

Future Issues in Online Learning

With online learning poised to be mainstream in less than a decade, K–12 administrators face fundamental questions and far-reaching opportunities.

BY SUSAN PATRICK

A STUDENT SIGNS IN ON THE COMPUTER, THE SAME WAY MOST OF US DO OUR ONLINE BANKING, AND a personalized display shows exactly how many lessons she successfully completed and how she is doing in the pacing of her coursework. And a history of communication and collaboration with teachers and fellow students is recorded in her own learning system. Learning has shifted to a localized, student-centered, and performance-based model.

The fact that students are learning over the Internet is so familiar that it is invisible to students and teachers alike. What is especially rich is the interaction and sharing of ideas between other students, collaborating inside and outside of the classroom, and the creation of new content related to the academic work they are engaged in daily. What makes a high-quality online learning environment today and in the future? The quality of the teacher, the quality of the human interaction, the academic rigor, and the student support are all key, but teaching excellence is what makes the gold standard of high-quality online learning possible.

Online learning started as a way to expand access to courses and teachers that were otherwise not available at schools. In the future, the issues will be centered on how to use the innovation of online learning to solve the bigger problems in K–12 education: how to offer a world-class education for every student, how to improve teaching and course quality, how to move to performance- and competency-based models of learning, how to ensure every student is college-ready, and how to scale the delivery model for all students.

World-Class Opportunities

In the next three years, students across the European Union will enroll in online courses through the new International Baccalaureate (IB) diploma online. The IB program will hire master teachers from 26 countries and train them to teach online. The “gold standard” of online IB courses will be developed and perfected to teach a thorough, world-class curriculum toward

an internationally recognized high school diploma, demanding that students are fluent in multiple languages. These students will interact with other students in their classes from more than 26 different countries, they will learn from master teachers across the continent, and they will collaborate on a global scale as they gain the skills to become global citizens. They will be effective, technologically savvy communicators.

Access and Growth

Actually, the future is now. In the United States in 2007, there were one million enrollments in K–12 online learning, up from 50,000 in 2000. Online learning is growing in the United States at 30 percent annually, although in states with supportive policies and funding, student demand for online learning has shown growth rates of 100 percent—doubling student enrollments in online courses from year to year.

In their new book, *Disrupting Class: How Disruptive Innovation Will Change the Way the World Learns*, Clayton Christensen, Michael Horn, and Curtis Johnson predict that online learning will grow from 5 percent of all K–12 courses in 2012 to 50 percent of all courses by 2019. Online learning is an innovation that is driven by what the authors describe as “the ability for students, teachers, and parents to select a learning pathway through each body of material that fits each of the types of learners—the transition from computer-based to student-centric technology” that has already started today in our virtual schools. It doesn’t necessarily mean students and teachers are “distance” learning, as online learning can be a new

distribution model for courses within schools as well as providing ways to offer more courses, to use time more efficiently, to prepare students for competency and college, and to provide more personalized instruction from teachers.

Preparing Every Teacher

In the United States, with the publishing of the North American Council for Online Learning's "National Standards for Quality Online Teaching," teacher-training institutions are beginning to offer courses as well as certificate and degree programs that include full preparation for online teaching and blended or hybrid online learning. Already, new delivery models within and outside of classrooms using online learning allow for increased instructional support for less self-directed students, while more self-directed students are increasing the self-pacing so that they can actually learn more—both greater amounts of content and new content in more depth—making a better use of class time than possible today in a classroom limited to one teacher, one 50-minute class period, one room, and one textbook. Classrooms in this traditional model are resource-poor environments. Online learning is a new delivery and distribution model for students demanding new engaging models offered online, and online learning can offer a range of high-quality content. Here are some ways online learning provides expanded learning opportunities for all students:

- Online learning allows for expanded communication, collaboration, and creativity tools.
- Online teaching and learning provides a platform for collaboration with students, teachers, and experts globally.
- Online courses allow for distributed teams of students to engage in problem-based learning, problem solving, critical thinking, and communication using the technical skills needed in the real-world learning environments for colleges and the workforce.
- Online learning provides improved use of time with asynchronous and synchronous communication and collaboration capabilities.
- Online learning will expand the use and provide organization of student- and teacher-generated content.
- Online learning can provide improved use of class time in face-to-face settings for Socratic questioning, rich discussions, and thoughtful engagement.
- Online learning can create an enterprise-wide delivery system for true competency-based, student-centric learning.

Competency-Based Learning

Students learn at different paces, with different learning styles, and need different levels of instructional support from lesson to lesson. Without technology, this is nearly impossible to manage in a monolithic, face-to-face setting with a group of

30 students. Online learning makes personalized, self-paced learning available. True individualization of instruction comes from focusing on competency. Online learning can be designed to deliver content in a competency-based model, with teacher-led instructional activities and feedback, with ongoing assessment embedded into the system for real-time performance data.

