Professional Development Planning

Chapter 4

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Professional Development and Technology Integration

Professional development underlies all successful technology integration efforts. Research shows, and our experiences in SEIR◆TEC confirm, that professional development must be substantial (approximately 30 percent of the overall technology budget), ongoing throughout the year, on-site, and just-in-time. To make this happen, professional development must be a major component of your technology plan.

We have found that most teachers are aware of the value of professional development for integrating technology into their professional practice. Nevertheless, the professional development we all too often observe is limited to very basic, and redundant, workshops on the mechanics of technology operation. Comprehensive professional development for technology includes not only the development of technical skills and knowledge, but also strategies for technology-enhanced teaching and learning, and for classroom management.

Tools in this Chapter

THE Tools

The following sections will serve as a starting point for making decisions as you develop a plan for professional development.

Steps for Planning Professional Development. From ascertaining staff needs to developing professional development offerings, *Steps for Planning Professional Development* addresses every important aspect of the planning process.

Technology Competencies for Teachers. A concise introduction to the process of adopting teacher technology competencies, the tool presents valuable information about criteria for creating teacher technology standards.

Guidelines for Adopting Teacher Technology Competencies. The guidelines provide direction for setting teacher technology standards that support both curricular and pedagogical goals.

Professional Development Models. Detailed descriptions of eight *Professional Development Models* are provided to assist in making informed choices about which instructional strategies to follow.

Professional Development Ideas and Strategies. The ideas and strategies comprise a set of relatively simple techniques to help put professional development plans into action.

Professional Development Idea Worksheet. Used in conjunction with the ideas and strategies in the preceding item, the *Professional Development Idea Worksheet* is designed to help make technology implementation a reality.

A Framework for Designing Professional Development. Adapted from a landmark text on designing professional development, *A Framework for Designing Professional Development* illustrates a four-step process for putting together a successful program.

Checklist of Professional Development Strategies. The checklist comprises fifteen professional development strategies as they apply to different stages of teacher development.

Making the Most of Professional Development. A collection of strategies for professional development implementation, *Making the Most of Professional Development* can help move the process beyond the planning and design stages.

Resources. There are a number of references throughout this chapter to valuable online resources. For your convenience, we have included a summary of these in the *Resources* section.

Putting the Tools to Work

Steps for Planning Professional Development

1. Survey your staff to determine their needs.

In most cases, professional development planners will find that teachers and administrators need training in a number of different subjects delivered in a variety of different ways. The best way to design professional development that meets different needs and accommodates different levels of expertise is to find out what people do and do not know and what they need to know, and then to develop offerings accordingly. Assessing needs and skills can be done by administering a survey. We have included a sample survey in the Appendix that you can modify for your own use. We suggest that you give respondents an opportunity to describe in their own words how they would like to use technology in their classrooms. Use this survey to help plan current and future professional development sessions.

Even if you determine that everyone on your staff needs to acquire the same basic information, some people will do just fine with a one-hour workshop, whereas others will need more time with one-on-one support. The point is, if your goals are to assist in developing the capabilities of your entire staff and being adaptable in how you facilitate that development, you will need to consider a variety of delivery mechanisms.

2. Determine where your staff lies along the continuum of various stages of *concerns* ranging from awakening awareness of technology and its potential impact to an advanced refocusing of existing skills and practice.

Technology is a remarkable innovation in many educational environments. However, bringing innovation to your staff may raise anxiety about how it will affect them as individuals and the way that they work.

When designing professional development, acquaint yourself with literature about the change process and how it relates to the adoption of an innovation. Even if you only have a little time to consider these underlying factors, it's well worth the effort. Understanding how to address individuals' concerns related to change and innovation will give you new insight into how to design effective professional development.

One model for understanding change is the *Concerns Based Adoption Model (CBAM)* (Hord, Rutherford, Huling-Austin, and Hall, 1987). The *CBAM* model was developed out of years of research on innovation and change, such as Everett Rogers' seminal *Diffusion of Innovations* originally published in 1973. Interestingly, Rogers' initial work, which focused on farmers and how they adopted new agricultural procedures, has formed the conceptual underpinning of many professional development efforts, including the SEIR◆TEC academies. The *CBAM* model (and other developmental models of its type) holds that people normally move along a continuum as a change is being introduced and

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implemented. Those who are considering or experiencing change will ask questions of themselves regarding the change. In early stages of the change process, questions are more self-oriented: What is it? How will it affect me? When these questions are resolved, questions emerge that are more task-oriented: How do I do it? How can I use these materials efficiently? How can I organize myself? Why is it taking so much time? Finally, when self- and task concerns are largely resolved, the individual focuses on impact. Educators will then ask: Is this change working for students? Is there something that will work even better? You can find a more detailed account of *CBAM* at the National Academy of Science web site at http://www.nas.edu/rise/backg4a.htm or obtain *CBAM* tools from Southwest Educational Development Laboratory at http://www.sedl.org/catalog/items/cha22.html.

Professional development aligned with *CBAM* takes into account the range of concerns—and hence patterns of adoption—present in any school or district staff. Also, through awareness of these concerns, you as a professional development planner can be more sensitive in searching out staff needs for different types of professional development.

Once you are aware of the range of *stages of concerns* (from the *CBAM* model), you can begin to find out where your staff lies on its continuum. This determination is best done through a variety of information-gathering strategies. As the literature on change tells us, no single communications mechanism will reach everyone; therefore, don't expect to gather all of your information via a standardized survey administered to everyone. Frankly, a survey may not be the most productive way for you to gather information on personal concerns. Think about how often you have heard someone say that they couldn't fill in the survey because they had no idea what the questions were about? This is indicative of someone at a low stage of concern and a low level of adoption. A much better way to accumulate this information is to spend time talking to staff and other informed participants.

Another way of obtaining information is to solicit feedback continually from participants once professional development sessions are underway. At the beginning of a new initiative, participants may not know what they need in terms of professional development, but as they become more experienced, they begin to have a clearer understanding of their needs.

After you have analyzed your information about staff members in terms of awareness, skills, and needs, you will be better informed when designing your professional development plan.

3. Create technology professional development offerings that address staff needs in both content and process.

After you have completed the necessary data gathering and analysis—for example, interviewing, surveying, investigation, reflecting—it's time to develop the professional development plan. This plan might be incorporated into your strategic technology plan or your district is comprehensive plan. Perhaps it might exist as a separate technology professional development plan (definitely the least preferable of all options). The point is that it should be a plan that takes into account a range of needs and circumstances, not just a list of workshops to be held.

Furthermore, if your district plans to incorporate technology-competency measures, you will need to design the professional development curriculum with those competencies in mind.

It is important to note that the distinctive difference about *technology* professional development, compared with other sorts of professional development, is the technology component and its requirements (hardware and software), as well as the qualifications of the person or persons who will be delivering it.

4. Determine where, when, and how professional development sessions will take place.

There are several issues to be considered regarding this item. Will a special technology training room or training rooms be needed? If so, how should it be equipped? Will there be such a room in each school, or will it be a district training room? Who will be responsible for delivering these sessions? Will someone new be hired? Or, will it be a teacher with a new assignment? And, most importantly, when will teachers be asked to attend these sessions? On the weekends or after regular school hours? Will substitutes be available for release time so teachers can attend during regular school hours?

Finally, and not least in importance, is *strategic pacing.* This means, who will receive computers first, and how will that be decided? How soon afterwards will they receive appropriate training? Will everyone across the school or district receive computers at the same time? Or will it take place in waves? One school at a time or one grade level at a time? Elementary first, then middle school, and then high school? Or will teachers have to write proposals requesting the technology they want to use in their classrooms?

