

Blended Learning: The Convergence of Online and Face-to-Face Education



PROMISING PRACTICES
IN ONLINE LEARNING

Blending Learning: The Convergence of Online and Face-to-Face Education

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About *Promising Practices in Online Learning*

Online learning within K-12 education is increasing access and equity by making high quality courses and highly qualified teachers available to students. Online learning programs offer courses, academic credits and support toward a diploma. They vary in structure, and may be managed by a state, district, university, charter school, not-for-profit, for-profit, or other institution. Thirty states and more than half of the school districts in the United States offer online courses and services, and online learning is growing rapidly, at 30% annually. This growth is meeting demand among students, as more than 40% of high school and middle school students have expressed interest in taking an online course.

The most well established K-12 online learning programs are more than ten years old, and many programs have between five and ten years of operating experience. The newest programs are building on the expertise of those early adopters, as well as the experience of online learning in postsecondary institutions and the corporate world. A body of knowledge, skills and practices has been developed by individual programs, in collaboration with practitioners, researchers, and policymakers. Because there are so many types of online programs (full-time, supplemental, state-led, district-level, consortium), there are also many different approaches to teaching, student support, professional development, and other issues.

This series, *Promising Practices in Online Learning*, explores some of the approaches being taken by practitioners and policymakers in response to key issues in online learning in six papers being released throughout 2008:

- Blended Learning: The Convergence of Online and Face-To-Face Education
- Using Online Learning for Credit Recovery and At-Risk Students
- Oversight and Management of Online Programs: Ensuring Quality and Accountability
- Socialization in Online Programs
- Funding and Legislation for Online Education
- A Parents' Guide to Choosing the Right Online Program

The title, *Promising Practices*, deliberately avoids the term "best practices." There are too many approaches to online learning, and too many innovative teaching and learning strategies in the 21st century, for one method to be labeled "best." Instead, this series aims to discuss the issues and explore examples from some of the many online programs across the country, with a goal of illuminating some of the methods showing the most promise.

Online learning offers the advantage of personalization, allowing individualized attention and support when students need it most. It provides the very best educational opportunities to all students, regardless of their zip code, with highly qualified teachers delivering instruction using the Internet and a vast array of digital resources and content. Through this series of white papers, we are pleased to share the promising practices in K-12 online learning that are already underway.

Blended Learning: The Convergence of Online and Face-to-Face Education

In the past decade online learning has become an increasingly important component of K-12 education. The growth of online education has been driven primarily by state-led online programs (such as the Florida Virtual School, Michigan Virtual School, Idaho Digital Learning Academy, and Virtual Virginia) and full-time online schools (such as the charter and contract schools affiliated with K12 Inc., Connections Academy, and Insight Schools) that were started specifically to provide online learning opportunities at a distance. In some cases, online programs evolved from traditional distance learning programs and represent the latest evolution in distance learning, from the days of the correspondence course, to video courses and real-time two-way video, and now to more convenient and efficient online delivery. The advantage to online learning over these other channels is its combination of rich student-teacher-peer communication and interaction, either synchronous or asynchronous, and robust personalized teaching within instructor-led courses.

During the same period, teachers in physical schools have increased their use of Internet-based content and resources in their classrooms. This evolution has often been driven by a small number of tech-savvy teachers and technology coordinators seeking new ways to provide enriching content and to extend learning beyond the walls of the school and the confines of the school day. These efforts are usually not a formal stand-alone program or school, and often build on the computer-based instructional materials that pre-date widespread adoption of the Internet. However, the spread of the Internet has greatly increased the quality of digital classroom resources and has spurred the creation of district-level programs that blend online learning and face-to-face instruction. In recent years many of these programs have been incorporating online content from providers such as Apex Learning and the Monterey Institute for Technology and Education.

Because fully online distance learning programs developed in a different place and with different methods than the use of Internet resources in physical schools, the blending of online programs and the classroom setting has been relatively slow to develop in K-12 education. However, emerging models in other countries, such as Singapore and Australia, as well as in higher education, suggest that a large part of the future of education will involve providing content, resources, and instruction both digitally and face-to-face in the same classroom.

This blended approach combines the best elements of online and face-to-face learning. It is likely to emerge as the predominant model of the future — and to become far more common than either one alone. Fully online schools meet an important and growing demand for courses and programs otherwise not available, and the growth and popularity of such programs show no signs of slowing. Though online learning programs will continue to grow, it seems likely that the percentage of the

student population seeking a fully distance-based education will remain relatively low (although likely much higher than the percentage of students now in fully online programs, given current growth of these schools). At the same time, in an age when information and communications technology skills are so critical, and so much collaboration, resource sharing, content development and learning are done digitally, asynchronously, and at a distance, it is unlikely that student learning will continue to be based solely on print textbooks and face-to-face classes conducted in 50-minute increments.