In a competency-based model of online learning, the competencies are carefully selected and based on the state academic standards. Since the vast majority of states have well-defined academic curricular standards in most subjects, one could argue that the innovation of competency-based online-learning systems would be easier to implement in K–12 education than in higher education, where course content varies from institution to institution and faculty member to faculty member. K–12 education has some advantages when scaling up online learning for competency-based, student-centric learning—but we must build the delivery system and infrastructure to make it a reality.

The delivery components for competency-based online learning include:

- online learning that is self-paced;
- online learning that allows for large groups, small groups,



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- and individual self-directed learning as appropriate;
- online-learning content that is sourced from multiple providers and increasingly decentralized;
- online learning that provides online tutors and expanded student support services;
- online learning that uses more sophisticated software, such as embedded artificial intelligence, differentiated learning pathways, and diagnosed feedback that can pinpoint problem areas and offer additional resources;
- online-learning student-information data systems that collect the level of data needed for performance-based learning environments; and
- high-speed broadband, with access to a computer for every student and teacher.

Assessing and Evaluating Outcomes

Creating 21st-century models of assessment is important in examining future issues in learning. If there is to be true mastery of content by knowledge, skills, and abilities, then embedding assessments throughout the student's engagement with the content will help provide the data needed to manage and evaluate the performance-based delivery model in

education. Some opportunities for evaluation can be collecting data and measuring student satisfaction within the content and interface, measuring true time on task, tracking click-throughs in the content, and allowing user control of the content such as reading (and re-reading) text, playing and replaying video related to text (such as animations of concepts), streaming video (watch and rewind), simulations, and student- or teacher-created presentations of the same concepts. Of course, the assessment of skills in context-based environments, by taking advantage of virtual reality, using avatars, offering rigorous oral and written assessments, or evaluating projects and portfolios are among ways that online learning is proving to be more demanding than many traditional environments. Competency-based programs should be designed to embed criterion-referenced assessments, with the criteria being the competencies for the academic standards.

Teachers and instructional designers should develop simulations and assessments with appropriate rating scales. Students must have clear expectations of the performance level that is expected and how their progress will be evaluated. As the progression is competency-based and self-paced, there are opportunities for practice until mastery is achieved. When decentralizing the sourcing for content and assessments and pulling them together in enterprise-wide e-learning systems, matching the rating and scoring scales in assessments is one major issue that should be addressed at the outset by districts and states.

Quality Issues

Quality assurance in online learning will become more important in the future as the delivery model allows precise data to be collected on the entire learning experience. Today, the measures of quality assurance in traditional schools are limited in the United States, especially compared with other developed nations. For example, the British conduct inspections of K–12 schools where auditors review extensive data on quality measures and performance, including teacher performance based on student achievement, and the data are then tied back to their teacher-training institutions in higher education.

Quality measures for online learning should mirror those required for traditional face-to-face teaching, as the two will blend in the future. Quality assurance is important in three main areas: courses, teaching, and academic programs.

Already, there are national standards of quality for online courses and for online teaching. These checklists provide criteria for developing courses, training, and evaluating effectiveness in each area. For programs, quality management will be based more on performance outcomes and less on system inputs. Additionally, quality control is handled through the recognized accreditation agencies. Accreditation agencies are working to improve their methods to take into account the growth of online learning.

Blended Learning

Increasingly, the lines between online learning that is done at a distance and online learning that is delivered within our classrooms will blur. This new model will incorporate online

courses and resources, with teachers trained in new strategies for both teaching online and using blended learning in classrooms to make the best use of face-to-face time for discussions and projects, while encouraging students to work harder.

Competency-based models and new teaching strategies using online courses will cause a major shift in the instructional model and the use of time in traditional schools. Blended learning using online courses is the only way to overcome the challenges of limited time or space in our schools. A major shift in pedagogy is under way as teachers use the Internet as a delivery model to expand access, provide asynchronous learning, guide individual instruction, and offer students support.

Scaling the Innovation

Colleges and universities have dramatically scaled up their options for online courses and online degree programs in the past 10–20 years, fueled by student demand and a funding model that allows students to select the appropriate institution, program, degree, or course. Students in higher education pay tuition—either out of pocket, through scholarships, or through financial aid—which allows them to choose the program that best fits their educational needs. In contrast, while online learning now opens up a range of world-class educational opportunities for students at any location, the funding model for K–12 education greatly limits access to online programs. Students are limited to whether their state has authorized online programs, whether their state has approved the use of taxpayer dollars for virtual schools, and whether their state allows teacher reciprocity—for teachers to teach across state lines, even if they are master teachers licensed in another state.

The three biggest challenges for scaling up K–12 online learning are:

1. Limited choices by regulation: Only 18 states allow full-time cyber charter schools, and only 26 states have statewide supplemental programs for students to take online courses.

