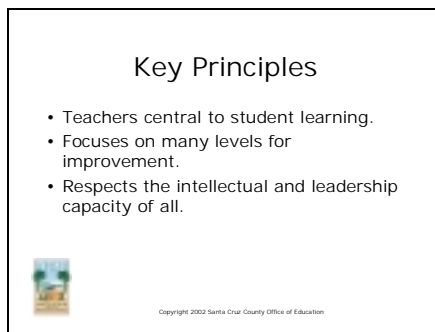


Slide 1



Hello. This is Harvey Barnett. Welcome to “Professional Development in Technology: Key Principles,” the fourth presentation in Portical’s technology planning series. If you viewed our earlier presentations, you know that technology has the potential to improve student learning dramatically when essential conditions are met. In this presentation you will learn key, research-based principles to ensure your professional development program results in increased teacher competency and student achievement.

Slide 2




Sound professional development in technology relies on the same principles that apply to good professional development in general. In 2000, WestEd published “Teachers Who Learn, Kids Who Achieve: A Look at Schools with Model Professional Development.” The principles of professional development described in this publication frame our discussion. They are:

- Focuses on teachers as central to student learning, yet includes all other members of the school community;
- Focuses on individual, collegial, and organizational improvement;
- Respects and nurtures the intellectual and leadership capacity of teachers, principals, and others in the school community;

Slide 3

Key Principles, cont'd

- Reflects best available research and practice.
- Promotes continuous growth.
- Promotes continuous inquiry.
- Planned collaboratively.




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Reflects best available research and practice in teaching, learning, and leadership;
Enables teachers to develop further expertise in subject content, teaching strategies, uses of technologies, and other essential elements in teaching to high standards;
Promotes continuous inquiry and improvement embedded in the daily life of schools;
Is planned collaboratively by those who will participate in and facilitate that development;

Slide 4

Key Principles, cont'd

- Requires substantial resources.
- Based on a long term plan.
- Evaluation guides new planning.




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Requires substantial time and other resources;
Is driven by a coherent long-term plan;
Is evaluated on the basis of its impact on teacher effectiveness and student learning; and this assessment guides subsequent professional development efforts.

Slide 5

Background

- QED Study
- Other Research on Professional Development
- Training hours per year



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Based on data gathered in 2001, Quality Education Data has reported that during the 2001-2002 school year schools are expected to spend \$600 million on professional development which will reach about 75% of all teachers. 84% of these teachers have computers at home. So, with all this exposure, why do other studies find that most of teachers still feel uncomfortable with technology? It's all about time.
Research on staff development has documented that when teachers receive more than 10 hours of

technology training each year they are more much more inclined to use computers for multiple purposes in the classroom. Unfortunately, it turns out that 58% of public school teachers across the United States get less than 10 hours of technology related training per year. Just 10 percent get more than 20 hours per year.

Slide 6

Technology Standards for
School Administrators
(TSSA)

- Learning and teaching
- Productivity and professional practice
 - Apply technology
 - Learn using technology



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The Collaborative for Technology Standards for School Administrators (TSSA) developed a set of seven standards that outline what P-12 administrators should know and be able to do to optimize the effective use of technology. Two of the standards deal with professional development. One of these is Learning and Teaching. A key element of these standards is, “Educational leaders provide for and ensure that faculty and staff take advantage of quality professional learning opportunities for improved learning and teaching with technology.”


The other is Productivity and Professional Practice. To meet this standard, “Educational leaders apply technology to enhance their professional practice and to increase their own productivity and that of others.” For example, administrators should create and participate in learning communities that stimulate, nurture, and support faculty and staff in using technology for improved productivity. In addition, administrators themselves should engage in sustained, job-related professional learning using

technology resources.

Slide 7

Standards for Educators

- NETS
- Profiler
- Other online surveys
 - CTAP2 - California
 - My Target - Indiana
 - My Compass - Arizona



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During the past few years, several groups have developed standards for technology proficiency. These standards serve two important functions. First, they assist administrators and teachers to know what technology proficiencies are important to master if technology is to enhance student achievement. Second, they serve as tools for planning appropriate staff development activities. A valuable feature of this work is that it is online and, in many cases, includes self-report inventories that can guide teachers to identify areas for growth and plan appropriate professional development activities. Here are three examples:

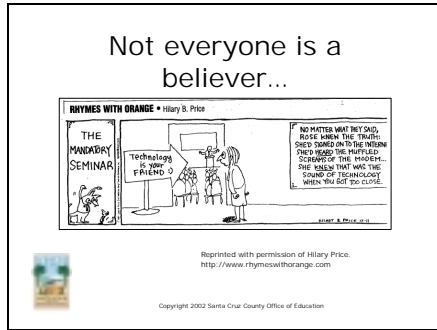
1. NETS—the National Educational Technology Standards, which was developed by a national group of educators. NETS includes standards for teachers, students and administrators. NETS describes standards for all teachers reflecting fundamental concepts and skills for using technology to support teaching and learning.