Blended learning, combining the best elements of online and face-to-face education, is likely to emerge as the predominant teaching model of the future.

Most educators, parents, and policymakers think of “online learning” as a subset of distance learning (where the students and teacher are geographically separate), in which content delivery and communication are achieved primarily through the use of computers connected by the Internet. However, online learning can be either distance learning or blended learning, with both supported by a new, robust instructional approach that takes advantage of the best elements of both settings.

The advent of learning that combines online and face-to-face delivery is not merely a theory — it is already being developed and implemented by schools throughout the country and the world, and in some cases has been underway for several years. While some schools call this method of teaching “blended,” others call it “hybrid,” and others don’t bother naming it — they’re just implementing an approach that they believe is helping their students.

This paper discusses definitions of blended learning and explores ways in which blended learning is being developed by numerous schools in an effort to answer these and other questions:

- How does blended learning fit into current conceptions of online learning?
- How does blended learning help engage students and support their academic success?
- How are online learning and face-to-face instruction being combined effectively?
- Is blended learning meeting unique student needs that neither fully online nor face-to-face models can achieve?
- What digital content and curricula are being used in blended learning?

As with all of the papers in the *Promising Practices* series, the examples discussed below are not exhaustive. However, they illustrate some of the outstanding uses of blended learning in these early stages of its development and suggest opportunities for expanding its use and effectiveness.

Defining blended learning

Blended learning means many things to many people, even within our relatively small online learning community. It is referred to as both blended and hybrid learning, with little or no difference in the meaning of the terms among most educators. In general terms, blended learning combines online delivery of educational content with the best features of classroom interaction and live instruction to personalize learning, allow thoughtful reflection, and differentiate instruction from student to student across a diverse group of learners.

Definitions of blended learning range from some so broad that practically any learning experience that integrates some use of educational technology might qualify, to others that focus on a specific percentage combination of online curriculum and instruction in a face-to-face setting. A few of the many definitions of blended learning include:

- The integration of face-to-face and online learning to help enhance the classroom experience and extend learning through the innovative use of information and communications technology. Blended strategies enhance student engagement and learning through online activities to the course curriculum, and improve effectiveness and efficiencies by reducing lecture time.¹
- “A course that blends online and face-to-face delivery. Substantial proportion of the content is delivered online, typically uses online discussions, and typically has some face-to-face meetings.” The Sloan Consortium defines blended courses as having between 30 percent and 79 percent of their content delivered online, with the remaining portion of the course content delivered by face-to-face instruction or other non web-based methods, such as paper textbooks.²
- The combination of multiple approaches to learning. Blended learning can be accomplished through the use of ‘blended’ virtual and physical resources.³

Ultimately, the exact definition of blended learning, beyond some combination of online and face-to-face, may not matter. Along these lines, Dziuban, Hartman and Moskal (2004) in a research brief for EDUCAUSE titled “Blended Learning” noted:

“Blended learning should be viewed as a pedagogical approach that combines the effectiveness and socialization opportunities of the classroom with the technologically enhanced active learning possibilities of the online environment, rather than a ratio of delivery modalities. In other words, blended learning should be approached not merely as a temporal construct, but rather as a fundamental redesign of the instructional model with the following characteristics:

- A shift from lecture- to student-centered instruction in which students become active and interactive learners (this shift should apply to the entire course, including face-to-face contact sessions);
- Increases in interaction between student-instructor, student-student, student-content, and student-outside resources;
- Integrated formative and summative assessment mechanisms for students and instructor.”⁴

Most importantly, in this view, blended learning represents a shift in instructional strategy. Just as online learning represents a fundamental shift in the delivery and instructional model of distance learning, blended learning offers the possibility to significantly change how teachers and administrators view online learning in the face-to-face setting. “The widespread adoption and availability of digital learning technologies has led to increased levels of integration of computer-mediated instructional elements into the traditional F2F [face to face] learning experience,” write Bonk and Graham, in the Handbook of Blended Learning.⁵

¹ University of Calgary, Teaching and Learning Centre, retrieved March 3, 2008 from <http://commons.ucalgary.ca/teaching/programs/itbl/>

² Blending In: The Extent and Promise of Blended Education in the United States, Allen, Seaman and Garrett, March, 2007