5. Create a plan for strategic pacing that will coordinate installation and delivery of hardware and software with your professional development sessions.

From time to time, we hear administrators talk about the distribution of technology resources as an example of the chicken-and-egg problem. If you have limited funds (and who doesn't?), should you spend it first on hardware and software or on professional development? If you spend it first on hardware and software, the technology will probably be underutilized unless teachers and administrators are already technology-proficient. On the other hand, it's pointless to offer training before educators have the technology, because they will have forgotten what they learned before they have a chance to apply it. When having to make a difficult decision like this, we have found that it's a good idea do a phased implementation, i.e., to roll out the technology and the professional development about the same time, but to do it in stages. You might start with a particular subject area in which students stand to gain the most from technology-enhanced learning. Or, you could start with the grade level where the teachers are most ready and eager to get started. In some of the SEIR◆TEC intensive site schools, the teachers who participate in professional development and implement what they use in their classrooms are the first to receive new technology. The point is to strategically plan the pacing for both the short term and long term.

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Technology Competencies for Teachers

When adopting teacher technology competencies, first consider the teacher's most basic priority, which is to help students learn. Therefore, the tools that teachers use—whether these tools are based in modern information technology (e.g., computers) or traditional technologies (e.g., books)—must first and foremost be the most appropriate to support their primary goal: effective teaching for effective learning.

There is a generally valid assumption that certain information-technology devices are very powerful teaching tools. Elsewhere in this book, we offer a number of resources detailing the instructional advantages offered by integrating technology within the instructional environment. In addition, just as with any other information-age profession, teaching can benefit from the many labor- and time-saving advantages that technology can bring to the processing of administrative information. Thus it is indeed important that teachers be able to use a variety of basic technology tools in both their instructional and administrative roles.

At the same time, it is also important to remember that access to all of the tools in the world will not automatically make a mediocre teacher a good teacher. Effective use of technology allows a teacher to adopt better instructional practices. However, technology alone will not help a teacher who does not have a sound understanding of how students learn and how best to address students' needs and learning styles. Understanding this basic sequence—first the learning, then the teaching, then the technology—is essential to the process of creating teacher technology standards (not to mention the entire process of technology planning!). Underlying the various statements about what sorts of tools teachers should know how to use should be a requirement that teachers understand what tools are most appropriate for a given teaching task. This implies that the teacher have an underlying understanding of learning theory (such as constructivism), pedagogy, and the curriculum.

Guidelines for Adopting Teacher Technology Competencies

Technology competencies ought to be about setting the standards for the use of technology tools that support both the curriculum and good pedagogical practices.

- **Teacher technology competencies must be linked to pedagogical competencies.** For example, it does not make sense to expect a teacher to use communications technology (e.g., the Internet) to support cooperative learning if the teacher has not developed an understanding of what cooperative learning is or how to manage a cooperative-learning environment. Technology is just a tool and not an end in itself. When teachers are mandated to master tools for tasks they do not understand, they will do their best to avoid the situation. Don't offer technology training without including strategies and ideas for applying new knowledge and skills in the classroom.

- **Teacher technology competencies are really part of the *professional development* component of your strategic technology plan.** If you adopt competencies as part of your professional development plan, your training and support will help teachers attain these competencies. When viewed this way, acquiring competencies becomes a *goal* of the professional development section of your technology plan.

- **Teacher technology competencies must be linked to the availability of technology infrastructure.** Often, we see standards that require teachers to use technologies to which they have insufficient access. Remember that access must be defined practically and not just politically. For example, a *single* Internet-connected computer in a school media center does not constitute access to the Internet for all of the teachers in that school. It is perfectly reasonable—and quite desirable—to create competencies that escalate over time and are in sync with the growth of your district's technology infrastructure. What might be science fiction with today's infrastructure might be perfectly ordinary with your infrastructure three years from now. Once again, technology plans are about *strategy,* and strategy unfolds over *time.* Therefore, competencies can be developed over time.

- **Teacher technology competencies should be related to *basic* applications and systems.** Here again, the goal is to cover the broadest range of possible situations. Teachers should be held accountable for using basic tools such as word processors, spreadsheets, the Internet, an integrated learning system, multimedia, and administrative systems. Equally important, they should know how to select and use instructional software that will help students develop cognitive skills, learn academic content, and meet state standards. In most cases, professional development should not focus on teaching teachers about a specific brand of software, curriculum package, or type of computer, because these quickly become irrelevant as technology advances and teacher assignments change.
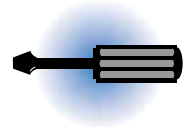
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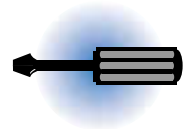
- **Teacher technology competencies should be described in under-standable terms.** At a minimum, a competency statement should clearly define the expectation for what a teacher should be able to do. Consider, however, how much more helpful it would be to have an example of what a teacher would actually do to fulfill the expectation. This places the competency in real-world terms and helps the teacher understand what is required to meet the expectation. Furthermore, through the process of creating examples, you as a planner or policymaker will be able to gauge just how reasonable your expectations are within the limitations of your situation.

Teacher Competency Examples

The following examples from state departments of education, research groups, and individual school districts represent the wide range of thought related to teacher technology competencies. As with all aspects of technology planning, it is important to check with your state department of education *first* to determine if there are specific guidelines or frameworks to which you must adhere.

- ISTE, the International Society for Technology in Education, has developed a set of standards that can be applied to all professional education programs. By design, these competencies are to be a part of preservice education (and have been adopted by the National Council for Accreditation of Teacher Education), but often we find that states and school districts are setting them as competencies for in-service teachers. The ISTE standards can be viewed online at the ISTE web site at http://www.iste.org/Standards/index.html.

- The North Carolina Department of Public Instruction (the state department of education) has developed an exhaustive set of beginning and advanced teacher technology competencies. These can be found online at http://www.ofps.dpi.state.nc.us/OFPS/hm/te/techcomp.htm.

- The Lexington (Massachusetts) Public Schools have approached the issue of teacher technology competencies by defining a set of basic skills that all teachers must master as a way of attaining integration of technology within the district's curriculum (and state curriculum frameworks). Lexington has taken an interesting approach to the process of offering the professional development and support necessary to attain these skills. For more information on Lexington's standards, skills, methods, and resources, visit them online at http://lps.lexingtonma.org/Tech/Kansas/index.html.

- Bellingham (Washington) Public Schools have developed the *Staff Use of Technology—Self-Evaluation Rubric* based upon the *Mankato Scale* originally developed by the Mankato (Minnesota) Public Schools. See it online at http://www.bham.wednet.edu/tcomp.htm.

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Professional Development Models

There are many strategies—and pitfalls—when designing a professional development program. Some districts may use a single approach, while others may implement a variety of approaches. Just as classroom teachers have found that they need to use a variety of instructional strategies to accommodate different learning styles, staff developers have found that they need to accommodate the various ways teachers approach the materials they present. We have found that single-session attempts without any relationship to classroom application or follow-up are the least effective approach. They are also the least cost-effective in terms of what teachers learn and what they take back and implement in their teaching.

In order to address the deficiencies of a workshop-only approach to professional development, some school districts have developed models that combine baseline data for teacher technology use, principles of constructivist learning, strategies for collaboration, and opportunities for exploration and practice. These forward-thinking districts are modeling a variety of strategies for technology professional development. These professional development models focus on achieving meaningful outcomes instead of focusing only on learning skills. Skills are learned in context and are therefore more meaningful, and greater control is placed in the hands of the learner. In this section, we describe these innovative models as well as the traditional *workshop* and *hands-on lab* models.