2. Profiler is a unique tool that it was designed to help teachers improve their skills around a general

technology topic. After completing a self-assessment, Profiler enables teachers to locate colleagues with complementary skills who are want to trade a bit of coaching for mutual benefit.

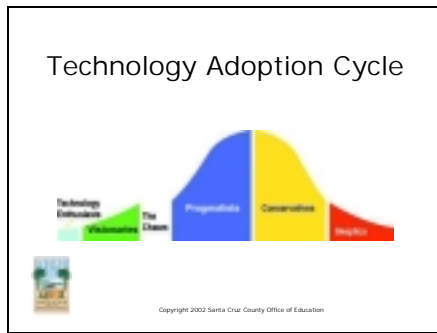
3. Many states have developed or are developing technology proficiency standards aligned with their standards. Three states that have online assessments are California, Indiana, and Arizona. Links to each of these are found in the TICAL resource database.

Slide 8



One thing to always keep in mind is that not everyone believes technology has a place in the classroom. And, like Rose in this cartoon, even those who would like to learn may be technophobic or even afraid they might break the computer. Remember Rose when planning your staff development program.

Slide 9



Geoffrey Moore wrote a book called *Crossing the Chasm*. He looked at why some new products become widely used while others fall by the wayside. His model also applies directly to professional development. Let's see how. On the far left side of the curve are your techies. You know them: they have all the toys, want the latest and fastest, and spend many hours messing around with any technology available. While they are poor models for those on your staff who do not wish to make technology their avocation, they are excellent resources for piloting new

hardware and software applications. Visionaries are your technology leaders. They are excellent teachers who understand the potential of technology to increase student learning. They represent a small portion of your staff. Your challenge is to cross the chasm and engage the pragmatists.

Pragmatists view themselves as good teachers. Parents have high regard for them and their students do well academically. They may understand the potential of using the new technologies but see it as taking time from other more useful activities. Use your visionaries to help them find a compelling reason to add technology to help their students do something they haven't been able to do before,


Conservatives are reluctant to adopt any new idea. They have seen too many bandwagons come and ago. They wait until they see that the new idea is going to "stick." When they see the pragmatists using technology on a regular basis, they will begin to show an interest.

Now you have the majority of your staff as users, leaving only the skeptics. Don't spend a lot of time or energy on them until they are ready. A compelling reason for them may be teacher productivity applications.

Slide 10

Survival Stage

- Struggle against technology
- Assailed by problems
- Status quo in classroom
- Teacher directed
- Unrealistic expectations
- Management problems



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All teachers, whether they are Visionaries or Skeptics, go through several stages of use. In an earlier presentation, we looked at the ACOT model. Today, let's take a look at a complementary model developed by Ellen Mandinach. Mandinach's first stage is Survival. This stage is the first stage every teacher passes through. Teachers at this stage:

Struggle against technology. They aren't sure they really want to get involved and they are afraid that any problem will result in the computer needing major repair. They are embarrassed to appear stupid to other staff or students.

Are assailed by many problems, including finding time in the face of other pressing requirements, and understanding the basic functions of the hardware and software.

Make no changes in how they organize and manage their classrooms. Technology may be in evidence but has not affected how students interact with each other or the teacher.

The teacher is still in charge. They are still in "sage on the stage" mode mostly lecturing and controlling the flow of information and student interactions.

Survival stage teachers have unrealistic expectations concerning the use of technology. They believe it will solve many instructional problems, save them time and the Internet will provide students with easy located information. Of course, none of this happens.

Technology takes time and energy to work effectively in the classroom. Management is a constant source of frustration for teachers at this stage.

To the reluctant or hesitant user of technology, managing another piece of equipment in an already overburdened curriculum can become an obstacle for success. For those who readily use technology, how to manage what in most cases is a scarce resource is an issue. For both groups, the critical issue is how to effectively integrate technology into the existing curriculum.

What's important is not how often you use technology but are you providing an effective tool, in an effective manner, to accomplish a task efficiently?

After a teacher has conquered the initial issues surrounding the use of technology in the classroom they move onto the Mastery stage.

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Mastery Stage

- Increased tolerance
- Increased experience with new classroom structures and interactions
- Increased technical competence



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The mastery stage is characterized by:

Increased tolerance for dealing with the problems of using technology in the classroom. Teachers aren't upset with the normal ups and downs of technology use.

Teachers begin to alter ways of interacting with students. They begin to adopt project-based learning activities and lecture less, giving students more opportunities to develop their own projects. The classroom looks different. Desks may be grouped rather than in rows. Students often work together. Technology is available in the classroom rather than the computer lab. Students use the technology as needed rather than at arbitrarily assigned times.

