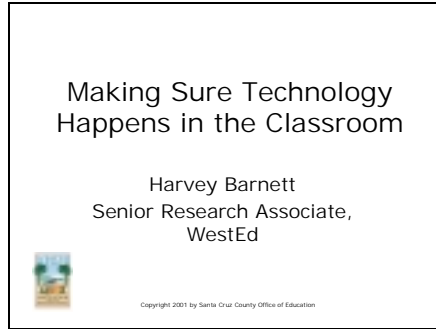
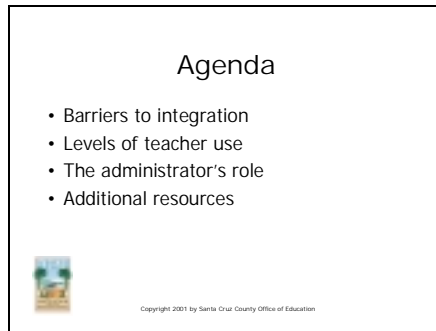


Slide 1



Hello. This is Harvey Barnett. Welcome to “Making Sure Technology Happens in the Classroom,” the second presentation in Portical’s technology planning series. If you viewed our earlier presentation, “Making Sure Technology Pays Off,” you know that technology has the potential to improve student learning dramatically when essential conditions are met. In this presentation you will learn how to help ensure your teachers integrate technology with the curriculum and content standards.

Slide 2




We’ll cover four topics. First we will review the typical barriers schools must overcome to move from the installation of computers and other technologies to their use as effective tools in support of learning. Second, we’ll talk about the stages you’ll see your teachers go through as they evolve as technology users. Next we will look at how you can foster the effective use of technology by your staff. Lastly, we’ll highlight some excellent resources that can help you and your teachers integrate technology tools with the curriculum.

Slide 3

Barriers to Integration

- Access
- Time
- Cost
- Training
- Reform




Copyright 2001 by Santa Cruz County Office of Education

So now we'll assume you've got a fair number of computers, you're wired, you're webbed, and yet when you look around the school, nothing really different appears to be happening. Let's take a look at some of the more common barriers to integrating technology in the curriculum. Five things tend to stand in the way of effective technology integration. You must plan to overcome each if you want to be sure the technology you've purchased actually benefits students. These barriers are access, time, cost, training, and reform.

Slide 4

Access

- Prime issue
- Must be readily available
- Located in the classroom
- Reliable




Copyright 2001 by Santa Cruz County Office of Education

Even though the average ratio of computers is one instructional computer for every 5.7 students, access is still a prime issue. Computers and other technologies cannot make an impact on student learning until they are readily available to students to use when they need them. This means the computers need to be located in the classroom and not only in a lab the students visit once a week for 45 minutes. The teacher needs to know that the computers will be available to support the instructional program when they need them and not on some pre-defined schedule. As adults, would we rely on a computer to support our work if we had to sign up in advance for short periods of time? Of course not. When you need your tools, you need your tools.

Slide 5

Time

- To select hardware
- To select software
- To plan schedule
- To match content with goals
- To learn how software works




Copyright 2001 by Santa Cruz County Office of Education

Okay, let's assume you've got the access issue solved. Computers are in the classroom in sufficient number. The next issue is time. Selecting the appropriate software and deciding how to use it requires time. Teachers have to think about how to schedule students' time, and how the digital content fits with their instructional goals. According to Bridget Foster, Director of CLRN, "It's not like a textbook, where you can thumb through it, you have to sit down and load software onto your computer and figure out how to use it before you can even begin to evaluate the content."

Slide 6

Cost

- Having enough *legal* copies of the various software titles
- Teachers' dilemma: how much of mine own money do I spend on software?




Copyright 2001 by Santa Cruz County Office of Education

Cost is the next barrier. The school may have purchased only one copy of the software, and/or have little budget for new software. Loading a single-user copy of a software title on multiple machines is illegal. To get the software they need some teachers pay for it themselves. Since the cost of software can be large, many teachers may not use software they find appealing because they don't have the money.

Slide 7

Training

- *Integrating* technology, not just using it
- Matching technology to students' needs
- A vehicle, not an end in itself




Copyright 2001 by Santa Cruz County Office of Education

Training is a huge barrier. In fact, it's all-important. We are not talking now about training in basic technology skills but about training to enable teachers to integrate technology with the curriculum. This type of training does not show teachers how to shoehorn software into their existing program but focuses on how to select the appropriate software to fit the instructional needs of students. It's crucial to keep reminding ourselves that technology use is not an end to itself but a vehicle to enhance and extent student learning.

Slide 8

Reform

- Full benefits of technology require broadened teaching repertoire.
- Augment tried and prove practices with new teaching behaviors.




Copyright 2001 by Santa Cruz County Office of Education

The last barrier is the need for teachers to reform their teaching. Getting the full benefit of technology requires most teachers to broaden their repertoire of teaching methods. They don't necessarily need to give up tried and proven practices, but at the same time, they shouldn't expect to integrate technology well without having to learn some new teaching behaviors.