Workshops

Workshops are a commonly used vehicle for delivery of professional development. While we have experienced—and conducted—hundreds of workshops, we feel that this approach tends to be overused. Planners often find workshops to be expedient and so do not consider more effective ways to deliver professional development. Just as with any teaching method, a workshop is helpful for some but not for all. Frequently, workshops become professional development *events* and do not have the follow-through necessary to create impact over time. To make the most out of workshops, we suggest that you refrain from offering the one-shot "everyone come today and learn all about it" kind of session. Sometimes these tend to be too long, creating information overload and failing to engage the attention of participators. Rather, we recommend formulating workshops as a series of related topics that build upon each other, have follow-up activities, and involve some problem solving and collaborative activities. In effect, this means that you will need to carefully design a technology professional development *curriculum* that flows out of your professional development and technology plan.

Hands-on Labs

Conducting technology training in a laboratory setting where all participants have access to a computer is another common practice. This approach can be very effective if the learning activities are planned carefully and the trainer is skilled in this approach. Sometimes this approach becomes a lengthy technology showcase with the participants learning very few applicable skills or concepts and going

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away with information overload. When you use a laboratory setting, we recommend that brief demonstrations be followed by opportunities for individual exploration and practice. The lab approach is most effective if the training is offered in short sessions spread over a period of time. This gives participants an opportunity to practice between sessions and explore what they have learned.

Train the Trainer

The Train the Trainer model is used more frequently in schools and school districts where there is a need to scale up or disseminate a professional development effort quickly. The main idea is to train a small number of people who are then expected to share what they have learned with others. The distinct advantage of this model is that it empowers more individuals by spreading the control of professional development over a larger group. Also, it provides the opportunity for creating a better match between the professional development topics, the trainers, and the participants, which, in some cases, creates a peer-mentoring situation. As we said in the Lessons Learned section of Chapter 1, however, the Train the Trainer model is often seen as a relatively inexpensive way of training lots of teachers. When implemented with this goal in mind, we have noticed that the model seldom works, because the cost savings come about by eliminating some of the model's most critical elements. In particular, the key trainers (those who receive the initial training and are expected to conduct turn-around training) are seldom allotted the time and resources necessary to develop their own knowledge and skills before they have to lead training. There are also concerns about the quality of training that key trainers receive and their experience as trainers. If someone is a good teacher, it does not necessarily follow that they will be a good trainer. In a similar vein, we have found that expertise in technology does not automatically translate into effectiveness as a trainer. When all is said and done, the Train the Trainer model can work well, but it has to be thoughtfully planned and implemented.

Learning Teams

Based on the assumptions that teachers learn best when they can construct their own knowledge and that the best resources for teachers are often other teachers, some districts have created collaborative learning groups or teams for technology professional development. Lexington (Massachusetts) Public Schools, for example, call their groups *learning teams*. These teams are the focal point of the district's professional development efforts for both technology and a wide variety of other topics. During their first year of working with learning teams (1997–1998), Lexington schools organized 300 elementary- and middle-school teachers into eight-person teams. Learning teams were organized by grade level, building level, and/or curriculum focus (e.g., foreign language, math, science, social studies, etc.). There were actually quite a number of different team configurations, but all of the groups had a common reason for being.

The goal for the elementary- and middle-school teams during the first year was to master a set of basic information-technology competencies. Therefore,

the initial team function was to learn basic how-to technology skills. During the second year, the teams were expected to begin integrating technology into their curriculum. Each team focused on developing its members' technology competencies in a way that the group as a whole found useful. That meant that different groups dealt with different issues and topics as they saw fit. When the group members felt that they had had enough of a particular subject, they moved on and focused on the development of another skill or competency. By the end of the 1997–1998 school year, *all* elementary- and middle-school teachers had mastered the basic skills; but the paths they had used to attain that mastery differed from one group to the next.

Each of Lexington's learning teams had a team leader who received training (by out-of-district trainers) on the basic tools and facilitation/team leadership skills. This training was offered during professional development release days early in the school year and spread over several months. It could have been offered as a summer professional development institute, and this would have accelerated the district's efforts. After their initial training, team leaders began to meet with their teams. These team meetings were also held during designated district professional development days as well as after school on a schedule determined by each team.

Perhaps equally important to skill mastery was that the learning teams fostered an environment of cooperation and collaboration. Team members were encouraged to meet outside of designated team time and to use each other as their first-line technology support. In this regard, it became even more important that teams be constructed around commonalties among team members. Success was realized when teams were based in existing grade/building/subject area designations.

Not surprisingly, the district found that having learning teams is a viable strategy. End-of-the-year evaluation showed that the vast majority (over 90%) of all elementary- and middle-school teachers had achieved the district's desired level of competency in using basic technologies. Furthermore, the approach was deemed worthy to be continued as the professional development model for the integration of technology into the curriculum.

The following are key elements of the learning-team approach:

- **Team leaders are trained in technology and team facilitation skills.** This takes the form of Train the Trainer sessions that can occur in a workshop or academy setting. The duration of team-leader training depends on the existing skill level of the designated team leaders as well as the curriculum in which they are being trained. Team leaders should be selected for their leadership abilities and should be rewarded, if possible, for the time they have spent.

- **Learning teams are assembled.** Each team has a team leader, and its members should all have a common interest beyond their need to learn to use technology. Teams can be grouped in various ways, but it is critical that the team is able to communicate freely and work collaboratively.

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- **Learning teams meet to work on their chosen topics, as well as the overall professional development agenda suggested by the team leader.** Teams should be asked to chart their anticipated progress, set milestones, and define criteria for their anticipated success. It is critical that teams be given time to meet! The learning-team approach is not a time-saver compared to traditional workshop-based professional development. Rather, it is simply a different approach, and one that is more promising in terms of its success rate.

- **The structure, content, and outcomes of the approach must be formatively evaluated.** Not all teams are successful, and sometimes unsuccessful teams need to be restructured. Also, in a constructivist approach such as this, it is important to keep overall learning goals and objectives in mind (i.e., left entirely to themselves, teams can easily go off task). Therefore, it is important for the district to keep a close watch on progress of the overall effort and individual teams. The creation of a formative assessment procedure, i.e., evaluating events and strategies while they are still going on, is very helpful. The results of this evaluation should be reviewed with an eye towards making continuous, ongoing improvements in the approach.

One final note: The overall effect of the team approach is that the district technology coordinator moves away from a role focused entirely on *delivering* technology professional development and instead becomes a planner and implementer. The logistics of training delivery for teams is more complex than simply delivering workshops. Planning, evaluation, and support are imperative. While learning teams cause a shift in priorities for some individuals (e.g., the district technology coordinator and the district professional development coordinator), they do result in each teacher receiving much more professional development experience than would be possible otherwise. In Lexington, 300 teachers received over 30 hours of technology professional development *in a single school year;* it would have been impossible to give 300 teachers 30 hours of workshop time.

For more information about Lexington Public Schools' learning-team approach to technology professional development, visit their web site at http://lps.lexingtonma.org/Tech/Kansas/.

Mentoring

Mentoring is another model for professional development. This strategy came to the nation's attention through the 21st Century Teachers Network. This program was founded by a consortium of educational-service and professional organizations to support teacher technology leaders and is currently primarily operated by the McGuffie Project. The network offers support—in the form of workshops, online resources, and peer discussion groups—to teachers who can in turn become teacher leaders within their schools. In previous years, the network has offered teacher training on a variety of technology-skills and leadership issues. Participants are asked to form and lead a cadre of technology-using teachers back in their schools. In essence, the network provides a sort of team leader training (see above) to its participants.

