Learning Virtually: Expanding Opportunities

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2008 Stakeholder Advisory Committee and Roundtable Participants

Kevin Alansky, Blackboard
Michael Aubin, Thinkfinity
Crystal Brown, e-Luminate Group, Inc.
Nancy Carey, Maryland
Bob Cole, Maryland
Tera Daniels, SETDA
Martha Donaldson, Alabama
Charles Fadel, Cisco
Geoff Fletcher, 1105 Media
Ann Flynn, NSBA
Jennifer Fritschi, Verizon Foundation
Christine Fox, SETDA
Kathleen Fulton, NCTAF
Rick Gaisford, Utah
Anita Givens, Texas
Julie Gottesman, Blackboard
Sara Hall, SETDA
Wayne Hartschuh, Delaware
Todd Hitchcock, Pearson
Kathy Hurley, Pearson Foundation
Diane Jackson, ASCD
Rachel Jones, SETDA
Jean Ku, Blackboard
Susan Lowes, Columbia University
Jeff Mao, Maine
Jayne Moore, Maryland
Mark Nieker, Pearson Foundation
Lan Neugent, Virginia
John O'Connell, Iowa
Sandy O'Neil, New Jersey
Liz Pape, VHS
Cathy Poplin, Arizona
Allison Powell, NACOL
Melanie Pritchett, Compass Learning
Mickey Revenaugh, Connections Academy
Mark Schneiderman, SIIA
Bill Tucker, Education Sector
Bruce Umpstead, Michigan
Carla Wade, Oregon
John Watson, Evergreen Associates
Mary Ann Wolf, SETDA
Jessie Wooley-Wilson, Blackboard

Effective Professional Development, Virtually

This paper focuses on students and does not discuss the many positive benefits for teachers when engaging in professional development through online communities, online courseware, and education portals. For more information on professional development, visit SETDA's White Paper: Empowering Teachers: A Professional and Collaborative Approach at http://www.setda.org/2020/professional-development.

The State Educational Technology Directors Association (SETDA) is a non-profit, educational association for state technology directors. This paper is part of a Series: Class of 2020 Action Plan for Education. For more information please visit www.setda.org.

Executive Summary

All students should be able to have continuous access to the high quality curriculum from the classroom to the family room to the community center—regardless of socioeconomic or geographic barriers. Virtual learning is a tool that can do just this. Virtual learning provides each student the promise of access to age- and ability-appropriate curriculum, rich and extensive resources and accurate and up-to-date assessments regardless of location, economic situation or time. Virtual learning can supplement the traditional bricks and mortar classroom to enhance teaching and learning by creating opportunities for students and teachers to individualize instruction based upon specific learning styles—ultimately giving students resources for just-what-I need learning. When effectively used, virtual learning allows for student-centered, self-directed, self-paced learning. Virtual learning also has the potential to engage students in ways that traditional learning does not. In the 21st Century, students utilize technology on a daily basis and learning in an environment that students are familiar with fosters creativity and encourages 21st Century skills.

Virtual learning is not a "silver bullet" nor a "one size fits all" to solve all our educational issues, but it can provide great benefits to our students. Virtual learning supports students' access to:

- **Online Courses** for all students to take honors and Advanced Placement classes
- **Highly Qualified Teachers** certified in critical areas – science, technology, engineering, mathematics, and foreign language even in places with teacher shortages.
- **Flexible Learning Opportunities** to allow students to get beyond their physical location and/or limitations to access a variety of courses and teachers, encouraging self-directed, self-paced learning.
- **Credit Recovery/Remediation** for students who did not pass a particular class required for graduation.

This paper highlights some of the current trends in virtual learning, identifies some of the current challenges and provides key recommendations for enhancing virtual learning opportunities for our students.

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Current Trends in Virtual Learning

States and districts are experiencing the following trends in virtual learning:

Virtual Learning at the State Level

- Currently, 44 states have virtual learning programs.[1]
- In 2008, Alabama added a distance learning requirement for graduation, requiring students to successfully complete one online/technology-enhanced course.
- In 2008, Florida enacted a new state law requiring school districts to create full-time virtual schools for K-8.
- In 2006, Michigan became the first state to require students to participate in a virtual learning experience for high school graduation.

