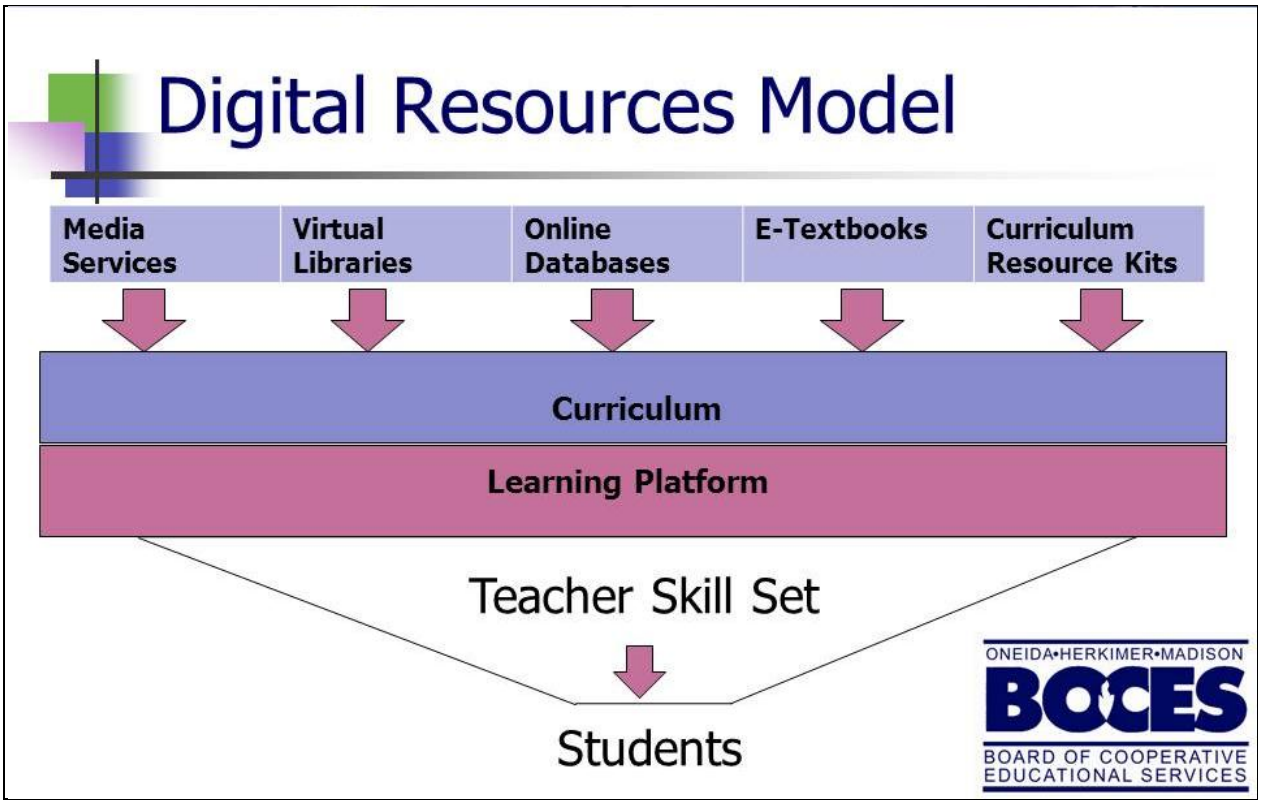
21st Century Education

Anytime, Anywhere

Oneida-Herkimer-Madison BOCES seeks to raise student achievement by innovative use of an online learning management system and instructionally sound curriculum and assessment utilizing media-rich digital resources aligned with state and national standards. This approach to 21st Century learning gives students a competitive edge and allows teachers to customize learning. It includes professional development and curriculum development which, when done collaboratively, has been shown to improve teaching effectiveness. Varying student needs are addressed through three delivery options:

1) **Credit Recovery** – for students who have failed a course or state exam.
   a) Students receive credit by demonstrating competency in the deficient areas.
   b) It eliminates seat time requirement posed by retaking the course.
   c) It must be taught by a teacher certified in the given subject area.
   d) Quizzes and tests are provided in a proctored environment.
2) **Online Supplemental or blended instruction**:
   a) Supplemental instruction adds a 24/7 web-based component to regular class instruction.
   b) Blended courses combine face-to-face and online instruction, enhancing traditional classroom instruction.
   c) Online features such as quizzes, grading, and discussion boards are available.
3) **Online Instructional Delivery**
   a) An online certified instructor and Learning Management System provide instruction.
   b) Curriculum content and resources are Web-based.
   c) E- Textbooks can replace traditional textbook.
   d) Content includes links to third party material.
   e) The Learning Management System is used to monitor student progress and participation.

