2012

Online Learning

Michael K. Barbour
Sacred Heart University

Richard E. Ferdig
Kent State University

Recommended Citation

Barbour, M. K., & Ferdig, R. E. (2012). Online learning. In S. McLeod & C. Lehmann (Eds.). *What school leaders need to know about digital technologies and social media*. San Francisco: Jossey-Bass.

Barbour, M. K. & Ferdig, R. (2011). Online learning (virtual schools). In S. McLeod & C. Lehmann (Eds.), *What school leaders need to know about digital technologies and social media* (pp. 53-66). San Francisco, CA: Jossey-Bass.

Final draft before copyediting

What school leaders need to know about K-12 virtual schools

Michael Barbour
Wayne State University

Richard E. Ferdig
Kent State University

Abstract: K-12 Online Learning has exponentially grown in the last 15 years. An estimated 1.2 million K-12 students took online classes last year; 45 states currently have some form of online learning at the state-level; and some states mandate some sort of online experience prior to high school graduation. Given its dramatic growth and ubiquity in K-12 schooling, it is critical that administrators learn more about K-12 schooling and the role it may play in their district or building. Unfortunately, there is not one single model of K-12 online schooling. Therefore, there is not one suggested set of recommendations, learnings, or best practices administrators should pay attention to. The purpose of this chapter is to introduce administrators to some of the more generic models of K-12 virtual schooling, the new roles that are created with this innovative form of teaching and learning, and any research that might impact decision-making at the building or district levels.

Introduction

Distance education at the K-12 level can take many forms. It ranges from the traditional print-based correspondence courses to instruction delivered through radio, television, satellite, or over the Internet (Clark, 2007). In this chapter, we will focus on both K-12 online learning and the virtual schools that offer instruction through online or blended formats.

The development of virtual schooling began in 1991, with a private school in California. However, it was the development of statewide initiatives that really drove the initial growth of K-12 virtual schools. In 1994, the State of Utah created the Utah e-School, which primarily focused on correspondence course but also included some online offerings (Clark, 2003). This was followed by the Florida Virtual School and Virtual High School Global Consortium in 1996-97 (funded, respectively, through state and federal grants). These early initiatives were primarily designed to provide supplemental online learning opportunities for students located in brick-and-mortar schools. The first full-time virtual school began around 2000-01; full-time students currently account for the largest growth in virtual schooling (Watson, Gemin, Ryan & Wicks, 2009).

This growth in virtual schools mirrored the growth in students taking online K-12 classes. It was estimated that 40,000-50,000 K-12 students were taking online classes in the United States in 2001 (Clark, 2001). Less than a decade later, that number had grown to over one million, with many students enrolling in multiple courses (Picciano & Seaman, 2009). In their most recent *Keeping Pace with K-12 Online Learning* report, Watson et al. (2009) reported significant K-12 online learning activity in 45 of the 50 states and the District of

Barbour, M. K. & Ferdig, R. (2011). Online learning (virtual schools). In S. McLeod & C. Lehmann (Eds.), *What school leaders need to know about digital technologies and social media* (pp. 53-66). San Francisco, CA: Jossey-Bass.

Final draft before copyediting

Columbia. Online learning at the K-12 level is growing exponentially; some predict that it will make-up half of all K-12 education by 2020 (Christensen, Horn & Johnson, 2008).

As the amount and popularity of virtual schooling has increased, there have been several other changes to ensure its continued growth. In 2006, Michigan became the first state to require that all students complete an online learning experience in order to graduate from high school. This has been followed by states like New Mexico and Alabama, while several other jurisdictions are currently exploring the possibility. Other states, such as Georgia, Idaho and Arizona, have introduced online teaching endorsements to their teacher certification process. Similarly, Michigan has revised its educational technology teaching standards. Three of the five standards are now directly related to K-12 online learning, which ensures all teachers who gain this endorsement to their teaching certificate are prepared to design, delivery and support virtual schooling.

Factors such as the growing number of K-12 students engaged in virtual schooling, legislation designed to encourage virtual schooling, and changes to teacher certification, all point to an increased presence of virtual schooling in the K-12 system. In this chapter we review the different models and types of K-12 virtual schooling, along with the changes in the role of the teacher caused by this new form of K-12 distance education. We also discuss what we know about virtual schooling based on the research that is currently available. Finally, we explore some of the issues that school administrators may wish to consider as they implement virtual schooling.