Virtual Learning Access to Courses

- During 2004-05, 37% of school districts provided students with access to distance education.[2]
- High schools offered virtual learning opportunities more often than middle and elementary schools.[3]
- 57% of public secondary schools provided access to students for online learning.[4]

Virtual Learning Infrastructure Access

- In 2004-05, school districts surveyed report that 86% of students participating in virtual learning access courses from school and 59% access courses from home.[5]
- For students accessing courses from home:
  - 19% of school districts paid for a computer for all students and another 10% of districts provided a computer for some students.
  - 18% of school districts paid for Internet service for all students and an additional 9% paid for some students.
  - 8% of school districts paid for software and/or phone service to connect to the Internet for all students and an additional 2% paid for some students.[6]

Virtual Learning Enrollments

- During 2004-05, 10% of all public schools in the country had students enrolled in technology-based distance education courses.[7]
- Enrollments in virtual learning increased 60% from 2002-03 to 2004-05, for a total of 506,950 students.[8]
- In 2006, enrollments increased another 38% and reached 700,000 students.[9]
- 61% of virtual learning enrollments are at the high school level.[10]

Virtual Learning Research

- The Virtual High School (VHS) Advanced Placement research shows that on average students perform equally well or better in online learning.[11]
- Researchers found no significant differences between students engaged in online learning versus traditional teaching or students engaged in video-conferencing versus traditional teaching.[12]
- The Virtual High School (VHS) Advanced Placement exam pass rate exceeds the national AP exam pass rate.[13]
- FLVS students performed higher than the state average in both reading and math[14]

Virtual Learning — No One Size Fits All

Virtual learning is not a "silver bullet" nor a "one size fits all" for our students. Although some students may be enrolled in a full-time virtual program, many more students take courses to supplement their traditional learning. Like any model of learning, virtual learning is not for everyone, but neither is an all lecture or all kinesthetic environment. Depending upon geographic location, virtual learning may provide students access to courses that they would otherwise not have. Virtual learning provides students with the opportunity to expand their learning beyond the traditional classroom and to find the best learning environment for them. Some of the many virtual learning options include:

- Taking one or more classes online with a virtual teacher.
- Taking one or more classes online with a virtual teacher with supplemental face-to-face instruction.
- Taking a course that includes face-to-face instruction two days per week and online instruction three days per week.
- Engaging in online tutoring.

According to the recent book, Disrupting Class by Christensen, Horn, and Johnson, offering online courses to students that do not have access to the Internet is a major disruptive technology that would allow for radical transformations in education to occur in a rational, incremental way.

"There is power in our communities to effect change. By disrupting the classroom as we know it, we can break apart the fundamental obstacles with which educators, parents, and students have struggled for so many years. These technologies and organizational innovations are not threats. They are exciting opportunities to make learning intrinsically motivating, that make teaching professionally rewarding, and that transform our schools from being economic and political liabilities to sources of solutions and strength."[15]

Virtual Learning Models

The following models highlight some of the vast array of virtual learning options being used across the country today.

Alabama Connecting Classrooms, Educators, and Students Statewide (ACCESS) — http://accessdl.state.al.us/

ACCESS Distance Learning is a statewide, school-based program that is free to Alabama students in Grades 9-12. The initiative focuses on bringing true equity in

instructional opportunities to all Alabama high school students by providing access to Advanced Placement, dual credit, and core courses, as well as electives, remedial and enrichment materials, and other courses necessary to meet advanced diploma requirements. Courses are taught by certified and highly qualified teachers, aligned to state standards, and delivered through online media using a Web-based system or via interactive video-conferencing (IVC) technology. In the fall of 2008, ACCESS began utilizing a blended model of course delivery that incorporates both face-to-face and Web-based components. In addition to courses, ACCESS funding provides three regional support centers across the state, a 21st Century Classroom for each Alabama high school, and a statewide technical infrastructure. ACCESS also provides courses to homebound students, delivers online professional development for teachers, and provides access to multimedia resources to be used in instruction. From summer 2007 through spring 2008, ACCESS had 18,955 student enrollments, employed 362 part-time teachers, offered 54 online courses and 5 remediation modules for the Alabama High School Graduation Exam, and provided a variety of interactive video-conferencing courses.

Arizona Connections Academy — http://www.connectionsacademy.com/state/home.asp?schoolCode=aca

The Arizona Connections Academy (ACA) is one of many full-time virtual schools in the Connections Academy family. ACA opened in 2003 as a public charter virtual pilot school that was approved by the Arizona State Board for Charter Schools to serve grades K–12. ACA provides a free public school curriculum outside the walls of a traditional classroom, where students engage in virtual learning. ACA accepts students from anywhere in the state and requires that teachers are Arizona-certified. ACA provides students with textbooks and other curriculum materials, online resources, and a computer, printer and subsidy for Internet service. Students are required to take all state mandated, standardized tests in person at locations designated by the school. Current enrollment is 4,000 students in grades K-12. Parent involvement is a key component of ACA and in a recent survey, 91% of all parents surveyed gave the program high ratings.