³ Wikipedia, January, 2008, http://en.wikipedia.org/wiki/Blended_learning

⁴ Dziuban, C., Hartman, J., Moskal, P., “Blended Learning,” EDUCAUSE Review, Volume 2004, Issue 7, 2004

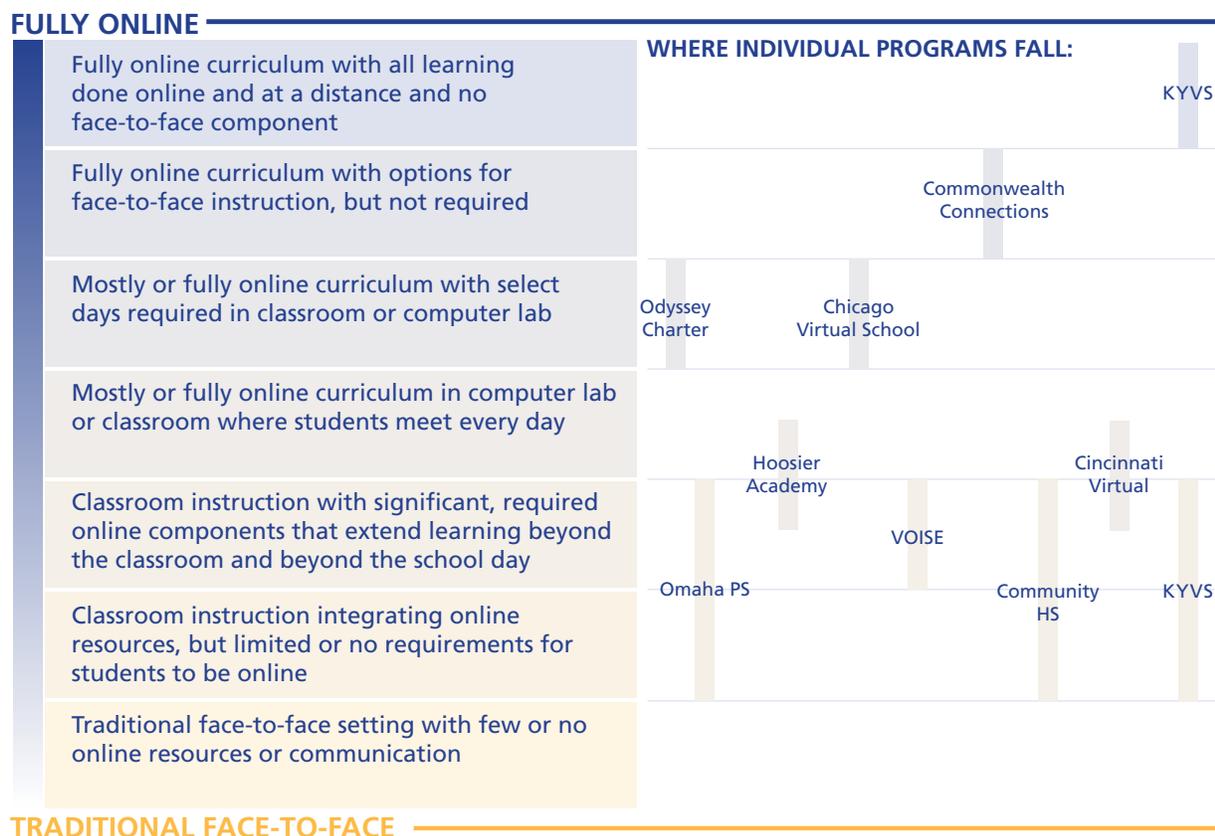
⁵ Bonk, C. J. & Graham, Handbook of Blended Learning: Global Perspectives, local designs. Copyright © 2004 by John Wiley & Sons, Inc.

Blended learning in practice

Regardless of the exact definition of blended learning, a growing number of online schools and programs are combining online teaching and face-to-face instruction in some way. The blending may be at the course level, combining both online and non-online instruction within one subject. The blending may be at the institutional level, for example online schools gathering their students on a regular, scheduled basis, with the teacher physically present or remaining at a distance. Finally, some students are taking one or more fully online courses and attending a traditional classroom for one or more face-to-face courses, another type of blended model. This last approach applies to most of the state-led supplemental online programs such as Michigan Virtual School and Colorado Online Learning, as well as some district programs such as the Hamilton County Virtual School, and some consortium programs such as the Massachusetts-based Virtual High School.

