong relationships with on-site mentors was identified as a critical factor for facilitating student learning by ensuring they have the on-site support needed to be successful.
Michigan Virtual School teachers use multiple strategies to form relationships that support rich interactions with students	This practice represents a synthesis of statements made by participants that address the need to form strong relationships students enrolled in their virtual school course. Establishing and nurturing these relationships with students was discussed in terms of the impact it has on the quality of interaction in the course, as well as the formation of community.
Michigan Virtual School teachers motivate students by clearly organizing and structuring content	This practice represents a synthesis of statements made by participants that emphasized the need for courses to implement effective strategies of instructional design. Participants talked about the importance of content based instructional design in relation to effectively meeting the needs of students, as well as providing a motivational element to support course completion.
Michigan Virtual School teachers embed deadlines within the content structure to motivate students in self paced courses to complete course requirements	This practice represents a synthesis of statements made by participants that express the need for teachers to implement activities and deadlines within the course to propel students toward its completion. Encouraging students to actively participate in course discussions and remain on-task so they may excel in the course and meet all necessary requirements were also identified as valuable outcomes associated with this strategy.
Michigan Virtual School teachers provide students with multiple opportunities to engage content in ways that suit varying learning style.	This practice represents a synthesis of statements made by participants that describe a need to provide students with multiple opportunities for interacting with content. The integration of different mediums to deliver the same content, such as adding an audio component to a textual component, were discussed as means for encouraging students active participation in a course and maintaining their engagement with content.
Pedagogical Practices: Making Course Meaningful for Students	
Michigan Virtual School teachers use strategies to connect with students	This practice represents a synthesis of statements made by participants that emphasize the need for establishing a strong teacher-student relationship. The importance of connecting with students was discussed in terms of the positive outcomes forming these relationships has on facilitating student interest. This connection establishes a foundation that demonstrates a commitment to student success.

Michigan Virtual School teachers engage students in conversations about content and non-content related topics to form a relationship with each student	This practice represents a synthesis of statements made by participants that affirm the need to demonstrate interest in students' out-of-course lives. Forming an understanding for students' out-of-school lives was discussed in relation to the instructional opportunities such knowledge offers teachers for making the course personally meaningful to students, as well as providing a means for communicating their vested interest in the course.
Michigan Virtual School teachers encourage and support communication between students	This practice represents a synthesis of statements made by participants that indicate the value of encouraging student-student communication in a course. The value of encouraging these relationships was discussed in terms of the social climate that forms as a result and the opportunities offered by establishing a community of learners.
Michigan Virtual School teachers seek out and make available a variety of supplemental support tools to meet the diverse needs of students	This practice represents a synthesis of statements made by participants that discuss the importance of teachers recognizing the range of learning needs of students enrolled in their virtual school course. Participants discussed the need for identifying and integrating appropriate supplemental materials to support student success.
Michigan Virtual School teachers seek out and make available a variety of supplemental support tools to meet the diverse needs of students	This practice represents a synthesis of statements made by participants that discuss the importance of teachers recognizing the range of learning needs of students enrolled in their virtual school course. Participants discussed the need for identifying and integrating appropriate supplemental materials to support student success.
Pedagogical Strategies: Providing Support	
Michigan Virtual School teachers monitor student progress closely and interact with students to determine where gaps in knowledge may exist.	This practice represents a synthesis of statements made by participants that discuss methods for determining when a gap in student knowledge exists. This was addressed by participants in relation to the strategies used to identify gaps in students' prior content knowledge and methods for remediation of that knowledge.
Pedagogical Strategies: Communication & Community	
Michigan Virtual School teachers facilitate the formation of community by encouraging content and non-content related conversations among students	This practice represents a synthesis of statements made by participants that identify the importance of providing students with a space in the discussion board to support the formation of connections between students. Forming a social community was discussed in relation to the value student-student connections have for providing additional venues of support.
Michigan Virtual School teachers interact with students using multiple channels of communication (telephone, IM, etc) provide support	This practice represents a synthesis of statements made by participants that identify the multiple tools used to support student-teacher communication. These communication tools were discussed in relation to their facilitation of a climate promoting open communication between teacher and student to support discussion and provide support.
Michigan Virtual School teachers provide students with quick feedback to maintain their motivation for completing the course	This practice represents a synthesis of statements made by participants that discuss the importance of providing feedback. Providing students with prompt, meaningful feedback was discussed in relation to instructional outcomes and the positive impact it has on student motivation and engagement with the course.
Michigan Virtual School teachers model what 'formal' online communication looks like in discussion boards and emails.	This practice represents a synthesis of statements made by participants that address the need for modeling interaction in a virtual school course. Modeling interaction was identified as a critical element in teaching students about effective online communication strategies.
Michigan Virtual School teachers effectively monitor the tone and emotion of their communications with students	This practice represents a synthesis of statements made by participants that describe the need for critically considering how communications can be interpreted by students. The importance of monitoring the written communications with students was discussed in relation to the ease with which students, lacking the visual and auditory reinforcement provided by facial gestures and vocal tone, can misinterpret the contents of a message.