Models of Virtual Schooling

Clark (2000) originally defined virtual schools as "a state approved and/or regionally accredited school that offers secondary credit courses through distance learning methods that include Internet-based delivery" (p. i). As virtual schooling has grown, the type of virtual school providers has evolved. Today, virtual schools are often described or classified based on the following criteria:

- *Comprehensiveness* – supplemental program (individual courses) vs. full-time school (full course load)
- *Reach* – district, multi-district, state, multi-state, national, global
- *Type* – district, magnet, contract, charter, private, home
- *Location* – school, home, other
- *Delivery* – asynchronous, synchronous, web, video-conferencing, etc.
- *Operational Control* – local board, consortium, regional authority, university, state, independent, vendor
- *Type of instruction* – fully online, fully face-to-face, blending online & face-to-face
- *Grade Level* – elementary, middle, high/secondary
- *Teacher-Student Interaction* – high, moderate, low
- *Student-Student Interaction* – high, moderate, low [authors' comment: both of these levels of interaction can also be "none" in the case of database-driven courses] (Watson et al., 2009)

Barbour, M. K. & Ferdig, R. (2011). Online learning (virtual schools). In S. McLeod & C. Lehmann (Eds.), *What school leaders need to know about digital technologies and social media* (pp. 53-66). San Francisco, CA: Jossey-Bass.

Final draft before copyediting

The three most common classifications are *supplemental programs, full-time programs* and *blended programs*. Supplement virtual schools are programs where the student is enrolled in a traditional brick-and-mortar or physical school and enrolls in one or more online courses to supplement their in-school courses. This is the model that describes most state-led programs (e.g., Florida Virtual School, Innovative Digital Education and Learning New Mexico, ACCESS Alabama or the Idaho Digital Learning Academy). On the other hand, full-time virtual schooling is when a student is not enrolled in a brick-and-mortar school at all, but completes all of their courses online. This is the model that describes many of the cyber charter schools (e.g., Georgia Virtual Academy, Ohio Connections Academy, and Insight School of Colorado).

Blended learning is when students are enrolled in a brick-and-mortar school, but their teachers make use of online resources as a part of their schooling. Like supplemental and full-time virtual schools, blended learning may take many formats. For example, VOISE Academy in Chicago is a blended program where students attend a brick-and-mortar school, but the course content is provided online; the teachers that are physically located in the building perform a facilitator or learning coach role. Another example would be in the State of Michigan, where many students enrolled in a brick-and-mortar school will complete a portion (often a unit) of one of their face-to-face courses in online – with the course content and the primary instruction occurring in a course management system, and the teacher again performing the role of facilitator.

Multiple Roles within Virtual Schooling

Within a virtual school, there are multiple roles and responsibilities that must be addressed (Davis, 2007).

Teacher. This role includes the presentation of activities, the management of pacing, interacting with students, assessing students, and interacting with parents and/or face-to-face site facilitators or mentors. According to Zucker (2005), the most common reasons given by school districts when asked why they utilize virtual schooling included the ability to offer courses that would not normally be offered at their school and the ability to offer Advanced Placement and other advanced-level courses. One of the reasons these courses are often unavailable is because there is no qualified teacher available to teach that course. For example, in her opening address at the 2008 Virtual School Symposium, Susan Patrick, the President of the International Association for K-12 Online Learning, stated there were 440 high schools in the State of Georgia, but only 88 qualified physics teachers. In these instances the virtual school teacher – or the teacher who is physically distant from the students and responsible for the instruction of that student – becomes an important role.

Designer. This role may or may not be undertaken by the teacher; its responsibilities include designing instructional materials and working in teams to construct online courses. Barbour (2005, 2007) described how teachers are primarily responsible for the design of virtual school courses at some virtual schools. Multimedia specialists might be used after the course has been designed to increase the interactive items in the course content. Alternative models has the teacher as a member of larger team of web development specialists, project managers, and instructional designers (Johnston, 2004). And, finally, still other virtual schools require that the virtual school instructor adapt the content as a part of their contract.

Barbour, M. K. & Ferdig, R. (2011). Online learning (virtual schools). In S. McLeod & C. Lehmann (Eds.), *What school leaders need to know about digital technologies and social media* (pp. 53-66). San Francisco, CA: Jossey-Bass.