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One key aspect of the 21st Century Teachers Network is that it promotes and supports mentoring. Just as with learning teams, the idea is that effective professional development is personal, available when you need it, and offered by peers. Mentoring fits all of these requirements. 21st Century Teachers Network mentors are asked to mentor five individuals in their home schools. For more information on the 21st Century Teachers Network, visit them online at http://www.21ct.org/sit08_pub/owa/main.

By no means is it necessary to join an organization such as the 21st Century Teachers Network in order to begin incorporating strategies such as mentoring in your school. You may consider the creation of mentoring relationships as a follow-up strategy to all technology professional development. It is important, though, that you provide training to mentors in both leadership and mentoring skills. Some good online resources for mentoring are the Telementoring Web at http://mbhs.bergtraum.k12.ny.us/mentor/, which deals with telementoring (using technology tools to facilitate the mentoring relationship) and contains a number of links to mentoring resources and other telementoring sites. *Yes, You Can,* at http://www.ed.gov/pubs/YesYouCan/, is a guidebook for establishing mentoring programs. While this guide is specifically about creating programs to support college-bound students, it has a range of resources and ideas applicable to other types of mentoring.

The Authentic Task Approach to Professional Development

The Authentic Task Approach (ATA) was developed by SEIR◆TEC partner Learning Innovations at WestEd and has been adapted for use in a number of SEIR◆TEC professional development activities. The ATA is a professional development design that capitalizes on our need to learn continuously while tackling our real-world work. It is the ultimate version of "learn while you earn" and can be applied in virtually any content area. On one level, the ATA is a structured approach to doing a task, and therefore could be easily mistaken for a simple eight-step approach to problem-solving. This first dimension is extremely efficient in and of itself, and it is appealing to busy, task-oriented people who feel they never have the time they need to accomplish their work. The more powerful dimension, and what makes the ATA a true learning design, revolves around the way the approach is used. Several key features, such as presence of a trained facilitator, protected time, a resource-rich environment, collaborative work, and opportunities to reflect, produce the greater likelihood that deep learning will occur as the approach is used. The tension and balance between simultaneous learning and doing is what makes the ATA such a powerful strategy to promote learning and change.

The ATA is a design for professional development that provides participants, usually in teams, with an opportunity to identify a real task that needs to be done in the context of achieving a larger goal. The participants engage with eight elements as a structure to doing their work. As they pursue their task, they capitalize on resources, and they work toward the completion of their task in a way that promotes deeper learning composed of knowledge, skill, and understanding.

The eight elements of this structured approach can be thought of as steps; however, they are not really sequential. In fact, you can enter into the process at any point and move to any other point; therefore, they are best represented in a circle, as shown in the following diagram.
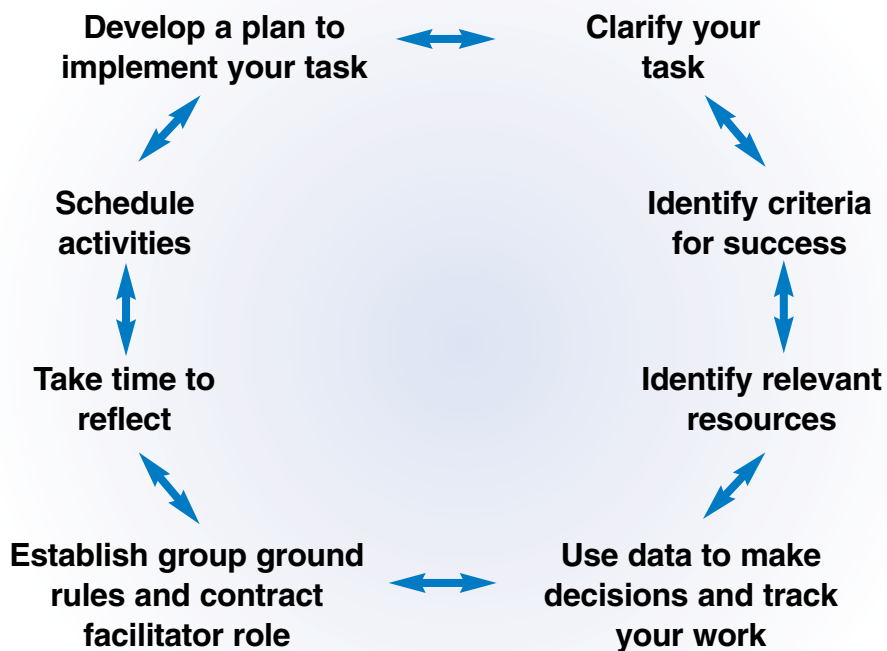
While the process is very flexible, participants usually are most effective if they begin by clarifying their task and coming to a common understanding about what it is, what the product will be, why this work is important, and what success will look like. While you can start anywhere and move anywhere, exactly how you move through the approach depends on whether you are doing so as an individual or as a team, whether you have a facilitator who is not pat of the team but is fully available to work with the team, and, most importantly, what you are learning. Capitalizing on the learning may take the team in a different direction from that originally planned, an that may be the most productive path.

Context in Which the ATA Can Be Used
While the most common format for the use of the ATA is with a team at an institute, we have learned that the approach can be used equally powerfully with any team in any location as the team members work over time. In addition, the basic approach can be used by an individual tackling a task and can evolve into an approach to working and learning in any environment.

Past uses of the ATA have included: working with large institutes in which multiple school- or community-based teams participate and work on their improvement initiatives; working over time with schools planning to adopt a school-wide Title One model; and the adoption of the approach by a large state teachers' union which is using the model to promote high-quality professional development.

The Authentic Task Approach

Develop a plan to implement your task ⟷ **Clarify your task**

Schedule activities

Identify criteria for success

Take time to reflect

Identify relevant resources

Establish group ground rules and contract facilitator role ⟷ **Use data to make decisions and track your work**

The research base on which the ATA has been developed includes research that shows that learning is a strategic act most efficiently employed when the learner senses the need for it. The ATA design models effective professional development in that it is grounded in the principles of results-driven education, is connected to systems thinking, and takes a constructivist approach (Sparks, 1994).

The ATA lends itself to professional development focused on any number of different topics and can yield any number of kinds of products, such as plans, proposals for funding, policy documents, curriculum units, or a mapping or alignment process. Because it is suited to teams of people working at different stages of any given process, the eight elements can be used in a basic operation such as helping a team ground itself in student-achievement data as a means of deciding where to focus improvement efforts, or more complex processes such as revising a technology plan with input from stakeholders or designing an evaluation of some current initiative.

Experience with the ATA and the SEIR♦TEC Academies

SEIR♦TEC has developed a program for professional development that is based on the ATA model. Starting in the summer of 1998, the Summer Academy was piloted with eight cross-role teams from around the southeastern region. Each team came with its own problem and worked with facilitators to produce a design for implementing a technology-integration program back home. A team from Pinellas County, Florida, for example, developed an evaluation plan for its technology program. Another from Jordan Hill Elementary School, in Griffin, Georgia, developed a school-wide plan for using technology in ways that build on existing curriculum and sound instructional practices. In 1999, SEIR♦TEC increased its offerings to serve the needs of teams from schools and state education agencies. We also use the SEIR♦TEC academy model as the basis for academies for higher-education faculty through SERVE's SUNRAY project, a PT3 catalyst grant. Most recently, we have been collaborating with state technology directors and their staffs to implement the model throughout several states in the region. Each four-day academy is tailored to provide for the needs of the participating teams, with a special emphasis on leadership development.

Informal Professional Development

Not all professional development takes place in group settings. In fact, teachers' most meaningful experiences tend to be those in which they learn from their colleagues, especially when it comes to translating what is learned in a workshop into everyday classroom practices.