An ACA high school student didn't enjoy traditional school and had difficulty sitting in the classroom because of his ADHD. He enrolled in the ACA and discovered that online learning better suited his individual learning needs. He is graduating this year from ACA and planning to attend Arizona State University. "I had so much flexibility with my schedule that I could choose the assignments I wanted to do at any time"

Chicago Virtual Charter School — http://www.k12.com/cvcs/

The Chicago Virtual Charter School utilizes a blended virtual learning approach where students attend classes at least one day per week, but primarily engage in online learning. Generally, the online teacher and face-to-face teacher is the same person, providing continuity for students. During classroom sessions, teachers identify areas where students need further explanation of concepts presented during the online sessions. Students work at their own pace for most subject areas; however students that are one or more grade levels behind in a given subject are required to attend class at the learning center for tutorial work at least an additional half day per week.

Florida Virtual School — http://www.flvs.net/

Florida Virtual School (FLVS), founded in 1997, was the first statewide Internet-based public high school in the country. FLVS provides middle and high school students both in Florida and out-of-state with more than 90 courses, including honors, and Advanced Placement courses. FLVS is accredited by the Southern Association of Colleges and Schools. FLVS employs 530 full-time and 29 adjunct teachers who all have a Florida teaching certificate and are subject certified. FLVS served over 63,675 students.

FLVS is the only public school with funding tied directly to student performance.
—Florida Virtual Schools

At the Florida Virtual School, students can decide what month of the year they want to start, what time of day they want to learn and where they want to learn. At FLVS, students work with their teachers to determine the pace of learning - accelerated, average or extended - that will best help them succeed. Since FLVS uses a mastery based approach to learning, establishing pace of learning between the student and teacher is key. Students also have the option to decide the best way to demonstrate their learning – podcast, website creation, or PowerPoint presentation to name a few options. (www.flvs.net)

Idaho Digital Learning Academy — http://idahodigitallearning.org/webapps/portal/frameset.jsp

The Idaho Digital Learning Academy, created by the Idaho state legislature, is an accredited, online virtual school for grades 7-12. IDLA supplements the availability of courses at the local school level. IDLA's mission is to provide all students – traditional, home schooled, at-risk, and gifted – with greater access to courses and highly qualified teachers. IDLA is aligned with state standards and 87% of school districts participate in IDLA.

Students report that some of the reasons for taking courses at IDLA include:

- Schedule conflicts (21%)
- Course not offered locally (19%)
- Credit recovery (18%)
- AP/dual credit (6%)
- Early graduation (5%)[16]

Michigan Virtual School — http://www.mivhs.org/

The Michigan Virtual School™ provides high school and middle school students with a variety of course options that they wouldn't otherwise have access to. All courses are taught by certified teachers, and students can learn anywhere, anytime. MVS works with local schools to supplement availability of courses and does not directly grant credits or diplomas. MVS is state funded and operated by the Michigan Virtual University ®, a private, nonprofit corporation.

Some of the benefits of learning virtually include:

- Access to courses not available locally,
- Time and cost savings by not commuting,
- Flexibility in pace of learning,
- Increased student-to-student communication, and
- Opportunity to learn technology skills.

Ohio Virtual Academy (OHVA) — http://www.k12.com/ohva/

The Ohio Virtual Academy (OHVA) is one of many full-time virtual schools in the K12 family. OHVA provides students with a computer and a stipend for Internet access. Students work one-on-one with teachers in a synchronous environment. Students connect with other students virtually through online discussions, clubs, and competitions. Teachers interact with students and families through email, conference calls, and assessment reviews. Throughout the year administrators, teachers, students, and parents may meet in-person at school activities.

Virtual High School — http://www.govhs.org/Pages/Welcome-Home

Virtual High School (VHS) works collaboratively with high schools developing and delivering standards-based, student-centered online courses and offering professional development to teachers. Through the VHS, schools are able to expand the courses offered to their students. VHS reports that students in the virtual learning environment feel more comfortable expressing themselves in online VHS class discussions, "where disability, social status, racial and even gender differences are not as evident as they would be in a traditional classroom."[17]

In Ware County, Georgia, student Eddie Murray was at risk of dropping out of school during his junior year but realized that academics were going to be his only way out of a tumultuous home situation. Eddie was working an average of 34-36 hours a week, so a traditional high school approach would not work for him. Eddie enrolled in six online classes through the VHS and subsequently graduated with honors from Ware County High School (www.goVHS.org).