Final draft before copyediting

Facilitator. The facilitator has supervisory responsibility, mentoring local face-to-face students taking online classes, acting as their advocate, proctoring exams, and assigning/recording grades; along with being a soft skills coach. The virtual school site facilitator, often called the mentor or mediating teacher (m-teacher), is the role that is often neglected within the virtual school environment. This is the face-to-face, school-based teacher that has been assigned that *in loco parentis* role at the local level (i.e., assuming one has been assigned, which isn't always the case). While the virtual school site facilitator is often the forgotten or overlooked teacher in the virtual school environment, it could be the most important of the three.

Other roles. Depending on the nature of the virtual school program, there are other instructional roles that may be needed. Full-time programs, such as cyber charter schools, also use a learning coach as a part of their instructional support team (Connections Academy, 2004). As most full-time online students do not attend a traditional brick-and-mortar school, there is no virtual school facilitator at the local level to help support the student. Many full-time virtual schools enlist the support of a learning coach to perform this role, and as most students complete their online studies at home the learning coach is often a parent, guardian or other relative. Depending on the specific full-time program, the actual instructional role of the learning coach varies. In some programs, the learning coach is simply responsible for supervising the student – particularly during assessments – and providing that sense of local encouragement. However, in other instances the learning coach is the primary source of instruction and content-based support.

Research on K-12 virtual schooling

Due to the relative young age of k-12 virtual schooling, the field still lacks a strong research base on its effectiveness and associated best practices. However, there are at least five important research findings from the work that has been completed.

Virtual schooling works. Perhaps the most important research finding is that K-12 virtual schooling works. In 2004, a meta-analysis was completed that only found 14 studies related to K-12 online learning. However, those 14 studies provided evidence that K-12 students learned as much as or more online than they did in their face-to-face environments (Cavanaugh, Gillan, Kromrey, Hess, and Blomeyer, 2004). In 2009, a similar meta-analysis was completed by the U.S. Department of Education. The study "found that, on average, online learning students performed better than those receiving face-to-face instruction" Means, Toyama, Murphy, Bakia & Jones, 2009, p. ix).

Although these are positive findings for the K-12 community, there has been some questions about the selection nature of students in the virtual school samples in these studies (Barbour, 2009). Additionally, this research does not suggest that simply putting content online works, and more research is required is to determine best practices in teaching and learning in K-12 environments.

Teachers need more training. Unfortunately, less than 40% of all virtual school teachers in the United States reported receiving professional development before they began teaching online (Rice & Dawley, 2007), and even fewer indicate they receive any preparation in their university-based teacher training programs (Project Tomorrow & Blackboard, 2010). Many

Barbour, M. K. & Ferdig, R. (2011). Online learning (virtual schools). In S. McLeod & C. Lehmann (Eds.), *What school leaders need to know about digital technologies and social media* (pp. 53-66). San Francisco, CA: Jossey-Bass.

Final draft before copyediting

K-12 teacher education programs have yet to embrace K-12 online learning; as such, many pre-service and in-service teachers are unprepared to teach online. And, simply because they have teaching experience does not mean they will succeed online. DiPietro, Ferdig, Black & Preston (2008) found that there were skills that were unique to the online teacher—skills that could not simply be ported from face-to-face instruction.

Virtual schooling can work for at-risk students. Part of the allure of virtual K-12 education is its promise of reaching stay-at-home teen moms, expelled and detained students, and students that need remediation. A recent study examined 27 students who had dropped out of school, but who returned to finish their coursework in an online environment (Ferdig, 2010). Data outcomes revealed that all 27 students did as well as, if not better, than their face-to-face counterparts enrolled in the same classes. All 27 students passed at least one of their classes and each was on his or her way back to high school graduation. This study provided evidence that students *could succeed*; however, when organizers replicated the struggles that students had in face-to-face settings (i.e., lectures without support structures), students replicated their face-to-face failures.

Online students need support. In their evaluation of the ACCESS Alabama online program, Roblyer, Freeman, Stabler and Schneidmiller (2007) found that "facilitators that are directly working with students day-by-day are key to the success of the program" (p. 11). Other studies have found the same outcomes (e.g., Ferdig & Black, 2008). Students always need scaffolding and support; it is a key component of most pedagogical strategies. However, when they go online and lose direct contact with a face-to-face instructor, they often need the mentoring role of another teacher, a school counselor, a facilitator, or a parent. These support personnel provide motivation, technical support, and even logistical solutions for students (e.g., enrollment).