The digital resource model visualized with the diagram below shows how existing web-based resources can be leveraged to facilitate teaching and learning. A description of each of the elements follows.



Media Services: Have over 50,000 titles of digital media, copyright free music clips, live television streaming, digital recording, and many additional digital resources, all available through a robust search engine.

Virtual Libraries: Includes a virtual reference library, fiction and non-fiction e-books, and audio books.

Online Databases: Are available to schools on an a la carte menu, allowing districts and schools to choose from over 150 databases such as Grolier, Ebsco, Facts on File, AP Photo Archive.

E-Textbooks: Can be ordered as needed by the districts. In addition, we are working with publishers to obtain access to textbook resources or parts of individual textbooks as needed. We also are co-developing digital resources with a major publisher.

Curriculum resource kits: Started with supplying local schools with elementary level science kits. It is expanding to include materials that may be needed for other curricula areas and grade levels, but would be too expensive for schools to buy on their own. By sharing these kits, we make the materials more affordable.

Curriculum Development: The above resources are helpful to teachers and students, but unless they are integrated into a cohesive educational plan, they are of limited value.

We bring together exemplary teachers from the region to create curricula that form the foundation upon which these resources can rest. Curriculum development that is linked to Common Core and New York State standards includes a condensed outline, expanded outline, daily lesson plans, and section details for the subject. They incorporate the rich resources described above as appropriate and provide a roadmap for new and experienced teachers alike. To date, we have developed curricula for seven courses and have an additional five in process. It is a continuous improvement model with each curriculum reviewed for refinement each year.

Learning Management System: When the curriculum, standards, and related resources are loaded on a learning management system (LMS), the power of the digital model comes to life. The LMS can link every instructional event and every assessment item with the standards, providing a powerful feedback loop available to teachers, students, parents, and administrators.

- **Teachers** have benefited from the collegiality and sharing of resources during the curriculum development while knowing that they are contributing to best practices in the field. They appreciate the ability to keep resources at their fingertips anytime, anywhere. One teacher calculated that approximately two weeks' time was saved by using the LMS over paper grading throughout the course of the year. Many have noted the feedback loop helps them to fine tune their instructional strategies easily. For example, results of a test provide instant item analysis and links to both standards and instructional items, allowing teachers to modify instruction the next day. Teachers also note increased accountability for students and the ability to vary instruction based on the needs of each student.
- **Students** have benefited by having access to instructional resources, from flash simulations, to annotated and narrated presentations, to class notes, streaming media and discussions. They can easily review a presentation from class, ask a question of the teacher or other students in the discussion area, or retake a quiz until they are satisfied with the result. Students not only are more accountable, but are more responsible with this system. Students report that the system prepares them for college where they will be expected to take online courses or use an LMS in a traditional course.
- **Parents** appreciate being able to see details of student progress, rather than only the five or ten week grade with a comment attached. They can check on homework submissions, grades, even class participation by noting the amount of time spent on the system. Parents can communicate with the teacher using the system or by email. In one third grade pilot project parents and their children logged into the system as many as 150 hours outside of school.
- **Administrators** are just learning about the advantages of the system in terms of the above mentioned benefits to their constituents. Administrators have expressed interest in statistical analysis of usage and in tracking student achievement and persistence. They

also have expressed interest in use of the platform for formative and summative assessment, particularly in linking those assessments to standards. This can be a powerful tool for tracking Annual Professional Performance Review data.

Teacher Training: Is a very important final step in preparing teachers to use the curriculum resources and learning management platform. Our 30 hours of instruction on the platform includes training on how to teach with and authoring on the system. Teachers are introduced to the curricula resources, provided pedagogy on online blended learning, and time for practice in a supportive, structured environment. Additional in-depth training on the digital resources is also available.

Students: This is what it's all about! Our goal in designing this comprehensive digital model is to make teaching and learning more efficient, effective, and enjoyable. We aim to raise student achievement, increase accountability of teachers and students, and enhance communication between teachers, students, and parents.

With this model in place, OHM BOCES is able to:

- Assess students' strengths and needs,
- Identify and develop the correct educational program,
- Provide resources to teachers and students anytime, anywhere, any content,
- Continually analyze student progress and adjust instruction,
- Use assessments to improve instruction, and
- Use technology effectively to amplify good teachers' abilities to reach students.

With all of these resources in place you have a compelling reason for one to one computing and Bring Your Own Device (BYOD). Without these resources you have a glorified word processor with a few apps.

Barriers to effective implementation are:

- Inadequate infrastructure including lack of bandwidth, inadequate networks, and limited access to digital resources,
- Inadequate and outdated technology for students and teachers,
- Inadequate training of staff who deliver virtual learning, and
- Lack of understanding on certification for virtual instruction