Why Virtual Learning is Important

Virtual learning programs can provide vast opportunities for students and teachers that may not otherwise be available. Virtual learning can supplement the bricks and mortar school approach to enhance learning and promote 24-7 access, supporting the notion of life-long learning. Virtual learning supports:

1. Equity and Access for All Students
2. Highly Qualified Teachers
3. Flexible Learning Opportunities
4. Credit Recovery/Remediation

1. Equity and Access for All Students

Virtual learning provides all students access to high quality curriculum regardless of socioeconomic or geographic barriers. For students in high schools that don't offer Chemistry or Calculus or Spanish IV, virtual learning provides the opportunity to enroll in these classes online. Some recent statistics supporting the need for virtual learning to increase equity and access are:

- 40% of high schools do not offer a full college preparatory curriculum.[18]
- 80% of school districts report offering distance learning because courses were not available[19]
- 25% of districts with virtual learning report that students were enrolled in AP classes.[20]
- 40% of districts with virtual learning opportunities report that students were enrolled in dual credit college-level courses.[21]

2. Highly Qualified Teachers

Many schools lack highly qualified teachers in critical subject areas. Only 60% of public school math teachers teaching math in grades 7-12 majored in math in college.[22] Two-thirds of students taking physical science classes do not have teachers who majored in physical sciences in college or who are certified to teach physical sciences.[23] In addition, many schools also face teacher shortages especially in

specific content areas, such as science, math, and foreign language. In the next 10 years, experts predict that we will need more than 2 million new teachers.[24] Virtual learning programs provide students the opportunity to access courses in core subject areas taught by highly qualified teachers.

3. Flexible Learning Opportunities

Virtual learning encourages self-directed, self-paced learning and allows students to take ownership of their learning and make choices about their learning environment and the type of instruction. In student-centered environments, students make informed decisions about their education. Imagine the autistic child that struggles in a traditional classroom because of social issues, but can thrive in a virtual learning environment where he can work at his own pace and the teacher can easily meet his unique learning needs. Whether it is a child who needs enrichment, or a quiet child that doesn't engage in the traditional classroom setting, in a virtual learning environment, all students have the opportunity to succeed. Virtual learning also provides options for high school students who are working full-time, for incarcerated students, and for students who are homebound with health issues.

4. Credit-Recovery/Remediation

Virtual learning provides additional opportunities for credit-recovery and remediation for students struggling in school. Instead of learning in the traditional classroom, where students were unsuccessful, students can participate in a virtual learning environment, engaging in anytime, anywhere learning. Through virtual credit recovery options, many students are able to catch-up and graduate on-time with their peers. Virtual credit recovery programs help students who need to work during the summer and go to summer school. Virtual credit recovery programs enable students who must work to support their families, yet have failed classes they need for graduation, to re-take those classes. Virtual credit recovery programs can also help student dropouts return to school.

Students scoring below proficient enter the PACE program — mandatory synchronous sessions with a teacher over a few months. As a result, students increased test scores by 10%.[26]

Nearly 20% of students enrolled in Florida Virtual Schools are seeking credit recovery[25]

In Lubbock Independent School District in Texas, all credit recovery and credit acceleration courses are online. Since the start of the online credit recovery program, graduation rates have increased.

—Blackboard

Challenges and Key Recommendations

This section describes some of the current challenges with virtual learning and key recommendations for addressing these challenges.

1. Funding
2. Teacher Licensure
3. Online Instructional Methods
4. Infrastructure
5. Quality Control and Oversight

1. Funding

Challenges

The traditional school funding models of property taxes based on geography are not adequate to address the opportunities provided by virtual learning. The opportunity to have students and teachers located anywhere are not accounted for in these traditional school funding models. Current funding for virtual learning models differs significantly across state and district lines, and many states and districts have not addressed how to provide funding for both traditional brick and mortar schools and virtual learning programs.

As traditional brick and mortar schools lose students to virtual schools for some or all coursework, they also lose funding associated with those students. In some ways, virtual schools provide some cost savings to schools and districts because they lack the physical infrastructure costs of traditional schools. And, for the home district or school, variable expenses such as teachers and curriculum decrease accordingly with the loss of students. However, virtual schools still have technology infrastructure, teacher, and curriculum costs. Further, fixed costs for the schools and districts losing students for things such as the building, maintenance and utilities remain constant despite the lower student enrollment. Average daily attendance or student enrollment-based funding models do not generally allow for sub-dividing student funding based on types of cost to deal with these issues.