Data is critical. Data-driven decision-making is often used term to designate the importance of the use of data to drive decisions to improve teaching and learning. Online environments provide easier access to recorded data; however, that does not mean that the data will be collected, analyzed or shared with students, parents, teachers, and leaders. The Virtual School Clearinghouse (http://www.vsclearinghouse.com) was built in 2006 with a grant from the BellSouth Foundation, later the AT&T Foundation (Ferdig, 2006). The goal of the grant to was collect, analyze, and help schools collect and analyze data. The research team initially found that both face-to-face and virtual schools were not collecting as much data as necessary to be able to ask and answer important education questions. Additionally, if they were collecting data, they were only collecting data about the teacher and the student. In online learning environments, there is also data that is available about the course (e.g., who built it), the course instance (e.g., when it was taught and by whom), the school or entity from which the student enrolled, and the 'other' (e.g., parent, mentor, facilitator, etc.). Each of these components are key to making data-driven decision but also in pushing the research in this young field.

Suggested outcomes for school leaders

K-12 online learning is exponentially increasing, as are the number of students that are enrolling. School leaders, either by their choice or the choices of teachers and students under their care, can embrace virtual schooling in a number of different ways. On one end is the supervision of students taking courses online while in their school; on the opposite end

Barbour, M. K. & Ferdig, R. (2011). Online learning (virtual schools). In S. McLeod & C. Lehmann (Eds.), *What school leaders need to know about digital technologies and social media* (pp. 53-66). San Francisco, CA: Jossey-Bass.

Final draft before copyediting

is the creation of blended and online environments. In either case, there are several key outcomes and concerns for school leaders.

1. Train your teachers. Teachers in face-to-face schools may never become online or blended instructors. However, at the very least, they will probably have students in their classes that take online courses. Teachers need to have a good understanding of K-12 online learning and the support they might have to provide for their students. A school leader who supports an online or blended teaching environment should never assume that face-to-face instructors can teach online simply because they have years of teaching experience.
2. Provide support for students. Students taking online classes need administrative support (e.g., enrolling in classes), technological support (e.g., access to a computer lab), and, in some cases, content help. Average schools generally assign one person to do all of these things, generally the school counselor. Forward thinking school leaders find ways to create mentors or mentoring teams for students taking online and blended content so that they can succeed.
3. Lead by example. School leaders wishing to create online and blended programs should understand that many teachers have never taken an online class. Asking them to teach online or in blended environments without first having the experience is like putting the cart before the horse. School leaders should consider finding ways to offer online and blended professional development so that teachers can learn in the environment in which they will teach.
4. Collect, analyze, and use data. Data is important for leaders. Therefore, a simple recommendation is to help leaders find ways to analyze existing best practices through data collection. A more challenging suggestion is to find ways to then share those analyses with the shareholders; find ways to assess students beyond just once or twice a year. Then, find ways to share those outcomes with teachers, mentors, and parents throughout the year. Online learning presents a wealth of new information that is collected daily; simply having the data available does not mean it will instantly be ready for public consumption. The Virtual School Clearinghouse has existing templates that can be downloaded and analyzed for free.
5. Join the community. There is an existing community of leaders that have participated in discussions about pedagogy, technology, and practice in K-12 online learning. Find ways to connect to those communities. The International Association for K-12 Online Learning (iNACOL; http://www.inacol.org) hosts an annual conference and has online forums and articles for support and guidance.

In sum, online education is a rapidly growing medium for teaching and learning at the K-12 level. Early research indicates K-12 virtual schooling has promise for multiple audiences. However, simply building online content and hoping for success will not work. School leaders should be optimistic about the potential but should be thoughtful in implementation.

Barbour, M. K. & Ferdig, R. (2011). Online learning (virtual schools). In S. McLeod & C. Lehmann (Eds.), *What school leaders need to know about digital technologies and social media* (pp. 53-66). San Francisco, CA: Jossey-Bass.

Final draft before copyediting

References

Barbour, M. K. (2005). *Evaluation of the Illinois Virtual High School course development process.* Aurora, IL: Illinois Virtual High School. Retrieved from http://www.imsa.edu/programs/ivhs/pdfs/course_development_eval_2005-10.pdf

Barbour, M. K. (2007). Principles of effective web-based content for secondary school students: Teacher and developer perceptions. *Journal of Distance Education, 21*(3), 93–114. Retrieved from http://www.jofde.ca/index.php/jde/article/view/30

Barbour, M. K. (2009). Today's student and virtual schooling: The reality, the challenges, the promise... *Journal of Distance Learning, 13*(1), 5-25.

Cavanaugh, C., Gillan, K. J., Kromrey, J., Hess, M., & Blomeyer, R. (2004). *The effects of distance education on K-12 student outcomes: A Meta-Analysis*. Naperville, IL: Learning Point Associates.