The examples that follow demonstrate that blended learning defines a major segment of a continuum between fully online, at-a-distance courses, and fully face-to-face courses that use few or no Internet-based resources.

Blended Learning Continuum



Cincinnati Public Schools Virtual High School

Cincinnati Public Schools Virtual High School brings students together in a physical setting during regular school hours, but students work primarily with online content while having face-to-face access to teachers. The school provides an online alternative for students who need credit recovery and are having difficulty in the traditional classroom setting. The Virtual High School is in a traditional brick-and-mortar setting that uses computer labs for each of five course areas; social studies, mathematics, science, language arts and foreign language (Spanish). There are two highly qualified teachers in each subject lab, and an additional lab with two Intervention Specialists (for students with an Individual Education Plan) and a reading specialist. The program is supported by a full-time school social worker, guidance counselor, tech support person, and full-time security staff. Students attend the computer labs in two groups, every day for three hours in the morning or afternoon, to work within space limitations. In addition, they are expected to work outside of school hours, either at home or at community locations such as a public library where Internet connectivity is available.

The combination of a fully online curriculum, provided by Apex Learning, with instruction in the face-to-face setting has given teachers the flexibility to work with students one-on-one. There is no social stigma associated with credit recovery because students are engaged in a highly customized, personalized learning environment where they take ownership of their learning. Students are responsible for their pace within the parameters of an agreed course completion date with the respective teacher, and are required to have three courses on their schedule at all times. The instructional approach focuses on student production and performance rather than being based on teacher-driven pace and content. Students off grade do not have to deal with comparisons and are allowed to work at their own pace, giving teachers time to address individual questions. The Virtual High School “took a distance learning tool — digital curriculum — and made it the primary delivery system of curricula in the brick-and-mortar institution,” says Principal Scott Hornblower. “It took the risk out of at-risk. Because students work on computers to access all of their content, they are developing better computer skills and a greater comfort level with technology than many traditional students. They are going on to post-secondary courses, or into the workplace, better skilled with computers and technology.” At the same time, the physical setting and face-to-face instruction provides the support structure that many of these students need.

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– Scott Hornblower, Principal,
Cincinnati Public Schools Virtual
High School

The combination of online learning curriculum in the physical setting effectively “buys” the most precious commodity for teachers — time. The blended approach enables teachers to address academic and other concerns on an individual basis. This approach also enables the school to service

a variety of students who need a non-traditional learning model because they are raising families and/or working, they want to accelerate their high school experience, they want the challenge of taking an AP course at their own pace, or they have a chronic illnesses, physical or emotional condition that precludes them from participating in a traditional classroom.

The blended learning environment does require teachers to be content-savvy because students are not in the same course and on the same assignment at any given time. Within a computer lab full of students working at their own pace, a teacher may have one question on AP statistics, then cross the room to answer a basic math question.

Odyssey Charter Schools

Odyssey Charter Schools, open to all K-12 students residing in Clark County, Nevada, have used a blended learning model since receiving their charter approval in 1999. The Odyssey instructional model combines fully online, distance-based curriculum with required on-site attendance. Students attend classes on campus one day a week for four hours, receiving face-to-face instruction and mentoring with highly qualified teachers in classrooms equipped with computer and online access. They work independently during their four-hour period in the physical setting, with mentors available to work individually with students as needed.

Odyssey's experience has shown that the effectiveness of face-to-face time in certain subjects, like math, is more important than in other subjects. "The blending of online learning and face-to-face mentoring in math has been effective. In some courses like mathematics, it's helpful to be able to just sit down one on one," says Craig Butz, the Schools' Executive Director.

In addition to the requirement for students to physically attend the school one day per week, Odyssey has one required course, Learning Strategies, which is conducted in a nearly 50% face-to-face setting. The Learning Strategies focuses on mandatory study skills and learning strategies, and prepares students for high school proficiency exams.

Commonwealth Connections Academy

The Commonwealth Connections Academy (CCA) is a K-11 Pennsylvania public school. It primarily uses an online delivery system but recognizes the need to blend the program's online approach with a face-to-face component to give students extra support to keep them on grade level. CCA created a drop-in center where online students work with highly-qualified teachers in person (usually the same teachers the students work with online) to address deficiencies. Connections Academy uses indicators found in test scores, course activities and portfolio assignments to identify struggling students. Early identification of academic difficulties gives staff the opportunity to encourage attendance at the drop-in center. "The face-to-face time at the drop-in center has helped us (teachers and

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– Susan Shubert, Elementary Principal, Commonwealth Connections Academy

administrators) identify barriers to student's learning and provide solutions through a model 21st century virtual delivery system," says Susan Shubert, Elementary Principal of the Commonwealth Connections Academy. "In some cases, it's simply identifying a student that has trouble organizing information and making accommodations and modification to address the student's specific learning needs, such as providing graphic organizers and discussing note taking strategies."