Current Progress

Some states such as Florida and Minnesota utilize funding models where the money stays with the student whether they are in a traditional school or virtual school.

Recommendation

- States and school districts should create innovative funding models that meet the needs of both traditional schools and virtual schools.

2. Teacher Licensure

Challenges

Typically, teacher licensure decisions are made at the state level. Some states do not have reciprocity with other states for teacher certification and will not accept teachers from other states for credit courses. With the growth in virtual learning, where learning can occur across state lines with students from one state taking courses from a virtual school in another state, questions of teacher licensure, present problems for states, school districts, schools, teachers, and students.

Current Progress

The National Education Association's (NEA) policy on distance education and teacher licensure states that it should be acceptable for a teacher licensed in any state in the subject matter being taught to provide distance education to elementary/secondary school students.[27] The Virtual High School addresses the problem of teacher licensure by enabling administrators to provide credits for courses, so that their teachers do not have to be certified in multiple states. Some members of the educational community are discussing the possibility of a national certification for virtual teachers.

Recommendation

- Encourage states to recognize teacher licenses and certifications from other states.

3. Online Instructional Methods

Challenges

Many elements of teaching virtual courses differ from teaching traditional face-to-face courses. Teachers need training around how to set expectations, monitor, provide feedback, assist and assess students in a virtual setting. Similarly, the student experience of taking a virtual course can be very different than that of traditional courses. Students need assistance in developing self-management skills and identifying resources during the learning process. While virtual learning places an emphasis on the final product, it is important to ensure that the research skills, collaborative communication and the process of drafting iterative drafts are acknowledged and supported. As the number of students and teachers participating in virtual learning increases, little research has been conducted highlighting the most effective methods of instructional design, online teaching strategies, and delivery of instruction so as to maximize the efficacy of the courses.

Current Progress

In 2004-05, 58% of districts surveyed report that asynchronous (on-demand) Internet instruction was the primary mode of delivery for virtual learning courses followed closely by two-way interactive video.[28]

Recommendation

- Provide high quality professional development for educators teaching virtual learning courses.

- Provide students with online resource as well as access to local teacher support for non-content issues like time management, collaboration and self-editing.

- Encourage states and school districts to conduct research demonstrating effective online teaching strategies and methodologies and delivery of instruction.

4. Infrastructure

Challenges

In order to participate in virtual learning, students need:

- Broadband Access — see SETDA's White Paper: High-Speed Broadband Access for All Kids: Breaking through the Barriers at http://www.setda.org/2020/broadband
- Computers
- Applications

Current Progress

Broadband services are available to approximately 80-92% of households.[29] However, adoption of broadband – actually subscribing to the service – is much lower. Lower adoption rates are attributable to economic and demographic conditions, such as household income, education, and income inequality.[30] Rural areas often have more limited access to broadband than other areas in the country. The digital divide remains a significant obstacle to overcome when providing access to virtual learning opportunities for all students.

Recommendation

- States and schools districts should provide the necessary resources so that students have the infrastructure necessary to access virtual learning opportunities.

5. Quality Control and Oversight

Challenges

As more and more students participate in virtual learning environments, questions about teacher quality, online content and rigor arise. Although standards exist, such as NACOL's National Standards of Quality for Online Courses and National Standards for Quality Online Teaching, oversight of virtual learning can often be a valuable tool that states and school districts can utilize to ensure and demonstrate the quality of virtual learning programs.

Current Progress

One of the key findings in the recent "Keeping Pace with K-12 Online Learning" report was that oversight of online programs is increasing, particularly full-time virtual learning programs.[31] Policymakers are increasingly looking at how virtual programs are funded, the quality of online content, and how these programs fit with existing laws and regulations.[32] In the last year, three states conducted audits of full-time online programs: Colorado, Idaho, and Kansas. In response to audit findings, the Colorado Department of Education created a division within the state education department to oversee online programs, the creation of standards to define the quality of online programs, and a requirement that all online programs report annually to the state.

Recommendation

- As virtual learning programs continue to grow, states and school districts need to provide the appropriate level of oversight and transparency necessary to assure the general public that virtual learning provides a rigorous, viable learning option for all our students.

Conclusion

Virtual learning provides great opportunities for all students and is a key component of what our students need to get the 21st Century education they deserve. Virtual learning provides students' equity and access to core subject courses and highly qualified teachers. Virtual learning provides flexible learning opportunities where students can individualize their own learning and collaborate with other students. Whether it is the student taking an online Calculus class from a certified math teacher or the student enrolled in a credit recovery course, virtual learning provides learning options for our students.

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