Technology

Michigan Virtual School teachers purposefully tie the use of tools built into the course environment to state benchmarks and standards to support student learning of content	This practice represents a synthesis of statements made by participants that address the need for integrating meaningful uses of tools to support students learning. These uses of technological tools were discussed in relation to identifying the specific academic goals using such tools will serve as well as clearly tying their use to state benchmarks.
Michigan Virtual School teachers consider issues of student access to technology when integrating web based components into their course	This practice represents a synthesis of statements made by participants that address the need to consider students access to internet and computer technology required to use specific web-based tools such as streaming media.
Michigan Virtual School teachers use their content knowledge and knowledge of students to drive the integration of technology	This practice represents a synthesis of statements made by participants that indicate the importance of making decisions regarding the use of technology based on their content knowledge and knowledge of their students. The considerations that were discussed identified various elements influencing decision-making regarding the use of technology, as well as the value it holds in relation to specific content areas.

Appendix C: iNACOL's National Standards for Quality Online Teaching

Developed by the International Association For K-12 Online Learning (iNACOL), August 2010²²

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, e-mail 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, e-mail) to monitor course progress and effectiveness.
- Creates opportunities for self-reflection or assessment of teaching effectiveness within the online environment (e.g., classroom assessment techniques, teacher evaluations, teacher peer reviews).
- Addresses multiple intelligences and levels of ability through a variety of alternative interventions such as adjusting lessons based upon re-teaching and using varied assessment strategies.
- Provides evidence of effective learning strategies that worked for the individual student and details specific changes in future instruction based upon assessment results and research study (data-driven and research-based).
- Evaluates instructional strategies to determine their accuracy and usefulness for presenting specific ideas and concepts.

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: Virtual schools in North Carolina

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Virtual school, real results

By Terry L. Stoops

Late last year, U.S. Secretary of Education Arne Duncan urged state lawmakers to find ways to improve educational productivity despite economic conditions that will continue to limit funding available to public schools. One of the key strategies outlined by Secretary Duncan was making better use of online learning and virtual schools, which allow qualified instructors to deliver lectures, content, and assessments using web-based communication tools. North Carolinians are fortunate to have one of the largest and most successful virtual schools in the nation.

The North Carolina Virtual Public School (NCVPS) is a model of excellence, but it has not always been that way. Shortly after its launch in the summer of 2007, the school was in trouble. The director of the NCVPS resigned in June and the interim director soon reported problems with “stabilizing the infrastructure” and concerns about teacher quality. In September 2007, the NC Superintendent of Public Instruction sent a memo to all school systems in the state, urging patience for those who “experienced some frustration with the operational side of the NC Virtual Public School program.” Among other concerns, Superintendent Atkinson pointed out that the virtual school did not offer courses that some students signed up to take. In other cases, the state had to employ out-of-state providers to meet the demand for popular courses.

Three years ago, Dr. Bryan Setser became the executive director of the NCVPS, and today, North Carolina’s virtual high school is one of the state’s most efficient, transparent, and successful educational programs. The growth of the program under Dr. Setser’s leadership has been remarkable. Between the 2008-2009 and 2009-2010 school years, the online school enjoyed a 369 percent increase in course enrollments. According to a recent report by the Evergreen Education Group, the NCVPS has the second highest number of course enrollments of any state-operated virtual school. North Carolina’s virtual course enrollments will reach an estimated 74,000 this year, which is a distant second to Florida’s 214,000 but will far outnumber Alabama’s 31,000 course enrollments, the third highest total in the nation.

Aside from course availability, individualized instruction accounts for much of the popularity of the virtual school model. In conventional classrooms, teachers often try to adapt lessons to meet the needs of students with different ability levels (called differentiated instruction). Yet, public school teachers often struggle to replicate the kind of self-paced instructional environment unique to the online learning environment. Virtual schools allow students to review difficult material slowly and deliberately. Similarly, they may spend less time on content already mastered.

Studies that examine the costs associated with online learning generally find that virtual schools reduce the burden on taxpayers. A survey of the directors of twenty virtual schools in fourteen states found that the average annual cost for a full-time online student was \$4,310 in 2008, while the U.S. average per-pupil expenditure in public schools was over \$9,000. In the study, only one state virtual school program had a cost exceeding its state average. Other estimates place online programs as high as \$8,300 per student per year, but even this higher figure is less than the national average expenditure. A recent study of the Florida Virtual School concluded that the state saves \$1,048 per student (capital costs excluded) when they enroll in the state’s online school. For the 2006-2007 school year, the virtual school cost taxpayers an estimated 20 percent less per student, compared to the cost of funding a traditional classroom setting.

North Carolina Virtual Public School officials acknowledge that the current recession has made calculating costs savings an extremely difficult task. To complicate matters, the volatility of the national and state economies continues to limit the amount of state revenue dedicated to programs like the virtual school, thereby artificially deflating access to online learning. The total NCVPS budget for FY 2011 is just over \$20 million, a bargain compared to the cost of offering the same courses in a brick and mortar school. This does not include other areas that have the potential to save millions of taxpayer dollars, including online professional development, tutoring, Advanced Placement, and elective courses.