- **One-on-one and Just-in-time training.** We have found that one of the biggest concerns of teachers after they finish their formal technology training is "Whom do I call for help when I'm back in my classroom?" The key element to this approach is having an on-site support person in each school who is available to answer both software and hardware questions. The ideal person for this job is someone who knows both curriculum and technology; however, finding a person with those qualifications may be difficult.

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Therefore, some schools have both a technology support specialist and a curriculum/technology specialist. Furthermore, we have found that planning for, and keeping, an on-site technology support person is one of the key strategies for successful technology integration.

- **Peer coaching** frequently takes place on-site between teachers who teach similar subjects, teach the same age group, are located in rooms close to each other, or are professional colleagues. This form of training is perhaps the most beneficial because it is the most personal. Some schools have gone so far as to assign a buddy system to create a peer coaching network.

- **Self-study** can occur through peer coaching, one-on-one, or mentoring opportunities. Frequently teachers will take college classes or other outside training courses as part of their personal improvement plan. Teachers who use this approach are usually very self-motivated.

Online Professional Development

As more teachers and administrators gain access to the Internet, we are seeing a growing interest in online professional development. To some extent, the formats are electronic versions of traditional models, such as college degrees and certification programs, courses, workshops, and learning communities.

- **Degree and certification programs.** Teacher-education programs across the country are offering a plethora of degree and certification programs online. For example, Lesley College at http://www.lesley.edu and Pepperdine University at http://gsep.pepperdine.edu offer courses focusing on educational technology. The teachers we know who have taken online courses say that they like being able to work on the courses at home, but they miss the collegiality that is often created when they meet face-to-face for several weeks. With the advent of the US Department of Education's Preparing Tomorrow's Teachers to Use Technology program at http://www.pt3.org, which supports technology integration in pre-service teacher education programs, we can expect the growth in online courses and programs to continue.

- **Online courses and workshops.** A growing number of companies offer online courses and workshops on a variety of subjects. For example, Apple Staff Development Online at http://ali.apple.com/nshelp/welcome.shtml; T.H.E. Institute at http://www.thejournal.com/institute; and WebWorkshops at http://www.webworkshops.com offer courses and workshops focusing on integrating technology into teaching and learning.

- **Learning communities.** There are also numerous web sites offering informal professional development in the form of discussion groups, chat rooms, and message boards. Some have a particular focus, but most cover a variety of topics. The 21st Century Teachers Network at http://www.21ct.org focuses on the development of teacher leaders who mentor others as they collaborate and share teaching practices. TechLEARNING.com at www.techlearning.com offers threaded discussions and databases to help educators locate resources such as software, web sites, and conferences.

While the notion of learning online can be exciting, technology planners should know that it isn't for everyone. Some people simply don't have the stick-to-it drive necessary to complete a course or workshop that goes for several weeks. This applies especially for those who get frustrated when they encounter technical glitches in working online. Another thing to consider is that if you are thinking about online professional development as a means to save money, you ought to read the research on distance education, which suggests that online professional development might not be a cost savings at all. Finally, look before you leap. As with any professional development, you should look beyond the novelty aspects of online learning and consider the instructional design and content of what is being offered. The bottom line is, will this kind of activity help teachers learn the skills and acquire the knowledge they need in order to use technology to enhance teaching and learning?

Professional Development Ideas and Strategies

There are no easy answers for how to inspire and develop widespread technology integration in your school. Nevertheless, we have found that there are some relatively simple techniques that teachers and administrators can use to advance from the just-getting-started stage to one wherein a larger number of teachers are users and integrators of technology. Some of these ideas follow.

Mostly for convenience, we've separated the list into actions that are more teacher-centered and activities that are more administrator-centered. Nevertheless, most ideas involve the work of *both* teachers and administrators for successful implementation. Read both lists if possible.

Following the lists, we've included a *Professional Development Idea Worksheet* you can use to chart and more fully develop one of these ideas in your school.

For Teachers

- **Develop a common vocabulary.** Not everyone has the same definition for the term *technology integration.* For some, it means teaching kids about computers. For others, it means teachers using technology to support learning within the curriculum. We've found that most people are somewhere in between. A common vocabulary will help everyone keep his or her sights on the same goals. We offered our definition of this term in Chapter 3.

- **People learn through example.** You can talk all day about how *you* use technology with your students, but what does this actually look like? Rather than trying in vain to explain what you're doing, why not invite other teachers into your classroom or laboratory to see what you're doing?

- **Offer to model a lesson or unit.** Some schools and districts have established a regular program in which teachers work with students to model promising and best practices for their peers. Even in a less structured way, this would work in most schools. Offer to teach a lesson—using technology—to a teammate's class. Make sure that your teammate stays in the room to watch what

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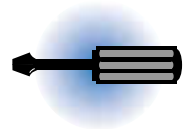
you are doing and to observe his or her students' response. If possible, ask your administrator if there is a small budget for substitute teachers to take over your class while you are teaching someone else's class. Many grants fund substitutes for this purpose.

- **Encourage student advocates.** If you are using technology successfully with your students, make sure that your students are aware of what you are doing. Have a discussion about how technology has impacted *their* work and learning. Remember that students often take for granted the tools that *teachers* consider so novel. Encourage your students to think and talk about how technology could benefit the work that they do in other classes, and then encourage them to share these observations with their parents and other teachers.

- **Share your work with parents.** Parents want to know how technology benefits their children's learning. Rather than waiting for a parent to come to you asking if technology has made a difference, you should go to the parent *first*. Talk about why you believe technology has positively impacted their child's learning and what you need from them to continue this impact. Be realistic; technology doesn't solve all learning problems or reach all students equally well, but make sure you point out successes where you find them. If you are a technology-using teacher, a discussion of technology should be woven into all regular parent conferences.

- **Contact community and business members.** Be prepared to talk to members of your community who want to know about what you are doing that helps students learn.

For Administrators

- **Make sure that technology is interwoven into all professional development.** When hiring staff developers (particularly outside consultants), make sure that they touch upon the subject of technology and can speak fluently about how technology impacts the subject they are discussing. In fact, beyond the initial "how to use an application" type of teacher workshop, this is how *all* technology professional development should ideally be delivered—that is, as part of some other broader topic. At an even more basic level, we note that in this day and age no trainer should work solely from typed overhead transparencies and poster board. Your trainers should at the very least be able to model the type of technology you wish your teachers to use with their students.

- **Retain your district technology committee.** Some schools and districts make the mistake of disbanding the technology committee, or allowing it to drift apart after the initial creation of the technology plan. The committee has several important, ongoing roles, such as overseeing the implementation of the plan, updating the plan annually, and conducting or reviewing evaluation activities and findings work.

- **Sponsor and encourage teachers to visit other districts.** These visits do not have to be limited to showcase technology sites! Rather, teachers can benefit from seeing how other typical schools integrate and support technology. Likewise, you should return the favor and offer your schools as places to visit to teachers from other districts.

- **Personally model the use of technology.** We've all heard about the superintendent who started to send out memos only via e-mail. That may be a bit drastic for some administrators, but the point is well-taken. Teachers will see no reason to use technology that administrators do not take the time to use and master. Suggestions for modeling include using e-mail, sharing information from e-mail and the web with staff at district meetings, taking an active interest in the development of district and school web sites, and participating in teacher technology training and professional development. Remember that the idea is to *actually use* technology, not simply to direct its use by others.

- **Encourage the development of student technology showcases.** Encourage teachers and students to display work that demonstrates technology integration at school open houses and other events where parents and community members come into the schools. After all, these people have paid (in one way or another) a lot of money for this technology; show them how it's being used!

- **Hold a community meeting to discuss your district's technology plan.** You spent months writing the plan, so isn't it important to share your plan with the community? Have teachers and other technology committee members present key parts of the plan. Lead discussions about how it will be implemented and how it will impact students. Don't just present, but lead discussions and encourage a community dialog. Make sure that these discussions are recorded in some fashion for all teachers to review afterwards.