Teachers exhibit confidence to solve technical problems. They can do simple hardware and software trouble shooting, including solving


network access, computer freezes, and printer problems. Teachers at this stage also consistently use computers for personal productivity, grade keeping, and parent communication.

While all these are major strides, it's at the next stage that technology use begins to reach its potential for improving student learning.

Slide 12

Impact Stage

- Learner centered
- Teacher as facilitator of learning
- Less threatened by technology
- Project-based learning
- Technology supports content standards



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At the impact stage, the impact of technology use really begins to show.


The classroom is learner-centered. Teachers often act as facilitator of learning rather than giving direct instruction. Students are encouraged to assume leadership both within their teams and for the classroom. Teachers are much less threatened by hardware and software issues. They are able to deal with many hardware and software problems and are willing to try new activities with minimum handholding. Project-based lessons are often in evidence. There is a balance between instruction and construction.

Teachers plan technology use to support content standards rather than as a free time or special activity. Teachers' lesson plans indicate what content standards are being addressed and the software and hardware required to meet the lesson objective.

Slide 13

Innovation Stage

- Restructuring of teacher roles
- Modification of learning activities
- Restructuring of assessment procedures




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At the final stage, Innovation, technology makes the biggest difference in student achievement and use. At this stage teachers: See students as teachers as well as learners. Teachers balance construction with instruction, giving students many opportunities to guide their own learning. Teachers consider the role of technology when planning all lessons. Technology use is used as appropriate for each instructional unit. Teachers plan for a variety of technologies including computers, video, digital camera and PDAs. Assessment practices go beyond paper and pencil short answer tests. Teachers incorporate a wide variety of assessment strategies including student portfolios, rubrics and student performances. Teachers only reach these higher levels of use by attending a variety of professional development activities. Let's look at some practices that research has found effective.

Slide 14

Six Steps to Success

1. Inspire and support leaders
2. Teacher-driven, bottom-up decision making.
3. Incentives for risk-takers.
4. Emphasize process over product.
5. Recognize the need for time.
6. Provide access to appropriate hardware and software.



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Knowing what makes successful professional development is only one part of what successful administrators know. The other is how to nurture teachers to grow professionally. To do this, you'll need to inspire and support teachers who are instructional leaders. Recognize them in many ways and provide the resources we discussed earlier. Make sure that teachers have the power to decide what elements of their program will be enhanced by technology. Encourage teachers to take risks and try new ideas. Don't mark them

down if the idea fails to work. Provide them incentives for taking the risk.

Emphasize the process of learning over the product. In the beginning they may use technology to support old instructional practices. For example, using the computer as flash cards. Learning to deal with the complexities of technology use at the same time as reinventing instruction may be too much for many teachers.


Remember that change happens slowly over time. It takes the most dedicated teacher three to five years to transition from the beginning stages to the mastery stages.

Finally, make sure that the teacher has the appropriate hardware to successfully implement the new activity. Don't hope that a teacher will use the Internet to help students prepare reports from a dial up phone line on old, outdated equipment.

Slide 15

Measurements of Success

- Instruction redesigned
- Changes in learning environment
- Many teachers become trainers
- Increased collaboration
- More powerful learning for students
- Teacher renewal



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Finally, how can you measure the success of your efforts? If you've provided teachers with sound professional development, here's what you'll see:

Classroom instruction is redesigned to incorporate a balance of instructional and construction. The classroom has been redesigned to incorporate project-based learning. Technology is easily available to students when needed in the classroom.

Many of the teachers who are at the impact or mastery stages become either mentors or trainers. Teachers report that they collaborate on a routine basis with other teachers at their grade level or subject area for planning, sharing


students, and assessment strategies. There is direct evidence by a variety of assessments that technology use results in more powerful learning for students.

And perhaps most important is that teachers are excited about their roles as teachers and facilitators and constantly seek to improve their instructional programs.

Slide 16

Finding resources

1. Go to Portical.org home page.
2. Click the "Find" button at the top of the page.
3. Enter name or key words.
4. Click "Submit."




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I hope you've found this brief overview of professional development principles helpful and that you'll want to share the information with others. The Portical resource database includes links to all the resources mentioned in this presentation as well as to many more similar resources you will find useful. To access these resources, simply go to the Portical home page and click the "Find" button. Next, enter the name or appropriate key words in the search boxes provided. Then click "Submit" at the bottom of the page.

Slide 17

Be sure to view...

**Professional Development
in Technology:
Strategies and Examples**



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Also, I invite you to view the companion presentation, "Professional Development in Technology: Strategies and Examples." For now, this is Harvey Barnett saying, "Good by until next time."