In addition to providing support to struggling students, the center conducts events such as Craft Days in which all students are invited to attend special activities with their teachers and peers. CCA recently hosted Evelyn Coleman, an award-winning African American novelist, for the African American Read-In. Students in the Philadelphia center participated in activities in person while Evelyn presented live lessons via the Internet to students across the country.

Chicago Virtual Charter School

From its inception, the Chicago Virtual Charter School (CVCS), which uses curriculum, technology and school services provided by K12 Inc., was designed to incorporate a blended learning approach as a central component of the instructional model. In consultation with Chicago Public Schools, the CVCS board of directors made the decision to maintain a physical learning center located within the downtown Chicago "loop" area for central access to K-9 students across the city.

The learning center provides four major functions: core course instruction, remediation, parent training, and tutorial. Club and socialization activities are also available to students. All students are required to attend physical classes at the learning center a minimum of one day per week. Typically, the learning center teacher is the same teacher the students work with online, providing consistency and knowledge of the student's work.

This blended model requires teachers and administrators to think about time and instructional practices anew. "For our teachers, especially those new to our school, the initial challenge is more a matter of mindset than an academic change," says Jeanne Busch, Head of School of the Chicago Virtual Charter School. "When teachers are with their students face-to-face, they sometimes play the traditional role of teacher in front of class, but more often they are creating small and individualized instructional plans to meet the needs, gaps, and interests of their students. Many schools strive towards an individualized approach, but for us it's a daily reality."

Unlike brick and mortar schools where the teacher introduces new material and concepts to a class, CVCS teachers play the role of detectives and problem-solvers, identifying content areas where students need clarification of concepts presented in the online curriculum. In some cases teachers

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are solving individual student problems, while in others they are developing group writing projects, or conducting online, synchronous review sessions for middle school children.

The school maximizes cooperative learning and group decision making through whole-class and small-group, face-to-face instruction by making a conscious decision to emphasize the science curriculum in traditional classroom setting. The hands-on nature of science inquiry makes this an ideal subject for this type of instruction and most students are learning science at their grade level, compared with math and language arts where they operate at an individual pace. Students that are one or more grade behind in a given subject are required to attend the learning center for tutorial work at least an additional half day per week.

Hoosier Academy

The Hoosier Academy is an Indiana public charter school with two campuses, one in Muncie and another in Indianapolis, scheduled to open its doors for fall 2008. Hoosier Academy's board of directors works closely with Ball State University as the authorizing agency, and partnered with K12 Inc. to provide the schools' curriculum, technology and school services.

The blended approach of the Chicago Virtual Charter School and Odyssey Charter Schools has students spending a large majority of their time working with established online curriculum at home, supporting that virtual instruction with face-to-face instruction in a physical location. The Hoosier Academy will take a different approach, not only in the mix of time spent in the classroom in comparison to time working individually online, but also in the presentation of the largely online curriculum in the classroom.

Changes in Indiana education legislation now require at least 51% of the instruction in charter schools to be delivered in a face-to-face setting. The Hoosier Academy will meet this requirement by implementing a program that requires attendance at the physical learning facility two days out of the week. The two days of classroom attendance are longer than school days at traditional district campuses to accommodate the legislative requirements.

One of the challenges facing the curriculum team at the Hoosier Academy was how to take content designed for a fully online learning experience and translate that to the classroom. New technologies like interactive whiteboards bring the power of multi-media instruction, implicit in the online lessons, into traditional classrooms. Teachers also use synchronous online tools like Elluminate to conduct individual and group tutorials during the time students are at distance. "We work to make the learning experience seamless and effective whether the students are working with teachers in the classroom or at home with a learning coach," said Susan Furick, K12's Senior Director of Classroom Academics.

Kentucky Virtual Schools

Kentucky Virtual Schools (KYVS) and Kentucky Virtual High School (KYVHS) are working with local school districts across the state to offer blended learning opportunities through existing infrastructure and course content. Kentucky is one of the first states to implement a common P-20

course management system (CMS) platform, which has allowed KYVS to supply school districts with access to online courses for a variety of uses.