- **Be prepared to talk with business and community leaders regarding what's working to benefit students' learning.** Where are you with your efforts, and what more do you need? Can community collaboration help you achieve your goals?

Professional Development Idea Worksheet

Taking an idea for professional development from the previous pages, work out how you could implement it in your school or district. To assist in this process, we have provided this worksheet which reminds you of the various supports, materials, and hooks you might need to make technology implementation a reality. A blank version of this worksheet is included in the Appendix.

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Appendix   SEIR◆TEC

Professional Development Idea Worksheet (page 1 of 4)

Integration Idea

_____

_____

_____

_____

Impact

(It's not necessarily true that every idea will impact each of the following populations, but if your integration is truly systemic, there's a good chance that it will. In a sentence or two try to describe how your idea for technology implementation will impact each of the following.)

Impact on Teachers

_____

_____

_____

Impact on Students

_____

_____

_____

Impact on Administrators

_____

_____

_____

Impact on Community and Others

_____

_____

_____

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Professional Development Idea Worksheet (page 2 of 4)

Hook to your District (or School) Technology Plan
(All aspects of technology integration should be reflected in the vision and goals of your strategic technology plan. Describe below how your idea for integration supports one or more goals in your technology plan.)

_____
_____
_____
_____

Who's Responsible?
(Who will take the lead responsibility on various aspects of your professional-development idea? Once again, not every idea will have all of these aspects, but most will.)

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_____
_____
_____

Technology Infrastructure (hardware, software, and network installation, maintenance, support, etc.)

_____
_____
_____

Communication/Documentation of Success (Who's going to tell your community about the outcomes from implementing this idea?)

_____
_____
_____

Other

_____
_____
_____

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Professional Development Idea Worksheet (page 3 of 4)

Timeline

Use this space (or another sheet) to create a step-by-step procedure for implementing your idea.

Who?	Does what?	When?

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SEIR◆TEC   **Appendix**

Professional Development Idea Worksheet (page 4 of 4)

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Evaluation and Reflection

Nothing fancy here, but just take a moment to describe how you will know whether you were successful in the implementation of your idea. Will there be interim project benchmarks? Will there be something that you can qualitatively describe or quantitatively count as outcomes from your idea?

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Professional Development

A Framework for Designing Professional Development

In their landmark text, *Designing Professional Development for Teachers of Science and Mathematics,*[1] Susan Loucks-Horsley and her colleagues provide guidance for those who have responsibility for designing or conducting professional development programs or initiatives. While the publication is targeted to professional developers for teachers of science and mathematics, others at Learning Innovations at WestEd, a SEIR•TEC partner, have adapted the design framework to support professional development for teachers in other content areas. Based on a set of principles that apply to a variety of content and process areas, this design framework can help those responsible for professional development go from fragmented and limited professional development offerings to a more systematic and systemic approach.

The accompanying figure illustrates a design framework that organizes these elements to suggest both how to design a new program and how to analyze the design of an existing program. The four boxes through the middle of the framework represent a typical process of planning and action. This process helps designers of professional development—which should include teachers, administrators, community and other resource people—to think about several important features of good programs:

1. There needs to be a set of goals—a set of clear and shared outcomes for the program. These goals must drive all other elements of the design.

2. There needs to be planning—careful consideration of how the pieces fit together and how to proceed over time.

3. The plan needs to be implemented.

4. There needs to be continuous reflection on and evaluation of progress that feeds back into adjustment of plans and subsequent actions, as well as adjustment of goals.

This four-step cycle is meant to repeat itself, taking place over months as a program proceeds, or in the minutes it takes to monitor and adjust an ongoing event to increase its effectiveness.

In addition to the four central steps of the cycle, the design framework considers four inputs important to the design process. Designers of professional development need to draw upon:

1. The existing base of knowledge and beliefs about learning, teaching, the nature of particular content and process areas, professional development, and the process of change.

2. An analysis of the context in which teachers teach and their students learn.

3. A set of critical issues that can make the difference between success and failure.

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[1]The above text has been adapted from *Ideas That Work: Mathematics Professional Development* by Eisenhower National Clearing House (ENC), The Ohio State University, 1998.

Professional Development

Professional Development Design Framework
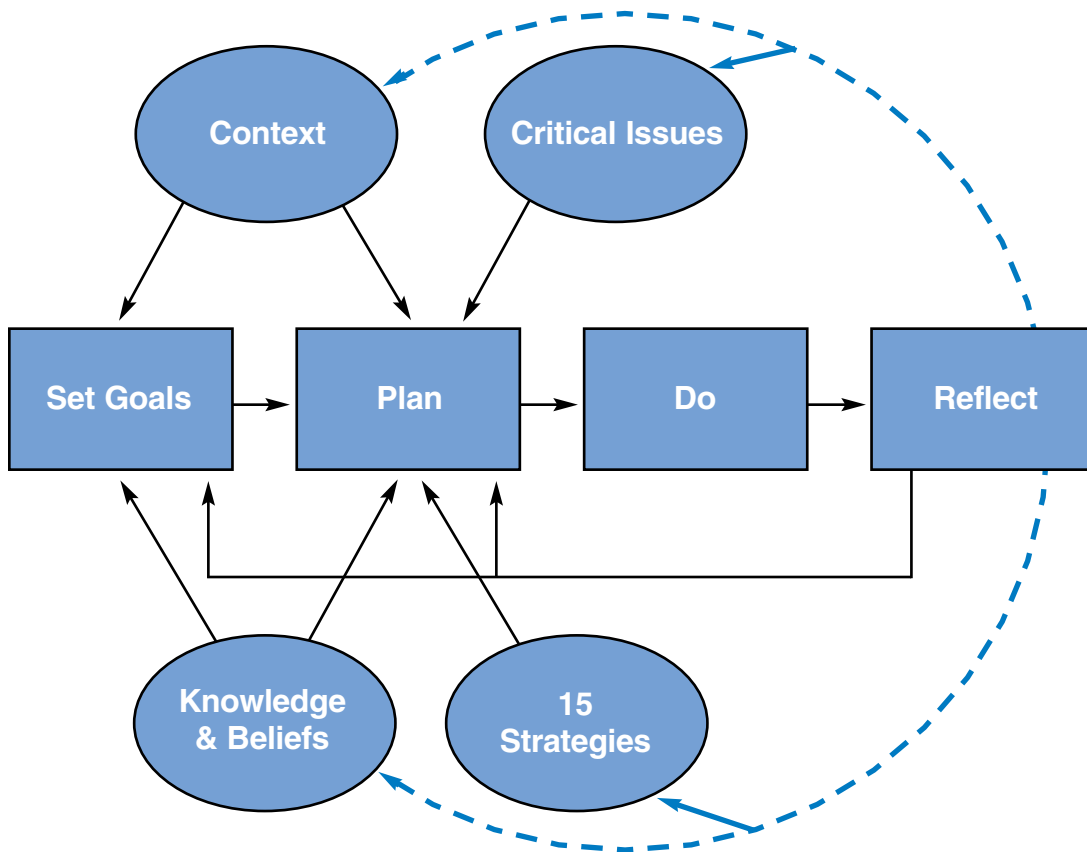
4. A repertoire of strategies for professional learning that can be combined in different ways at different times to maximize different learning goals.

Those looking for a single, definitive model of professional development will be disappointed that none exists. Every situation and initiative requires its own unique model. But this does not mean that each program needs to start from scratch. As explanation of this design model indicates, there is a broad and deep base of information, research, and, indeed, wisdom that can be drawn upon to build unique and successful professional development opportunities for teachers.

