

## What Should Classrooms Look Like in the 21st Century?

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Today's students no longer compete for future jobs within state or national markets but rather an international one. If our students are to become competitive, I strongly believe educational leaders need to provide these students with the best teachers as well as 21st Century teaching and learning environments, and technology needs to play a bigger role in this new movement.

Today's world is not the same as when you and I went to school. Now, 3,000 books are published daily. It is estimated that 1.5 exabytes (1.5 x 10<sup>18</sup>) of unique information will be generated worldwide in one year. It is estimated that there will be more information generated in one year than in the 5,000 previous years, and the amount of new information will double every two years. For students starting a four-year college degree, half of what they learn in their first year is outdated by their third year of school. (Source: *Shift Happens* video)

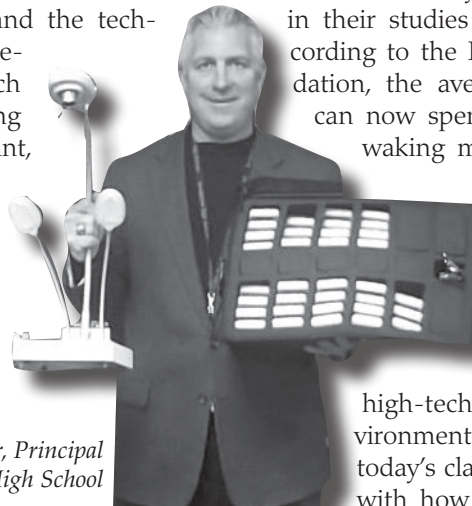
When faced with this information, what should schools look like? What does this do to the concept of textbooks? How do teachers and students stay current in this new world?

In attempting to find answers to these questions, I had several experiences that shaped my thoughts.

- As a young teacher, I heard an educational futurist speak. He showed us a picture of an actual classroom taken in the mid-1800s and then showed us a picture of a classroom today. The two pictures were remarkably the same. It was shocking to me, with all the changes in science, transportation, communication, and technology, that so little change was noticed in teaching and learning environments. This began my search for the tools needed to better prepare students for the 21st Century.
- As a young administrator, my superin-

tendent entrusted me with \$10 million to build a K-12 technology plan for seven schools. This experience taught me that the curriculum is the constant, and the technology is the vehicle in which to enhance learning and make it relevant, real and engaging for students. When integrating technology, there always needs to be a strong link from the technology to

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the curriculum objective.

- The third experience was reading a short article by Marc Prensky, (2001) *Digital Natives, Digital Immigrants*. Prensky states that people born before 1982 are digital immigrants since they have not been raised with technology tools, yet people born after 1982 are digital natives. These people were raised in a culture of technology. This phenomenon created what he called a digital divide where we have students who are digital natives and teachers who are digital immigrants. Prensky suggests that we need to close this divide for the sake of students.
- The fourth experience is being a digital immigrant parent and raising digital native children. I have observed the way my children learn, study, and communicate. It is common place for my teens, while studying, to have the computer on, texting on the cell,

communicating on MySpace, IMing 12 different friends on the computer, music blasting in the background on the iPod, but they still seem to do well in their studies and in school. According to the Kaiser Family Foundation, the average young American now spends practically every waking minute — except for the time in school — using a smart phone, computer, television or other electronic device. Since students now thrive in a high-technology learning environment at home, why can't today's classrooms better align with how students study and learn?

For the last 15 years as a principal in elementary, middle and high schools, I have been working hard to close the digital divide. In the last several years, I have worked with staff members to place technology in their hands and the students' hands to begin to change the teaching methodology and add rigor and relevance to learning while integrating the technology with the curriculum.

It is important to note that there is no single type of 21st Century classroom. There are many different tools that can make up an interactive learning environment. Listed below are just some of the tools I feel are needed to make our students more globally competitive.

What is in the Sanderson 21st Century teaching and learning classroom?