Slide 9

ACOT Stages of Use

- Entry
- Adoption
- Adaptation
- Appropriation
- Invention



Copyright 2001 by Santa Cruz County Office of Education

If you viewed the first presentation in this series, you'll recall The Apple Classroom of Tomorrow—or ACOT—studies. One of the things those researchers learned was that on their way to fully implementing technology, teachers tended to pass through five developmental stages. You'll want to keep these in mind as you develop and implement your technology plan. The stages are:

Entry - at the entry level teachers struggle with learning about the technology and managing their classrooms with multiple computers.

Adoption - at the adoption stage teachers use technology to support traditional drill and practice and as a free time activity.

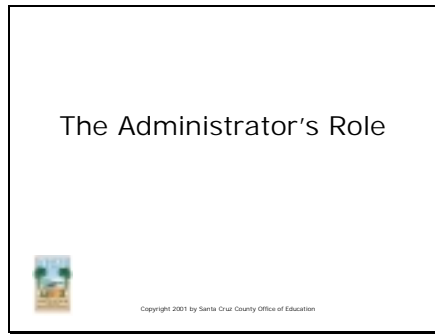
Adaptation - at the adaptation stage teachers begin to integrate the technology thoughtfully in their traditional classroom practices. Students productivity increases. Teachers begin to use project-based learning approaches.

Appropriation - at appropriation teachers understand how they can alter children's learning experiences through the use of multiple technologies and project-based learning activities in which children take greater responsibility for their own learning and collaborate with others. At this stage teachers rely more on tool software than stand alone programs.

Invention - when teachers reach the invention stage their students often direct their own learning in creative

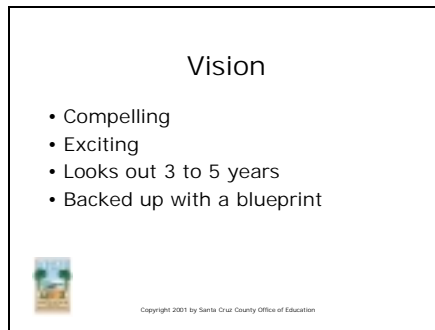
projects that go on over time. Even with on-going training, It takes teachers from 3 to 5 years to reach the appropriation and invention stages.

Slide 10



So, what can you as an administrator do to ensure that teachers enter and progress smoothly through these five stages? Here are some important things you can do.

Slide 11




One is have a vision. A vision is a compelling look at the future, not a blueprint . An administrator most of all must be excited about technology and the possibilities it offers to impact student learning. An administrator with a vision has a picture in mind of what it will look like in their school in 3 to 5 years for both students and staff. Your vision must be backed up by a blueprint that includes support and fiscal resources. Otherwise a vision is just some nice words to talk about.

Slide 12

Model

- Be knowledgeable.
- Use it effectively.
- Use it routinely.




Copyright 2001 by Santa Cruz County Office of Education

Two is to model. Administrators must be knowledgeable and effective users of technology themselves. All written school memos, agendas, minutes, phone messages, etc. should be handled by e-mail. Grade reporting, attendance and parent communication should be electronic or web-based whenever possible.

Slide 13

Encourage

- Both traditional and non-traditional approaches
- Safe atmosphere
- Incentives
- Time: theirs and yours



Copyright 2001 by Santa Cruz County Office of Education


Encourage teachers to use both traditional and non-traditional forms of learning environments. Provide a safe atmosphere for teachers to experiment with the new approaches technology demands. Provide incentives to encourage teachers to attend conferences and other staff development activities.

Most importantly, give time. It takes time to learn about new software and figure out how it will help students to learn. Find ways to provide teachers with periodic extra planning time. Try to arrange schedules so that teachers who want to work together on technology projects are able to do so. In your own schedule, make time to observe and participate in classrooms while technology is in use.

Slide 14

Provide Financial Support

- On-going
- 20% to 30% of tech budget
- Equipment
- Software
- Technical support, maintenance




Copyright 2011 by Santa Cruz County Office of Education

On going financial support is a must. Remember it takes from 3 to 5 years for teachers to reach the point at which they can deftly balance technology-based instructional strategies with traditional approaches. This means that 20 to 30 percent of your technology budget should be available to support ongoing training. Money must also be allocated for equipment and software as well as technical support. Teachers will not spend the time and energy necessary to integrate technology with curriculum and standards unless they can count on that technology being dependable, maintained, and upgraded when necessary.

