

New NY Education Reform Commission

October 11, 2012

SUNY Old Westbury

BOCES Educational Consortium Testimony

Good morning/afternoon. My name is Dr. Lydia Begley and for the past year, I have been the Associate Superintendent for Educational Services at Nassau BOCES. Prior to that, I spent almost thirteen years in the Wantagh School District, first as its Assistant Superintendent for Instruction and then as the district's Superintendent of Schools. I have been asked to address the Commission specifically on the potential for new and emerging technologies to transform aspects of the education system in the state of New York.

In addition to providing direct instruction in special education and Career and Technical Education, Nassau BOCES oversees technology integration for all of our partner districts, including hardware, software and infrastructure installation and maintenance, on-line learning for children and adults, and professional development for teachers and leaders. Last year our technology help desk resolved over 50,000 calls.

We are well aware of the Commission's three primary goals:

- To examine the structure and efficiency of the our public educational school system;
- To ensure teacher and leader effectiveness; and
- To raise student achievement for all, despite challenging socio-economic circumstances, utilizing emerging technologies

New and emerging technology tools hold the potential for simultaneous solutions to each of these major challenges. BOCES' partnerships with our school districts, professional development offerings, and technological infrastructure position us to lead in the adoption of new instructional platforms.

Detail

When thinking about new technologies, the commission should picture multiple domains:

- New types of technology-rich instructional materials and curricula aligned to national standards;
- Adaptive technologies, designed to help learners with special needs;
- New means of capturing, analyzing and acting on data about students' areas of mastery and where they struggle; and
- New instructional models that technology makes possible.

I'd like to offer you just one example of each of these to ensure our conversation is as broad as the opportunities available.

- Instructional Materials – tablet computers already make possible electronic textbooks that can be updated in real-time, contain material from a variety of sources, are customizable, and are weightless in a backpack.
- Adaptive technologies – exciting new “apps” are adapting tablets and computers to serve the needs of students with communication difficulties, cognitive deficits, or autism spectrum disorders.
- Data warehouses – large repositories of student achievement data can be mined with “recommendation engines” analysis that can help tailor instructional materials to specific challenges faced by different learners, classes, and schools – much like an on-line retailer might suggest a book you'd be interested in reading or an accessory to go with something you purchased.
- Virtual learning – classrooms can now be comprised of students not physically present in the same space, or even the same time; nor must all instruction be lecture-based. “Hybrid” and “flipped” classrooms where teachers become coaches, and students are assigned lectures or homework from the internet already exist and will become increasingly common.

I have appended to my testimony a glossary of some of these new technologies and new classroom organization schemes.

Benefits of Virtual Learning

Pursuing technology for its own sake would be an expensive mistake, and there are certainly examples of underutilization – “smartboards” that are being used as glowing blackboards, on-line drill and practice tools that mimic worksheets in every way including their weaknesses, computers that sit idle in classrooms. Accordingly, investments in technology must be made as part of a plan to leverage the very significant potential benefits they offer, such as:

- 1. Access:** All students can participate in any type of learning content, whether that content is advanced placement courses or credit recovery. As school districts examine ways to manage their increasingly scarce resources and make hard choices regarding courses to preserve or invent, virtual learning may provide a cost-savings solution.
- 2. Capacity:** Since virtual learning is not restricted to a particular building or location, districts are not bound by physical space and the school’s infrastructure is not infringed upon.
- 3. Time:** The flexibility of asynchronous learning eliminates time restraints and potential scheduling and location conflicts.
- 4. Engagement** – Students of today are digital natives; they are comfortable with emerging technologies and expect their classroom and teachers to integrate Web tools.
- 5. Individualized learning:** For some students, traditional schooling is not an option. Illness, disabilities or other issues may prevent them from going to classes. Virtual learning can provide such students with a high quality education that can still be interactive and meaningful.
- 6. Equal Opportunity:** Students can receive the same education regardless of income, status, gender, race, age, or area of residence.
- 7. Integration of results** – Using a student management system with a content provider can provide automatic integration of students’ results. Both the teacher and the student benefit from rather instantaneous information about progress.

Implementation Challenges and Solutions

As schools begin to implement these varieties of learning experiences, questions regarding learning platforms, availability of use, access and cost abound. Here is where economies of scale can be realized utilizing a regionalized infrastructure like BOCES:

- We have the ability to vet potential content providers and engage in contracts with vendors who have designed a safe and secure environment.
- Our curriculum projects, based upon New York State standards, can be embedded into a content management system with ease.
- Our servers can manage learning resources that are critical to virtual learning.
- Our data warehouse is a repository of information that can provide teachers and students with assessment and achievement data.
- Our professional developers can stay abreast of the research and technology models that promote positive results and can ensure that teachers and leaders are able to maximize the impact of their technology investments.
- We have the ability to engage interested districts in pilot projects and collaborative inquiry. Essentially, we create our own community of learners.
- We have the support infrastructure to ensure that these technologies are maintained, updated, and repaired to maximize their return on investment.

Conclusion

Thank you for your attention, time and interest in what we believe are exciting times for our students and teachers. The technology revolution is similar to a time when our nation was undergoing an industrial revolution. The rapidly changing landscape of technology demands our attention and requires us to think differently about the ways in which we educate all of our young people to become globally competitive and technologically capable. Virtual learning is just

one way to accomplish this challenging goal. We at BOCES look forward to leading the way and ensuring that our students, teachers, and districts have the tools necessary to change the rich complexity of today's classroom.