Checklist of Professional Development Strategies

In the table that follows, we list fifteen professional development strategies and assess their applicability to different stages of teacher awareness and development.

Those strategies which have a *primary* relationship are given an "●"symbol whereas *secondary* strategies have an "○" symbol.

A Strategies that focus on developing awareness are usually used during the beginning phases of a change. The strategies are designed to elicit thoughtful questioning on the part of the teachers concerning new information.

B Strategies that focus on building knowledge provide opportunities for teachers to deepen their understanding of mathematics content and teaching practices.

C Strategies that help teachers translate new knowledge into practice engage teachers in drawing on their knowledge base to plan instruction and improve their teaching.

D Strategies that focus on practicing technology help teachers learn through the process of using a new approach with their students. As teachers practice new moves in their classrooms, they deepen their understanding.

E Strategies that provide opportunities to reflect deeply on teaching and learning engage teachers in assessing the impact of the changes on their students and thinking about ways to improve. These strategies also encourage teachers to reflect on others' practice, adapting ideas for their own use.

Strategies for Professional Development

The following checklist is adapted from *Designing Professional Development for Teachers of Science and Mathematics* by Susan Loucks-Horsley, Peter Hewson, Nancy Love, and Katherine Stiles. 1998, Thousand Oaks, CA: Corwin Press.

Purposes:

A = Developing Awareness, B = Building Knowledge,
C = Translating Into Practice, D = Practicing Teaching, E = Reflection

Strategies	A	B	C	D	E
Immersion					
1. Immersion in solving problems Engaging in the kinds of learning that teachers are expected to practice with their students, such as inquiry-based mathematics investigations.	○	●			●
2. Immersion in real-world, authentic activities Intensive experience in the day-to-day work of a professional, often in a laboratory, industry, or museum, with full engagement in research activities.	○	●			
Curriculum					
3. Curriculum implementation Learning, using, and refining use of a particular set of instructional materials in the classroom.		○	○	●	
4. Curriculum replacement units Implementing a unit of instruction that addresses one topic in a way that illustrates effective teaching techniques.		○	○	●	
5. Curriculum development and adaptation Creating new instructional materials and strategies or tailoring existing ones to better meet the learning needs of students.		○	●		
Examining Practice					
6. Action Research Examining teachers' own teaching and their students' learning by engaging in a research project in the classroom.		○			●
7. Case Discussions Examining written narratives or videotapes of classroom events and discussing the problems and issues illustrated.	○	○			●
8. Examining Student Work and Thinking, and ScoringAssessments Carefully examining students' work to understand their thinking so that appropriate instructional strategies and materials can be identified.	○	○	○		●

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Purposes:
A = Developing Awareness, B = Building Knowledge,
C = Translating Into Practice, D = Practicing Teaching, E = Reflection

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Strategies	A	B	C	D	E
Collaborative					
9. Study groups Engaging in regular collaborative interactions around topics identified by the group, with opportunities to examine new information, reflect on classroom practice, and analyze outcome data	○		○		●
10. Coaching and mentoring Working one-on-one with another teacher to improve teaching and learning through a variety of activities, including classroom observation and feedback, problem solving and co-planning.		○	○	●	○
11. Partnerships with experts in business, industry, and universities Working collaboratively with practicing experts with the focus on improving teacher content, knowledge, instructional materials, and access to facilities.	○	●			
12. Professional networks Linking in person or through electronic means with other teachers to explore topics of interest, pursue shared goals, and address common problems.	○	●	○		○
Vehicles and Mechanisms					
13. Workshops, institutes, courses, and seminars Using structured opportunities outside the classroom to focus intensely on topics of interest, including mathematics content, and learn from others with more expertise.	○	●	○		
14. Technology for professional development Using various kinds of technology, including computers, telecommunications, video, and CD-ROMs, to learn content and pedagogy.	○	●	○		○
15. Developing professional developers Building the skills and deep understanding of content and pedagogy needed to create learning experiences.		○	○	●	○

Making the Most of Professional Development

Strategies for Successful Professional Development Implementation

The design of your professional development plan is just the first step. The next step is to implement it, and that means motivating the staff to participate. Following are several strategies that you might consider when implementing your plan.

- **Have the technology that the staff is being trained on available immediately.** Nothing will cause a program to lose its credibility quicker than teachers not having immediate access to the same technology in their classroom. Why should they spend valuable time (and get their hopes up) with training if the classrooms don't have the equipment or software? While unforeseen delays and scheduling can disrupt careful planning for coordinating hardware/software delivery and professional development, it always helps to have workable alternatives to manage a situation like this.

- **Offer incentives for participation.** The best incentive for participation in technology professional development is access to technology. That means that teachers will be given computers or other hardware and software incentives for their classrooms if they attend professional development sessions. We have seen great successes when districts tie workshop attendance to the opportunity to use technology. In effect, this makes technology a privilege rather than a right. The privilege is earned through participation in professional development and a willingness to collaborate with staff developers in future efforts. Other incentives such as stipends or recertification requirements can also help motivate people to come to training, but they do not guarantee that the attendees are really interested.

- **Require participants to engage in follow-up activities.** Teachers should not be allowed merely to attend planned activities, receive their training, and then return to their classrooms without sharing their knowledge. Rather, participants need to agree to engage in such activities as mentoring, model teaching, and/or serving as trainers in upcoming workshops. This extra effort might be rewarded through stipends, more technology rewards, release time, or salary credits.

- **Offer more than keyboard sessions.** Be sure to include sessions that are about writing and planning curriculum and other topics—not just sitting and working at a keyboard. Remember that the keyboard is intimidating to some teachers, and they will not be inclined to sit in workshop after workshop where they are performing uncomfortable and alien tasks. Rather, make your professional development sessions a combination of reinforcing what we know and learning new things. Our experience is that the non-hands-on technology workshop will be jarring at first to some teachers, as it runs counter to their expectations of what a technology workshop should be. Nevertheless, you need to take the time—non-keyboard time—to contextualize technology

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use, such as learning ways of changing from teacher-focused instruction to student-focused learning (see ACOT research discussed in Chapter 3).

- **Provide time for out-of-class practice and always provide handouts.** Once again, many teachers learn best when they can practice new skills on their own, perhaps even at home on their personal computers. You cannot expect learners to master technology solely within the computer lab, and the best learning often occurs in private on the classroom computer just after class dismissal or during a planning period. To support this independent learning, be sure to provide step-by-step instructions and handouts for every new application or topic you cover. Always provide actual examples of ways in which the technology can be used within the curriculum. Even if time does not allow a thorough exploration of the examples during workshop time, make sure that every participant leaves with additional reading.

- **Use experienced trainers.** Just as good teachers serve as facilitators of knowledge development for their students, teachers themselves need good facilitators for their own development. Workshop facilitators should have a classroom background or at least have experience with teachers and the teaching environment. The appropriate trainer/facilitator will be able to communicate with teacher participants about how the technology in question is actually used in the classroom. In our experience, this contextual experience is just as important as technical knowledge. The trainer who might do an excellent job teaching insurance agents to use spreadsheets might be absolutely worthless trying to teach teachers to use spreadsheets.

- **When grouping workshop participants, make sure that the group has a common interest other than technology.** Training that takes place in one large workshop is both difficult to manage and ineffective. When you have a large group, it's a good idea to break participants into groups. Different groups will attend different sessions at different times. When grouping participants, it is important to give some thought as to how the groups are constructed. We have found that the key to successful teacher groups is that the individuals in the groups have a common purpose. When that purpose is just to learn the technology tools, we rarely find that any strong group bonding results. Identifying a common curriculum concern, curriculum subject area, or grade level will create a stronger bond. When this common purpose is established within a group of participants in a technology professional development event, the group can have a focus that transcends learning about technology.