Christensen, C. M., Horn, M. B., & Johnson, C. W. (2008). *Disrupting class: How disruptive innovation will change the way the world learns*. New York: McGraw Hill.

Clark, T. (2007). Virtual and distance education in North American schools. In M. G. Moore (Ed.), *Handbook of Distance Education* (2nd ed.) (pp. 473-490). Mahwah, NJ: Lawrence Erlbaum Associates, Inc..

Clark, T. (2003). Virtual and distance education in American schools. In M. G. M. W. G. Anderson (Ed.), *Handbook of distance education* (pp. 673–699). Mahwah, NJ: Lawrence Erlbaum Associates Inc..

Clark, T. (2001). *Virtual schools: Trends and issues - A study of virtual schools in the United States*. San Francisco, CA: Western Regional Educational Laboratories. Retrieved from http://www.wested.org/online_pubs/virtualschools.pdf

Clark, T. (2000). *Virtual high schools: State of the states – A study of virtual high school planning and preparation in the United States*. Center for the Application of Information Technologies, Western Illinois University. Retrieved from http://www.imsa.edu/programs/ivhs/pdfs/stateofstates.pdf

Connections Academy. (2004). *Learning without boundaries: How to make virtual schooling work for you*. Baltimore, MD: Author.

Davis, N. E. (2007, November). *Teacher education for virtual schools*. A presentation at annual Virtual School Symposium, Louisville, KY. Retrieved from http://ctlt.iastate.edu/~tegivs/TEGIVS/publications/VS%20Symposium2007.pdf

DiPietro, M., Ferdig, R. E., Black, E. W., & Preston, M. (2008). Best practices in teaching K-12 online: Lessons learned from Michigan Virtual School teachers. *Journal of Interactive Online Learning, 7*(1). Retrieved from http://www.ncolr.org/jiol/issues/getfile.cfm?volID=7&IssueID=22&ArticleID=113

Ferdig, R. E. (2010). *Understanding the role and applicability of K-12 online learning to support student dropout recovery efforts*. Report presented to Michigan Virtual School, East Lansing, MI.

Ferdig, R. E. (2006). Principal Investigator for funded grant proposal ($600,000) entitled, "*Establishing a framework to strengthen virtual high schools: A collaborative initiative to improve student performance and quality of instruction."* BellSouth Foundation.

Ferdig, R. E., & Black, E. W. (December, 2008). *Surprises in online learning: What the data show*. Paper presented at the Michigan Virtual School Symposium, East Lansing, Michigan.

Means, B., Toyama, Y., Murphy, R., Bakia, M., & Jones, K. (2009) *Evaluation of evidence-based practices in online learning: A meta-analysis and review of online learning*

Barbour, M. K. & Ferdig, R. (2011). Online learning (virtual schools). In S. McLeod & C. Lehmann (Eds.), *What school leaders need to know about digital technologies and social media* (pp. 53-66). San Francisco, CA: Jossey-Bass.

Final draft before copyediting

studies. U.S. Department of Education, Office of Planning, Evaluation, and Policy Development; Washington, D.C.

Picciano, A. G., & Seaman, J. (2009). *K-12 online learning: A 2008 follow-up of the survey of U.S. school district administrators*. Needham, MA: Alfred P. Sloan Foundation. Retrieved from http://www.sloanconsortium.org/publications/survey/pdf/k-12_online_learning_2008.pdf

Project Tomorrow & Blackboard. (2010). *Learning in the 21st century: 2010 trends update*. Irvine, CA & Washington, DC: Authors. Retrieved from http://www.blackboard.com/Solutions-by-Market/K-12/Learn-for-K12/Leadership-Views/Education-in-the-21st-Century.aspx

Rice, K., & Dawley, L. (2007). *Going virtual! The status of professional development for K-12 online teachers.* Boise, ID: Boise State University. Retrieved from http://edtech.boisestate.edu/goingvirtual/goingvirtual1.pdf

Watson, J. F., Gemin, B., Ryan, J., & Wicks, M. (2009). *Keeping pace with K–12 online learning: A review of state-level policy and practice*. Naperville, IL: Learning Point Associates. Retrieved from http://www.kpk12.com/downloads/KeepingPace09-fullreport.pdf

Zucker, A. (2005). *A study of student interaction and collaboration in the Virtual High School*. Naperville, IL, Learning Point Associates.