KYVS obtained funding to provide an additional 15,000 licensed users in the CMS in order to take online curriculum to the classroom. KYVS provides teacher access to a “course shell” for a year, and includes professional development, technical support, student help desk and the KYVS online content and mentoring for the classroom teachers. Teachers can enroll students in an online course to work both inside and outside the classroom, or they can use the CMS to bring online content into the classroom.

Professional development includes training on the CMS as well as coaching on how to effectively use online content in the classroom. Training is provided online and at physical locations across the state where teachers are grouped geographically, which begins the networking process among teachers in an area. “Some of our teachers have requested access to the online course content, while some teachers have wanted to gain access to the course management system,” says Jennifer Carroll, Branch Manager of Virtual Learning for Kentucky Virtual Schools. “When they realize they get both, and the training to help them be successful, their enthusiasm reaches an all new level.”

KYVS is working on a three-year blended learning research project in collaboration with the Appalachian Education Laboratory and the Collaborative for Teaching and Learning to document and compare student performance and teacher engagement levels. The study compares a group of students being taught with the KYVS online curriculum in a blended environment to another group of students in traditional face-to-face instruction. Thirty 9th grade algebra teachers, volunteers from across the state, have received professional development in the CMS, in blended learning techniques, and in teaching algebra using online tools. This is among the first extensive research studies designed specifically to gauge the effectiveness of blended learning with secondary students.

The blended learning strategy is part of Kentucky’s secondary reform initiative. “It’s impossible to address the needs of our students moving forward without change and innovation,” notes Linda Pittenger, Division Director, Division of Secondary and Virtual Learning, Kentucky Department of Education.

VOISE Academy, Chicago Public Schools

The VOISE (Virtual Opportunities Inside a School Environment) Academy is a new Chicago Public School (CPS) high school opening in Fall 2008 that is blending face-to-face instruction with fully online curriculum in its very first class of students. VOISE is a neighborhood school and will start with an initial 9th grade class of up to 150 students, adding a new class each year to service grades 9-12.

VOISE follows a traditional school calendar and daily class schedule with highly qualified teachers in the classroom, but gives students, and teachers, 24/7 access to the online content. The teacher acts as the instructional guide, providing introductions to class topics, assigning class or group work and deciding when the time is right for independent study and one-on-one mentoring. Students will be able to work at their own pace throughout much of the day or at home.

The core online curriculum is being provided by Apex Learning, along with other supplemental

sources (Aventa Learning, Illinois Virtual High School, Florida Virtual School, and Cognitive Tutor). The course diagnostics and assessment features of the online content allows students and teachers to readily know exactly where the student is in each course, and gives teachers the opportunity for early interventions if the student is showing signs of struggling. The student has the flexibility to work on courses individually during periods of class time or at home to either make up work or accelerate the pace of his/her learning. With the online curriculum and learning management system, the teacher can work with students in small groups or individually. In addition to the online content, the teacher will provide weekly class activities or projects to tie the online lessons to real-life.

The VOISE Academy is being created under CPS' Renaissance 2010 initiative, and is thus located in a neighborhood identified as underserved. Students are assigned wireless laptops to take from class to class each day, with refurbished computers and Internet access made available to students for home use.

One of the challenges in establishing VOISE Academy has been communicating how the instructional model works and the value it brings to the educational experience. "Most educators, administrators and parents do not understand this innovative instructional model," said Dr. Sandra Atols, Manager of Distance Learning, Office of High Schools and High School Programs. "Changing the culture so people understand how a teacher can use technology in the classroom to facilitate class, group and individual instruction is critical. Teachers are expected to do differentiated instruction in the traditional classroom which is difficult, if not impossible, to fully achieve due to time constraints. In a blended model, teachers actually have the time and opportunity to work one-on-one with students and achieve real differentiated instruction."

VOISE is making school-wide projects part of a process to utilize technology, hone 21st century skills, and make learning relevant. The first project tackles the question of "Should the Olympics be in Chicago? TAKE AN EDUCATED STAND!" Students will be working with the Northwestern University Collaboratory to help identify issues and impacts of bringing the Olympics to Chicago. This integrated project is designed to enhance students' academic knowledge, communication, and collaboration skills as they learn the "who, what, when, where, how, and why" about the Olympic Games and share and collaborate with other schools world-wide.

The Community High School of Ann Arbor, Michigan

The Community High School online program began in a similar way to other online programs, providing online courses to supplement schedules and graduation requirements. However, what began as a way to provide an online version of a required American Government course to students struggling with senior year class schedules has blossomed into a blended learning environment with a twist.