- **Develop several professional development strands and offer them to different groups of participants.** It can be very frustrating for teachers (or anyone) to feel placed in a one-track, lock-step curriculum. Even more frustrating can be working with individuals well above or below your current technical ability. Once again, grouping everyone into the same workshop setting is seldom good for anyone. Effective professional development does not work with the least common denominator. An alternative is a professional

development series with sessions that address different needs, interests, and classes for different ability levels. This does not mean that you need to exponentially increase your total number of professional development offerings. While you may need to offer a few more sessions on basics (just to get everyone started), later sessions can be offered on a first-come, first-served basis. Everyone will eventually be able to take all courses. By allowing some choices, you create an environment where people have the opportunity to take professional development at their own schedule and pace. The primary benefit will be improved relevance to participants' own needs.

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Resources

Professional Development Planning Resources

The following is a summary of the online resources for professional development planning described in this chapter.

Online Resources

http://www.nas.edu/rise/backg4a.htm
The National Academy of Science web site includes a detailed account of the *Concerns Based Adoption Model (CBAM),* a model for understanding how the change process affects professional development.

http://www.sedl.org/pubs/catalog/items/cha22.html
SEDL offers *CBAM* information, tools, and training. Visit this site to learn more.

http://www.iste.org/Standards/index.html
Professional-education standards developed by the International Society for Technology in Education (ISTE) are presented on the ISTE web site.

http://www.ofps.dpi.state.nc.us/OFPS/hm/te/techcomp.htm
The North Carolina Department of Public Instruction, which is the state department of education, has developed a set of technology competencies which are featured on the department's web site.

http://lps.lexingtonma.org/Tech/Kansas/index.html
The web site for the Lexington (Massachusetts) Public Schools provides information on the required standards and skills established by the schools.

http://www.bham.wednet.edu/tcomp.htm
The Bellingham (Washington) Public Schools web site includes information on staff use of the Technology–Self-Evaluation Rubric developed by the schools.

http://www.21ct.org/sit08_pub/owa/main
Go to the 21st Century Teachers Network site for information on its mentoring program.

http://mbhs/bergtraum.k12.ny.us/mentor/
The Telementoring Web deals with using technology tools to facilitate mentoring relationships.

http://ed.gov/pubs/YesYouCan/
Yes, You Can is a guidebook for establishing mentoring programs.

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http://www.lesley.edu
http://gsep.pepperdine.edu

Web sites sponsored by Lesley College and Pepperdine University include information about courses focusing on educational technology.

http://www.pt3.org

The US Department of Education's Preparing Tomorrow's Teachers to Use Technology program supports technology integration in teacher education programs.

http://ali.apple.com/nshelp/welcome.shtml

Apple Staff Development Online offers online courses and workshops on a variety of subjects.

http://thejournal.com/institute

See the web site sponsored by T.H.E. Institute for information about courses online.

http://webworkshops.com

WebWorkshops are courses and workshops focusing on integrating technology into teaching and learning.

http://www.techlearning.com

The TechLEARNING site includes threaded discussions and databases to help educators locate technology resources such as software, web sites, and conferences.

Print Resources

Hord, S.M.; Rutherford, W.L.; Huling-Austin, L.; and Hall, G. 1987. *Taking Charge of Change.* Austin, TX: Southwest Educational Development Laboratory.

Professional Development

Putting It All Together

A conversation about technology professional development

So, it seems that professional development is a really important part of technology integration.
Yes, it is. Since we presented several ideas in this chapter, we would like to take this opportunity to summarize some of the most important things to remember.

First, there is the need to plan. We think that professional development has a place very early on in the planning and certainly for the implementation process. The key, of course, is to create goals related to the types of technology professional development your school or district needs and then to set about acting on those goals.

The benefit to the planning team is that the planning work itself becomes a form of professional development. The planners become considerably well-versed in the substance of what they are planning and in the process itself. To ensure this type of learning, it's necessary to incorporate time for reflection, questions, clarification, and other aspects of a good learning experience. In a very general way, the technology planning experience can be a constructivist learning experience. No one comes into the process knowing all of the answers, but when planning is done well, most leave with a very clear idea of what the plan is and what it will take to implement that plan. The point is that professional development occurs almost from day one, and it's good to be aware of all of the different ways that it can (and does) occur.

When should we begin to offer professional development sessions?
This is a coordination and planning issue that depends on when the hardware and software will be available to teachers in their classrooms. It doesn't make sense to offer sessions when hardware and software availability is months away. If technology will be available at the beginning of the school year, most schools will offer professional development prior to the opening of the school year and then follow up with sessions throughout the school year.

Should the computers be in teachers' classrooms before starting professional development?
The best situation is to have computers in classrooms before teachers participate in professional development. If this isn't possible, the computers should be there *when they come back* from professional development. Remember that there is no quicker way for your professional development plan to lose credibility than to fail to make computers available to staff immediately after their training. Another problem that we see is professional development sessions that teach the use of a technology, such as the Internet, that will not be available within the school or school district for a long time. The district or school should provide appropriate

professional development based on the technology resources that are available to teachers and students.

What professional development topics are most commonly offered?

We see a lot of offerings for AppleWorks and Microsoft Office basics. It seems that most people have some basic knowledge of word processing, but there is a need for more spreadsheet training. Curiously, I don't see many offerings for the database applications in AppleWorks or Microsoft Office. After basic application training, there is a big demand for Internet training. After Internet training, the perennial favorite is PowerPoint. It is a program that can be easily learned and produces dramatic-looking results.

What would you like to see more of?

It's a mistake to say what a district *should* be doing without being in touch with information regarding their actual situation. As a basic rule, no one should try to prescribe someone else's professional development. But having said that, our experience shows that there is a continuous need for basic training workshops in applications software along with efforts that focus more on curriculum integration.

One thing I find lacking is support for those who have entry-level skills, that is, people who are totally new to using computers. Most districts do little for staff at this level. I suggest offering entry-level workshops or one-on-one support for those who need assistance of this type.

The greatest need I see is for technology professional development that addresses real needs related to teacher understanding of how technology impacts teaching and learning. In particular, teachers need to understand how technology can be a vehicle for changing from teacher-driven instruction to student-focused learning. They also need to learn and try out new ways of organizing the classroom and learning activities, such as project-based learning of the research and theory behind constuctivist learning. And they need opportunities to learn how technology can help students learn constructs mandated by state and national standards.

How many districts have a technology professional development plan?

Unfortunately, too few. Still, it's important to note that the technology professional development plan need not exist as a separate document from the overall technology plan. We think it is better to have the technology professional development plan incorporated into the district's overall professional development plan.

Of course, the problem is that many districts have absolutely nothing that even resembles a plan for general professional development, let alone technology professional development. We also find districts that commit to spending tens of thousands of dollars on professional development without taking time to see what their staff really needs.

Whether a district is introducing new technology or updating technology, professional development planning should be addressed as part of technology planning. This is where you will see that planning into practice is a recursive process that uses current practice to inform further planning.

Professional Development

How can we design an evaluation plan while we are so busy planning everything else? When will we ever finish planning and get to the implementation process?

Time and timeliness are a concern for all. When you do your timeline, you will see that you cannot accomplish everything at once, or even in one year. Therefore, you will need to do it in phases or stages. Create a three- or five-year time line, and show how these phases and stages will be spread across that time. It is far more prudent to go slowly and do things well than to go too fast and do things poorly. And consistently revisit what you have implemented, because you will probably be repeating the activity at a later date.

And finally, what do you think is the biggest challenge in professional development planning and implementation?

Making it appropriate, timely, and meaningful.