Transforming Learning with Technology

The commonwealth of Virginia is leading the way with innovative technology solutions in K12 school divisions around the state. Here are some examples of divisions that have implemented a variety of technologies to help their students achieve their learning goals.

**Arlington Public Schools, Jamestown Elementary School**

**Blended Technologies Implemented:**
iMacs, MacBooks, iPod touch, iPad, iLife and iWork Productivity Suites

**How the products impact teaching and learning:**
Jamestown is using blended digital learning developed to support the implementation of Challenge Based Learning in three areas, 4th grade, 2nd grade and in one Special Education classroom. The division had tremendous success in engaging students in thinking deeply to find creative solutions to problems in the school and community. The immediate, transparent, access to technology was empowering to the learners. The students had access to do research on their topics, create surveys and tally results as well as record and present their findings and solutions in powerful multimedia creations. One of the student teams created an iPhone app to teach other students and the community how to recycle more effectively!

The students also participate in a global project called “Rock Our World” which connects classrooms across the world to compose music, make movies and meet, using technology. All 40 schools in Rock Our World study the same topics and share what they learn with their global peers.

**Results:**
Jamestown SOL Math scores for 2011
Grade 3: 96% pass rate with 78% of students scoring in Pass/Advance Range
Grade 4: 97% pass rate with 76% of students scoring in Pass/Advance Range
Grade 5: 99% pass rate with 89% of students scoring in Pass/Advance Range: 64% of these students scored 600 - the highest possible score on the test

**Funding Source:**
Local school funds

**Northampton County Public Schools**

**Blended Technologies Implemented:**
MacBook, iPod touch, iPads, iOS Developer Program

**How the products impact teaching and learning:**
The division began with using the iPod touch with kindergarten classes because the teachers were looking for a way to ensure that all of their students were able to learn the content. The iPods were placed in learning stations and the students viewed the videos or apps on a daily basis to reinforce the skills they were learning in class.

Their bigger project is one that deals with developing S.O.L. apps. They have combined the use of school student gmail accounts, teacher websites, videos created from the xtranormal text to video site, Discovery education videos, Google images, flashcards, and Power Point presentations and have created online lessons that the students can complete independently. They now have three lessons published in itunes under Northampton County Public Schools: The Great Depression, Westward Expansion, and the Holocaust. At the kindergarten level, the teachers are recording the books they read to their students and we are incorporating those videos into the apps for our students to listen to. They are just getting started on this huge project but are pleased with the early results.

**Results:**
At the beginning of the school year, RTI set the benchmark for letter recognition and sounds for the kindergarten students at 80%. When the students were tested at the end of the year they had exceeded their benchmark and had achieved 98.8% mastery. The only difference in instruction was the addition of the ipods.

**Funding Source:**
State funds, local funds and Title funds
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Henry County Public Schools

**Blended Technologies Implemented:** MacBook, iPod touch, iPads, participated in the Beyond Textbooks pilot

**How the products impact teaching and learning:**
The Beyond Textbooks for two 4th grade classrooms served as the catalyst to move all students in all 4th and 5th grade classrooms to a one to one initiative with the iPad. Through a rigorous professional development program, the division trained teachers, students and their parents on the use of technology. The school division purchased 1,750 iPads last year and are adding third grade this coming year as classroom sets.

The teachers are using the digital tablet to enhance and extend their lesson plans. Special needs students participate in classroom activities just like other students.

**Results:**
From the Technology Director Janet Copenhaver, "...students are more engaged - they have been living in the 21st century for 11 years and finally have a technology tool that is real world application and one that fits their digital native minds. One autistic child could only say one word and did not communicate with anyone. With his iPad and Talking Tomcat - he has increased his fluency and vocabulary and even wrote a book which he read to the School Board at a meeting."

**Funding Source:**
Beyond Textbooks Pilot, ARRA funding, local funding

Pulaski County Public Schools

**Blended Technologies Implemented:**
Starting with the iPod touch (iLearn Project), the division has expanded to use of iPads (Beyond Textbooks Pilot) and Power Walkthrough

**How the products impact teaching and learning:**
The iLearn Project, a partnership with New River Community College and Radford University's Games Lab, was initiated to design SOL-aligned interactive mobile games to study the impact of these products on student engagement and learning. It provided for the implementation of SOL-aligned iPod touch applications within the 4 content areas, and was integrated in classrooms through all developmental levels of the school division.

The Power Walkthrough process uses McREL research as its foundation. The process allows school leaders to collect multiple data points on observed teachers. During their classroom visits, school leaders examine a variety of research-based “look-fors,” including indicators of student engagement, level of knowledge taught and the instructional strategies. The Power Walkthrough app works on the iPad which have been provided for all central office and building level instructional leaders.

**Results:**
With this important observation data, instructional leaders can begin engaging in reflective conversations with staff and teams to look at where they are, where they want to go, and what they are going to do to get there.

**Funding Source:**
Governor’s Productivity Investment Fund, Enhancing Education Through Technology competitive grant through the Virginia Department of Education
Blended Technologies Implemented:
MacBook Pros, iPods, iPads

How the products impact teaching and learning:
NRCC created the very first game design and development degree program in the State of Virginia in 2006. NRCC Games is an outgrowth of the college’s game degree programs. All games are designed around a Standard Of Learning objective and are free. “The NRCC Games team of 6 students has been a successful project. We have over 54,100 downloads to date for the 7 current games through the Apple App store. This team of students has done a fantastic job of creating these educational games from start to finish. We learned many animation effects, programming and physics engines, as well as narration with our most recent game, Aesop’s Quest. The entire team collaborates on all aspects of each game so each game contains ideas from every team member, including me. These are games created by students for students.” says Carlotta Eaton, professor of information technology at NRCC and head of game technology programs.

Results:
The IT Game Design program allows for direct transfer into Radford University’s Computer Science and Information Technology degree programs. Students in the program experience team effort, collaborative learning skills, design, programming, project management, multi-media content creation and management and sound design. The educational games developed are in use by VA K12 districts and benefit students worldwide. The 4 games in the Leo and Luna Series are being used for ESL in South Korea, Singapore, Saudi Arabia, the Philippines and Mexico.

Funding Source:
The NRCC Games team is part of the iLearn Project, funded by an EETT Grant (Enhancing Education Through Technology) from the VA Department of Education working in collaboration with Radford University Games Lab team, Radford City Schools and Pulaski County Schools.