Slide 15

Assess Use

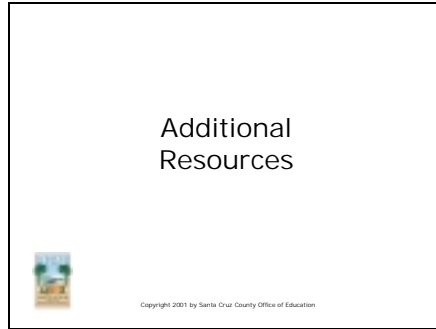
- Continually
- Augment standardized tests with alternative assessment strategies
 - Rubrics
 - Writing and work samples
 - Portfolios



Copyright 2011 by Santa Cruz County Office of Education

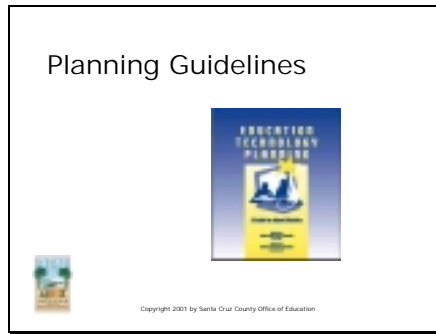
Finally, to make technology happen you must continually assess its use. Traditional assessment instruments such as standardized tests will not measure all the learning outcomes technology can make possible, such as problem solving, collaboration, and a deeper understanding of content. Teachers need help to devise and use alternative assessment strategies such as rubrics, writing samples, student artifacts and portfolios.

Slide 16



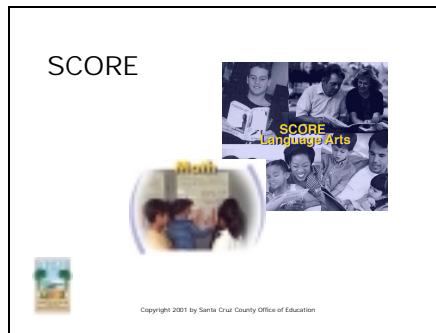
Of course you don't have to do it all yourself. There are many excellent resources to assist you. Here is a sample of resources available to use to help make technology work for you, your staff and students. You'll find links to all of these in Portical's resource matrix.

Slide 17



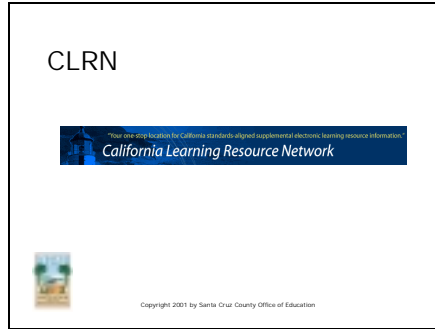
California's Commission on Technology and Learning has written "Recommended Guidelines for School District Education Technology Planning". These guidelines were approved by the California State Board of Education on January 10, 2001, and should be a great assistance to districts in writing their technology plans. In Portical's Briefcase section, you'll also find templates aligned with these guidelines.

Slide 18



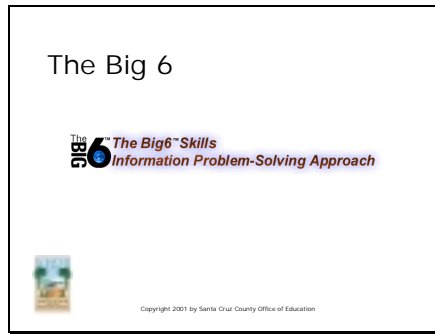
SCORE—which stands for Schools of California Resources for Education—provides Internet resources and lessons that are linked to California's content standards and curriculum frameworks for Mathematics, Language Arts, History/Social Science and Science.

Slide 19



CLRN—the California Learning Resource Network—provides a one-stop information source that enables California educators to identify supplemental electronic learning resources that both meet local instructional needs and match California’s curriculum frameworks and standards.

Slide 20



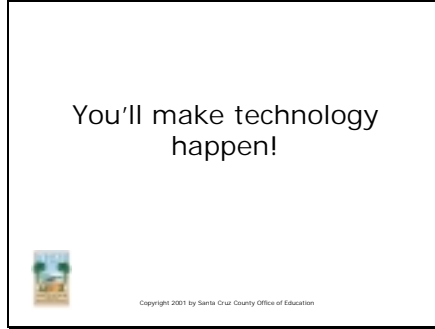
The Big 6 is a set of skills to teach students information literacy. In today’s world where students prefer to use the Internet for research, it is important that they have the skills to evaluate the information they are retrieving. The Big 6 skills are Task Definition, Information Seeking Strategies, Location and Access, Use of Information, Synthesis, and Evaluation.

Slide 21



The U.S. Department of Education supports ten regional technology in education consortia to promote student achievement with technology. WestEd’s RTEC, the consortium for the our region, provides a list of Language Arts and Mathematics Standards with further links to descriptions of how technology can be used to teach those standards as well as some student work samples that illustrate those lessons.

Slide 22



The adoption of technology is like any other educational innovation except that it seems to be more time intensive and expensive. Yet when all is said and done, it's worth it. In today's information society and increasingly global community, not using technology simply is not an option. As administrators, the better we can help our teachers to combine the best of traditional and newer, technology-supported approaches to learning, the better off our students will be. I hope the information we've shared today will help you make that happen at your school! For now, this is Harvey Barnett saying, "Good by until next time."

Citations:

- ❑ [Apple Classrooms of Tomorrow \(ACOT\)](#)
- ❑ [Recommended Guidelines for School District Education Technology Planning](#)
- ❑ [SCORE sites](#)
- ❑ [California Learning Resource Network \(CLRN\)](#)
- ❑ [The Big 6](#)
- ❑ [WestEd RTEC](#)