Education secretary Arne Duncan acknowledges that the idea of replacing traditional face-to-face instruction with an online education model upsets advocacy organizations and other supporters of the status quo. But in an era when schools, districts, and states must do more with less, extensive virtual schooling can no longer exist as an accessory. It has become a necessity.

End Notes

1. For a good overview of the research on teacher quality and credentials, see Jay P. Greene, *Education Myths: What Special Interest Groups Want You to Believe About Our Schools--and Why It Isn't So* (New York: Rowman & Littlefield, 2006), pp. 59-70.
2. For the purposes of this analysis, I use “certification” and “licensure” interchangeably.
3. Southern Regional Education Board (SREB), “Five Academic Reasons Why State Virtual Schools are Important to Your State,” October 2007, publications.sreb.org/2007/07T07_Five_acad_reas.pdf.
4. Clayton M. Christensen, Michael B. Horn, and Curtis W. Johnson, *Disrupting Class: How Disruptive Innovation Will Change the Way the World Learns* (New York: McGraw Hill, 2008), pp. 83-84.
5. National Council on Teacher Quality, “2010 State Teacher Policy Yearbook,” 2010, www.nctq.org/stpy09/searchResults.jsp?topicId=3. States that require incoming teachers to take a licensure test include Alabama, Alaska, Idaho, Massachusetts, Minnesota, New Jersey, New York, North Dakota, Ohio, Pennsylvania, South Dakota, Texas, Utah, Washington, and Wisconsin. Nine states permit teachers to obtain state certification with “no strings attached,” 41 states require applicants to submit transcripts, and 14 states have recency requirements. The term “no strings attached” is somewhat misleading because “no strings” states like North Carolina may require teachers to pass one or more Praxis tests. Moreover, these states require incoming teachers to submit paperwork and a processing fee to the state for review. Other “no strings attached” states include Alabama, Delaware, New York, Rhode Island, Texas, Washington, West Virginia, and Wyoming.
6. *Ibid.*, pp. 33-34.
7. In *Liberating Learning: Technology, Politics, and the Future of American Education* (New York: Jossey-Bass, 2009), Terry Moe and John Chubb argue that computer technology has the potential to revolutionize public education, including the power structure content to perpetuate the status quo. Christensen et al. suggest that the power structure has already created barriers to the development of online learning. It becomes a chicken-and-egg problem. What needs to come first in order to produce change in our K-12 education system, the removal of regulatory barriers or the adoption of technology-based learning?
8. William R. Thomas, “Online Teachers: What Can SREB States Do to Ensure Competence and Quality?” Southern Regional Education Board, December 2008, publications.sreb.org/2008/08T04_Online_Teacher_Comp.pdf.
9. SREB, “Standards for Quality Online Teaching,” August 2006, publications.sreb.org/2006/06T02_Standards_Online_Teaching.pdf.
10. *Ibid.*, pp. 2-8.
11. Heather Staker, “The Rise of K-12 Blended Learning: Profiles of Emerging Models,” Innosight Institute, May 2011, p. 63, www.innosightinstitute.org/blended_learning_models.
12. *Ibid.*, p. 168.
13. See www.khanacademy.org.
14. See www.khanacademy.org/about/faq.
15. For example, see National Forum on Education Statistics, “Forum Guide to Elementary/Secondary Virtual Education (NFES 2006–803),” Washington, DC: National Center for Education Statistics, 2006. “Like all schools, the local high school had to report the number of ‘highly qualified’ teachers who instructed their students. This status was based in part on state-certification, which required teachers to have completed a state history course in college. Administrators wondered how the school’s virtual service providers could be expected to have taken such a course if they lived in other states. Inquiries to the state education agency revealed that other schools were facing the same issue but, in the absence of waivers, virtual school staff could not be granted ‘highly qualified’ status without the certification.” (p. 41)
16. Meredith DiPietro, Richard E. Ferdig, Erik W. Black, and Megan Preston, “Best practices in teaching K-12 online: Lessons learned from Michigan Virtual School teachers,” *Journal of Interactive Online Learning* 7:1, Spring 2008, pp. 10-35.
17. SREB, “Standards for Quality Online Teaching”; iNACOL, “National Standards for Quality Online Teaching,” August 2010, www.inacol.org/research/nationalstandards/index.php.
18. John Watson, Amy Murin, Lauren Vashaw, Butch Gemin, and Chris Rapp, “Keeping Pace with K-12 Online Learning: An Annual Review of Policy and Practice,” Evergreen Education Group, 2010, pp. 23-24, kpk12.com/reports/graphics. Information on certification requirements was obtained by visiting each virtual school website.
19. Special circumstances may require a waiver of this requirement.
20. Virtual courses may be brokered with content providers who provide highly qualified teachers.
21. DiPietro et al., “Best practices in teaching K-12 online: Lessons learned from Michigan Virtual School teachers,” Table 1: Overview of the findings, pp. 16-27.
22. iNACOL, “National Standards for Quality Online Teaching,” pp. 3-10.
23. See www.newsobserver.com/2011/01/15/921251/virtual-school-real-results.html.