Virtual Education Glossary

When we hear the term “virtual learning”, many images may cross our minds. Many of us recall the term “distance learning” which actually dates back to at least as early as 1728 and was designed to deliver weekly lessons to students in the new method of Short Hand. Later, colleges, including the University of London and the University of Chicago offered extended learning opportunities to promote education and even grant degrees. More modern technologies (i.e., the development of computers, tablets, and the Internet) have made the concept of distance learning easier and faster and have created virtual schools and learning institutions. In fact, it has been reported that more than 96 percent of the very largest institutions (those with more than 15,000 total enrollments) have some sort of online offerings and the percentage of US students who take at least one online course continues to grow.

Distance Education – Further Defined

Synchronous learning - There are two categories of distance learning that incorporate various types of technology. The first, synchronous learning, is one that many of us are familiar with and may have even participated in. In this model, participants are essentially all “present” at the same time. This looks like a traditional classroom despite the fact that students and/or the teacher may be in different places. Students can communicate using microphones and places to chat “safely” with one another and the teacher.

Years ago, many BOCES throughout the state, including Nassau BOCES, were actively involved in this form of distance learning where a designated classroom space was outfitted with a large videoconferencing unit and connected a small group of students synchronously with another small group of students in another school. The classroom teacher in this “distance” model was televising from one location and projecting content and information through the television to the students who were viewing the telecast. This early attempt at learning “virtually” was successful for years because it allowed districts to offer courses that were under enrolled (such as electives). Typically, the cost of such a course would be prohibitive and a district might not have been able to afford it independently. Costs were shared between districts, thereby allowing access to interesting courses in a fiscally prudent manner.

Asynchronous learning - The second type of distance learning is known as asynchronous learning. This mode of delivery allows students to have access to materials, content, assessments, etc. at their own convenience and in their own time. Learning is often “self-paced” and students are expected to complete assignments and projects. Students can move through curriculum modules at their own pace, thereby providing a flexible learning environment that does not require either the instructor or the student to be present at the same time.

Blended learning - A blended or hybrid model of instruction may incorporate both synchronous and asynchronous learning. A combination of face-to-face interactions with computer-initiated learning opportunities permits learners and teachers to work together both in the actual classroom and then offline. In this model, teachers and students may truly create the best of both worlds and makes use of the newer technologies while maintaining the human connection and social supports that are part of the traditional classroom setting.

However, as technology rapidly changes, so does the need to examine different modes of distant learning. Large televisions and bulky equipment are now outdated and students’ familiarity with computers, the Internet and new devices such as Smartphones and tablets need to be incorporated in the learning process. School districts and BOCES throughout the state are faced with the challenge of integrating new modes of learning with new emerging technological advancements. At Nassau BOCES, a network was created called Bo-Tie that offers our school districts the chance to connect Internet and telephone services and realize significant cost savings. The ability to enhance one’s Internet capability now positions our districts to take advantage of all kinds of learning experiences involving technology without worrying about interrupted Internet connections or bandwidth reductions. The field is ripe with possibilities.

What emerges are different modes of learning and BOCES is at the forefront. The outdated distance learning model is revamped and the idea of “virtual learning” is created. Other states such as Chicago and Florida have led the way with this initiative and have created virtual schools whose focus is on students’ ability to learn “virtually” anywhere – in the classroom, in the library, or even at home, as long as technology is available to them.

Today's virtual learning can take on many forms:

- Simplistically, it can be an on line course that disseminates professional development modules to teachers and curriculum content to students. This can be self-paced and individualized.
- Fundamentally, it is an education system that models conventional real-world education using the Web by integrating a set of equivalent virtual concepts for tests, homework, classes, and classrooms. It can include "virtual" experiences or trips to museums, art galleries, etc. and use Web 2.0 tools to create an interactive, collaborative environment. A content management system that is either propriety in nature or available through open sources permits the user to publish, edit, and modify the web-based content.
- A virtual learning environment and instructional platform (such as Moodle or Blackboard) is open to all and is interactive where content, assessments, grades, Internet links, and videos are available to learners. Social spaces such as blogs and wikis are embedded, providing teachers and students with an opportunity to interact with one another through threaded discussions. Typically, most colleges use a platform like this to encourage students to participate in class even when they are not required to actually be on campus. Learning can literally be accomplished at any time during the day or night with the instructor monitoring students' participation, assessments, and interaction with one another.
- A virtual learning environment can also include students and teachers engaged on line at the same time. This synchronous "meeting" allows a teacher to present lessons through video, PowerPoint presentations or chatting. Students can talk with each other and the teacher, collaborate, and create and pose questions. The actual application has tools that enable them to send messages, answer questions from the teacher on the computer screen and virtually "raise" their hands.
- A virtual environment known as the "flipped classroom" makes better use of class time for students and teachers by introducing curriculum content from archived videos (i.e., Khan Academy. Scores of content lessons are

available for students to access from home which enables the students and teachers to utilize class time for differentiating instruction and collaborative projects. Large group instruction which fosters the notion of “teaching to the middle” is reduced and the instructor has the ability to act as a facilitator of instruction (e.g., the guide rather than the sage on the stage).

References

Retrieved from: <http://dwhiggins.org/the-benefits-of-a-virtual-education>

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