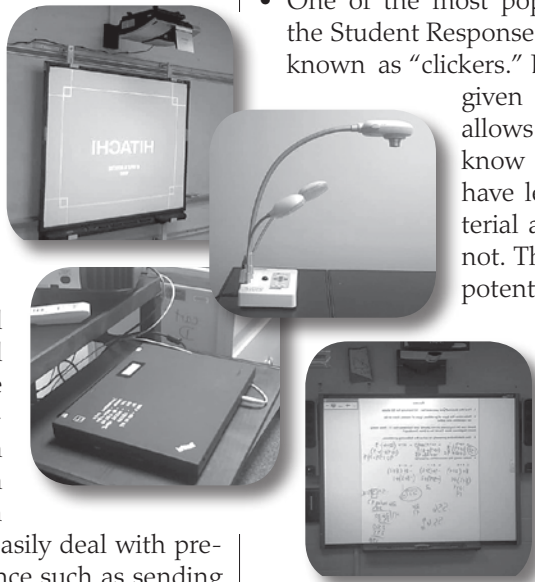
- Teachers seem to prefer the “touch technology,” and the technology industry has begun to move in this direction. Teachers touch the white board and create changes with a touch

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of their finger. One touch can change colors, enlarge shapes, move items to different locations, launch different software and even access the Internet to show up on the big screen. This tool allows students to virtually see difficult problems and to understand concepts laid out in simple terms. This tool is very interactive, and students enjoy the board's ability to create learning relevance.

- The class has a mounted digital projector. This projector is responsible for driving all visual aspects of the lesson. The projector communicates and integrates with all the tools in the room. This system also has an IP address which allows a system administrator to easily deal with preventive maintenance such as sending e-mails when the machine needs a filter changed. This communication allows for more constant reliability of equipment for students and staff.
- The rooms are also equipped with an audio enhancement system. This system is responsible for enhancing all sound in the room. The teacher wears a microphone, and the speakers are in the ceiling. The speakers integrate with all the equipment in the room such as video streaming, movies and video clips. It communicates with the media center and even the school's public announcements. This audio enhancement system keeps important information clear and keeps students on task.
- Each room has a document camera. This small camera replaces the need for the old overhead projector. This document camera projects student



work, pictures, maps, and even allows teachers to model at their own desks. The camera has other wonderful capabilities that enhance learning.

- The room also has its own DVD/VCR unit. This device also communicates with the media center's media production system. Teachers burn their own DVDS and have control of all the media devices.
- One of the most popular devices is the Student Response Systems fondly known as "clickers." Each student is given a device that allows the teacher to know which students have learned the material and which have not. This tool has the potential to drastically limit paperwork and grading and allow more time for differentiation, remediation and enrichment with higher order learning. This tool provides instant feedback when using formative assessments.
- Each classroom has access to an on-

at their desks and have all their work projected on the screen for all to see. This tool also allows the teacher great mobility in the classroom. The teacher can be at all corners of the room and still facilitate all the technology tools with a touch of a button. The tablets store lesson plans and integrate with the teacher laptops. All lessons can be quickly saved as a PDF file and sent directly to the teacher's website, so all students can gain access to this lesson and teacher notes and use them with their homework. It is also a great application to assist those students who are sick or hospitalized.

All these rooms operate seamlessly by use of technology such as wireless, Bluetooth, infrared, and radio wave communication without a glitch. There are many types of software and tools that integrate with these technologies: PowerPoints, Blackboard, wikis, video streaming, edublogs, Twitter and more.

My experiences working to place technology tools in the hands of teachers and students in the classroom have been wonderful. Teachers have embraced these tools once they envision the positive impact on themselves and their students. Different model classrooms are in place throughout WCPSS: Pleasant Union Elementary, Joyner Elementary, Combs Elementary, Davis Drive Elementary,

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line video library. Teachers can choose from more than 10,000 resources that enhance their content. Actually seeing and experiencing the content allows the students to better understand new information.

- Wireless slates are another tool that is integrated with this system. The technology allows students to work

West Lake Middle and Sanderson High, just to name a few. By the end of the semester, Sanderson will have at least 25 classrooms operating with 21st Century teaching and learning classrooms.

There is one thing in life you can always count on, and that is change. You either choose to lead through it or get dragged by it. You make the choice!