2. Funding and state financing of education: Only two states have school-finance systems that allow for taxpayer dollars to follow the students when they enroll in an online course part-time, and only 18 states allow for taxpayer dollars to follow the student into full-time online programs. Meanwhile, most of the 26 states with part-time programs fund supplemental programs through an annual appropriation, so enrollments are limited to the appropriation amount and not scalable based on demand. Without scalable funding, only the “haves” will be able to afford online programs for their students. Online learning is scalable, but we need to update our finance systems to allow students to access the most appropriate academic opportunities available.

3. Reciprocity for online teaching licenses: Many states are facing teacher shortages; reciprocity would allow for teachers with appropriate credentials to teach across state lines. Currently, many online programs have teachers who need to be licensed in multiple states (in some cases, 20 or more different state teaching licenses). This makes it very difficult to scale online learning with highly qualified teachers. Only North Dakota allows full reciprocity for online teachers with other states.

Future Focus

In expanding their online-learning options, elementary and secondary public school districts and state education agencies will need to prepare to focus on new models of embedded assessment; evaluating outcomes; funding models based on performance; building competency-based, enterprise-wide systems; and awarding credit and degrees based on a new delivery model.

Content development will increasingly be decentralized and will come from anywhere—students, parents, and teachers from across the world. As a result, quality control will matter more than ever. Online learning systems will continue to develop, and the types of sophisticated software embedding appropriate assessments, artificial intelligence, and effective instructional design will help support teachers—not replace them—so that teachers can focus on being the experts who deepen discussions to ensure rigor and build understanding in an increasingly complex world.

The tipping point when online courses are mainstreamed into most school classrooms is predicted to happen in the next six to eight years. Christensen, Horn, and Johnson predict it will happen “in approximately 2014 when online courses have a 25 percent market share in high schools.”

In the next 10 years, there will be a dramatic shift toward online learning:

- Every state and school district will offer online learning to K–12 students so that every student has the opportunity to access the highest-quality education available.
- Every school will offer teacher-led, online courses—both blended and distant—to serve every child’s need with individualized opportunities.
- Every school leader will understand the importance of online learning to expand access to opportunities, prepare students for college and the workforce, and reduce inequities that exist in our education system.
- Every school will use class time and building space differently in order to promote collaboration, communication, and creative activities. The use of the technology will allow time shifting and a focus on personalized growth and knowledge attainment through a competency-based system.
- Every school and community will have a high-speed, broadband, wireless Internet infrastructure that allows each student to access a full menu of online courses, services, and programs at any time, any place, and any pace.
- Every teacher will be trained to use digital content for instruction and to have strategies that increase the problem-solving, collaborative, and critical-thinking skills of students, while monitoring the progress of student academic growth and performance.
- Every teacher will understand how to manage course progress, collaboration, new assessment models, and e-portfolios.
- Every teacher will be able to individualize instruction and track data on student performance.
- Every student will be able to choose the best courses to fit their individual needs in meeting academic standards, knowledge, and skills development.

RESOURCES

Christensen, Clayton M., Curtis W. Johnson, and Michael B. Horn. *Disrupting Class: How Disruptive Innovation Will Change the Way the World Learns.* McGraw-Hill, 2008.

North American Council for Online Learning. www.nacol.org
“**NACOL National Standards for Quality Online Teaching.**”
February 2008. www.nacol.org/nationalstandards/index.php#teaching

- Every student will have access to advanced courses, foreign languages, and math and science courses in high demand to prepare them for the rigors and competitive college and workplace—taught by highly qualified teachers.
- Every student will have access to diagnostic tools and instant feedback to show how they are performing academically, as well as access to a range of support resources—from real-time tutoring to self-directed, accelerated learning for a range of needs.
- Every parent will have a range of choices for academic programs to best fit their children’s unique needs.
- Every parent will be able to access up-to-the minute data, showing their student’s performance and what skills they have achieved based on internationally benchmarked knowledge and competency standards. How well a student is doing in school will be fully transparent—the up-to-the-minute student data and information will be accessible online, with detailed reporting of grades, student performance, and competency based on each academic standard.

Conclusion

Student-centered learning through online delivery is here to stay. New models that engage students, focus on skills and knowledge, take advantage of competency-based learning, and allow for creating an e-portfolio of acquired knowledge are being adopted in schools around the world quickly. Our students will collaborate in online environments in ways we never thought possible. Just as quickly as the Internet has expanded access to collaboration, networking, images, videos, researching, writing, and creating tools, our new models of innovative online learning are using emerging technologies to support the highest-order thinking skills, creativity, and knowledge transfer for teachers and student-learning methodologies alike. The next-generation student is here; we must ensure the next generation of online learning is here to support them for college- and workforce-readiness. New online-learning options will offer the chance for every child to achieve a world-class education. ●●●

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