In 2006, the Community High School applied its maturing online and classroom instructional model to an already successful work experience program. The Community Resources Program (CRP) lets students take classes in a variety of community settings for high school and college credit, utilizing local businesses and professionals to provide a real-world education. The school had an opportunity to combine its online approach with the CRP when Google Ad Words moved to Ann Arbor. These two organizations have partnered to offer an Internet Advertising course in a truly blended learning environment. Students meet in a classroom, using a combination of text and online curriculum,

supplemented by weekly visits from Google staff who teach the ins and outs of Internet advertising. Students learn the laborious and sometimes tedious tasks of data gathering and report generation as well the excitement of working with the Internet and a high-profile corporation like Google.

A valuable part of the Google course requires students to complete a real-world project with a local nonprofit organization, donating their time to the chosen organization. One group of students chose SOS Community Services, a homeless shelter, for which they built an Internet advertising plan that provided \$14,000 in grant-funded marketing services to the organization.

Students complete the course with newly acquired, marketable skills and exposure to the value of community service, all enabled by a blended learning environment that goes beyond what any one instructional method could have provided.

Omaha Public Schools

The Omaha Public Schools eLearning Program has instituted a blended learning program designed for credit recovery students. Omaha provides a physical location where students work with online curriculum in a lab setting with highly qualified instructors. The teacher determines how much time the student needs in the physical location and transitions the student to more distance work as his or her online study skills and level of motivation dictate.

In addition, the eLearning Program has established a “tandem development process” in which all of the online content is being assembled in a learning object format as well as full courses, giving teachers quick and ready access to online content in the classroom. Access to quality content with the flexibility to customize courses and learning objects across disciplines has been difficult to find. The time and skills necessary to develop quality object-oriented content is daunting, but eLearning is developing the in-house skills to do so. The eLearning Program has worked with the Monterey Institute for Technology and Education (MITE) to establish an internal content development process similar to the social authoring model established by that organization. “Looking at best practices has helped tremendously in starting our online initiative,” says Rachel Wise, Secondary Director of Omaha Public Schools. Networking through educator communities has given Omaha the ability to move quickly in establishing a technology infrastructure and online content development.

Although the Omaha Public Schools vision for blended learning grew out of an initial application in credit recovery, it has grown to encompass all secondary instruction, both online and classroom. Omaha’s eLearning Program leaders argue that most students who leave the classroom due to truancy, behavioral issues, or family, legal or health situations will likely return to the classroom sometime in the process of getting their diploma. If the blended learning model exposes every classroom student to online curriculum, and every teacher gains a level of comfort and competency in the online learning environment, then any need for learning outside the classroom can be accommodated without disenfranchising the student.

Lessons learned

What are the key lessons that these and other blended programs demonstrate?

First, there is no single type of blended education, and over time we can expect all the spaces along the continuum from fully online to fully face-to-face to be filled. Online curricula will evolve as a ubiquitous component of classroom instruction. At the same time, an increasing number of programs that are primarily distance-based may include a face-to-face teaching component. Programs designed to use a blended approach from the outset are still in a learning mode, and experience and data will provide guidelines, but absolutes will be hard to find. "As blended learning evolves it needs to stay student focused and avoid artificial, mandated boundaries," says Susan Stagner, Vice-President, Management and Services, for K12 Inc.

Second, in the same way that online teaching is recognized as different than face-to-face teaching, blended learning is also unique and requires new methods of instruction, content development, and professional development. Online program leaders know that they cannot simply use face-to-face teaching methods in an online class, and vice versa. In addition, as content delivery becomes increasingly digital and online, assessments will need to be designed to test for content presented in various formats.

Third, for school districts and programs that use both fully online and blended courses, content will need to be readily accessible as learning objects to support both types of instruction. Text-based content will be less effective than animation, video, simulations and other engaging and illustrative content that can convey concepts visually and dynamically, more effectively than either paper or an instructor drawing on the blackboard. Teachers will need to be able to access online content quickly and easily to keep the flow of the classroom instruction moving.

Fourth, because blended learning relies on a significant level of web-based communication and content, it relies on a course management system or a learning management system to organize the content and facilitate communication. The presence of software that organizes the course may, in fact, be a distinguishing characteristic between a truly blended course and a face-to-face course that simply incorporates a few digital elements.

Finally, because blended learning can vary in many ways, it may present challenges for research and policy. Because it does not make sense to attempt to fit education into pre-set conceptions based on old methods of teaching and learning, state education policies should allow innovation in directions that may not be foreseeable at this time. In addition, research efforts aimed at quantifying the effects of educational technologies should account for the myriad types of learning that combine online and face-to-face delivery.

Looking ahead

The examples of blended learning profiled in this paper show that there are already many schools combining online and face-to-face education in the United States. We are, however, only at the beginning stages of the adoption of ubiquitous computing in classrooms across the country. Early adopters are demonstrating the value of online learning and technology in the classroom, but there is a long way to go before every student in America has the option to benefit from a 21st century approach to teaching and learning.

At its core, education teaches information gathering and critical thinking. As the United States economy increasingly moves towards being based on information and services, more and more jobs—and indeed entire sectors of the economy—require that workers be able to acquire information, analyze data, and act on their newly created knowledge. Too many schools are still attempting to prepare students for this world without teaching within the mode that students will find when they move on to post-secondary education or the workforce. Instead, we appear to be preparing students for information-based jobs where they will share a single desktop computer with 25 co-workers—jobs that clearly do not exist.

Post-secondary institutions recognize and are acting on technology trends. According to a study published by the Educause Center for Applied Research (ECAR)¹, over 98% of college students responding to a survey own computers, and nearly three-quarters of the respondents own laptops. For the large majority of these students, online learning is one of the main uses of their computers, as 83% of the respondents had used a course management system that integrated an online component into their classes. Online technology is a major part of these students' daily lives, as 78% reported downloading music or videos, and 82% use social networks. In addition, many countries are adopting online or blended learning at rates that far exceed the United States. For instance, in Singapore 100% of secondary schools (grades 7-10) and 85% of primary schools (grades 1-6) are using a learning management system.

Online learning, whether at a distance or within a classroom, is a catalyst for change, as schools are using Web 2.0 technologies to engage students and enhance collaboration in new ways. For example, collaboration between the Public Library of Charlotte and Mecklenburg County and local schools in North Carolina is resulting in a project designed to create a teen library in the Second Life virtual world environment. Teen Second Life, a subset of the popular virtual world Second Life, is separate from the adult world and is only accessible to those ages 13-17. Students and educators from around the world are involved in creating a library that includes a wide assortment of content including streamed audio and video of authors, politicians, or other teen-related speakers; building, scripting, and designing classes taught by teens and adults; book

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– Chris Lehmann, Principal and Co-founder, Science Leadership Academy, Philadelphia

¹The ECAR Study of Undergraduate Students and Information Technology, 2007, by Gail Salaway, Judith Borreson Caruso, and Mark Nelson. Educause Center for Applied Research

discussions; book publishing; walk-throughs of book or movie scenes; and art displays².

One-to-one computing programs using laptops to connect the student, the classroom and the teacher are another example of cutting edge blended learning. The Science Leadership Academy is a new Philadelphia public high school (formed in 2006) that uses a project-based approach to achieve five core values: inquiry, research, collaboration, presentation, and reflection. Highly qualified teachers focus on one-to-one learning, using online curriculum and Web 2.0 technologies to create a new learning environment within a traditional brick and mortar facility. All students have laptops with access to a course management system and social networking software to foster collaboration. Students conduct research and make presentations of their projects both in the classroom and online.

The use of computers and online learning in education requires a much larger shift in thinking than simply adding a few computers to classrooms. Truly blended learning requires that teachers approach their role differently, as guides and mentors instead of purveyors of information. Classrooms must be redefined as flexible learning environments, in which students learn in a variety of ways, while communicating and collaborating with others who are outside their school—and perhaps outside their country. Learning should go beyond the classroom walls and the confines of the school day. For these changes to be successful they must be supported by professional development for existing teachers, and pre-service education for future teachers.

Some educators realize that the roles of schools, classrooms, and teachers are already changing. “You’re talking about a new paradigm for both teachers and students, no longer defined by the four walls,” says Chris Lehmann, principal and co-founder of the Science Leadership Academy. “A school’s use of Web technologies must transform learning.”³ Or, as Nicholas Negroponte, founder and chairman of the One Laptop per Child non-profit association, says, “True personalization is now upon us.”⁴

²<http://plcmc.org/teens/secondlife.asp>, <http://plcmcl2-about.blogspot.com/>, and conversation with Kelly Czarnecki, Librarian, Public Library of Charlotte and Mecklenburg County, February 8, 2008

³EdTech Magazine, <http://www.edtechmag.com/k12/issues/march-april-2006/best-practices.html>

⁴Nicholas Negroponte, *Being Digital*, Alfred Knopf, 1995



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