Introduction

Chapter 1

Table of Contents

Purposes of Planning into Practice

A vision without a task is only a dream.
A task without a vision is mere drudgery.
A vision with a task can change the world.
Attributed to Black Elk

As in any other profession, schoolteachers, principals, and administrators need a vision to help them toward their goals. This is the context and underlying principle of *Planning into Practice: Resources for Planning, Implementing, and Integrating Instructional Technology*. The intent of this book is to support schools as they move along a continuum that connects the vision they have for technology and student learning with the tasks they need to accomplish in order to achieve their vision, in a way that makes a difference.

Technology is a tool that can promote greater learning, but only if its use is planned and carried out with that goal in mind. Success of technology implementation depends not only on how well technical components are planned but, more importantly, on how well the school community goes beyond technical requirements. The whole endeavor of teaching must be supported and carried through in a way that demonstrates the benefits of teaching and learning with technology, addresses an individual's fears as well as hopes, and helps all involved learn how and when these tools might best be used.

If implementing strategies for using technology to improve student learning is the overarching goal, educators need the how to's of creating effective technology plans, and steps for implementing them. The questions are many: How do we begin? We've had equipment for years, but how can we use it more efficiently and effectively? What do we do about the resources we'll need? What equipment do we *really* need? What can I do to integrate technology to enhance learning in social studies (or science, or art, or . . .) and how do I manage that specific task?

Some communities may have a wealth of assistance in initializing their technology programs. Other communities may have the benefit of a visionary leader who supports the changes necessary for successful technology integration. Still others may only be in the initial stages of planning, or they may not have strategically examined where they want to go in a way that builds a large school community movement. Wherever a school or district is now, there is progress to be made in using technology to promote greater student learning and in understanding more about how to go about achieving this goal.

This guidebook is for use by all the teachers, administrators, and policymakers who work to integrate and implement instructional technology. While we hope it may serve as a guide to technology planning and provide a useful set of

processes for implementing the plan, it is not a compendium of all you need to know about instructional technology. Rather, it should be considered more as a set of tools and information to help with the tasks that can lead to something greater—improving teaching and learning for *all* students.

How this Publication Came About

It's one thing to have a technology plan, and another to have a truly effective *strategic* plan that has been developed with the big picture of educational improvement in mind. Furthermore, even the best plan needs to be supported by an assortment of individual strategies, actions, and (dare we say?) tricks, to make it come together and work for students.

Having said that, we have two purposes for creating this publication. First, we want to assist readers—be they teachers, administrators, or community members—in making their district or school technology plan a *strategic* educational plan. Second, we want to offer a variety of actions that can be taken to begin to implement the goals and objectives of the technology plan. For practical use, we have included checklists, tip sheets, and worksheets that you can adapt for your own needs.

About SEIR◆TEC

Before we go further, we'd like the reader to know more about the context in which this book evolved. SEIR◆TEC is one of six regional technology in education consortia (R◆TEC) funded by the U.S. Department of Education's Office of Educational Research and Improvement. SEIR◆TEC is composed of educational organizations committed to providing information, professional development, and technical assistance for educators in the southeastern states, Puerto Rico and the US Virgin Islands, in order to support and promote improvement in teaching and learning. Seven organizations make up SEIR◆TEC: SERVE (lead agency); AEL, Inc.; the Instructional Technology Resource Center at the University of Central Florida; Learning Innovations at WestEd; the National Center on Adult Literacy; Southwest Educational Development Laboratory; and the Southern Regional Education Board. The following mission statement guides the work of the consortium:

> **SEIR◆TEC promotes the use of technology to improve teaching and learning by providing leadership through technical assistance and professional development in the areas of curriculum and instruction, policy, planning, and evaluation, with emphasis on benefiting traditionally underserved populations, such as low-income, urban, rural, and racial- and language-minority populations.**

The authors of this publication are affiliated with the SEIR♦TEC organizations and have had extensive firsthand experience helping schools with their technology planning and integration efforts. Our work is grounded in research, effective practices, and an understanding of the factors and processes that promote and support systemic change, as well as our collective wisdom and experience. We make available a program of consortium services to a variety of audiences and service providers in order to address our mission of improving teaching and learning through the use of technology. While our direct services are to our region, we also work with the other R♦TECs to create a national system of support. For more information, please consult the R♦TEC web page at http://www.rtec.org/.

The SEIR♦TEC Intensive Site Initiative

One of SEIR♦TEC's flagship initiatives is our work in partnership with *intensive sites*. These are schools and districts that have the goal of incorporating technology in ways that promote better teaching and learning for their students. Most of these sites are economically disadvantaged schools and districts with high numbers of traditionally underserved populations, each of which is struggling to achieve technology integration and use in the face of many obstacles. Each has its own unique student population, teacher corps, and learning environment.

For each intensive site, SEIR♦TEC has provided on-site technical assistance, resources, and professional development. Typically, that means each school is assigned a staff member who meets with teachers at regular intervals. Sometimes, it means bringing in someone with special expertise, such as web site design, program budgeting, or program evaluation. Intensive sites may also participate in SEIR♦TEC Academies and other professional development opportunities. Our partnership with the intensive sites as they attempt to move through the stages of planning into practice has allowed us to understand more fully the many factors that affect their success.

As we began providing the technical assistance and capacity-building that these schools could not otherwise obtain, we also began documenting the process of technology adoption and the factors that affect success. There is a solid body of research on the factors that affect the use of technology, such as those supported by the technology-rich Apple Classrooms of Tomorrow studies.[1] However, there is a dearth of information about effective strategies for technology adoption and integration in technology-poor environments, such as the majority of the SEIR♦TEC intensive sites.

So, part of the evolving design of the intensive site initiative, and what puts it in the category of high-impact technical assistance, is that we are learning lessons through this partnership that can inform practices to support technology adoption and integration in similar schools and districts. While the tools and

---

[1]David C. Dwyer, Changes in Teachers' Beliefs and Practices in Technology-Rich Classrooms, *Educational Leadership,* vol. 48, no. 5 (1991), pp. 45–52.

advice contained in this guide can be equally useful in resource-rich and resource-poor environments, it is clear that the barriers faced in the more disadvantaged sites cannot be overcome by providing a set of materials, tools, guidelines, or even money—alone! Continuing to deepen our understanding of the issues is essential if we are to help the schools succeed.

After three years of working in the intensive site schools and districts, we documented observations about how technology may be successfully integrated into teaching and learning. We offer these learnings here; the booklet can also be downloaded from our web site at http://www.seirtec.org. As *Planning into Practice* goes to press, we are updating the lessons learned, which will also be available on our web site.

Factors Influencing the Effective Use of Technology for Teaching and Learning: Lessons Learned from the SEIR◆TEC Intensive Site Schools

Over the past three years, SEIR◆TEC has been providing substantial levels of technical assistance and professional development to fourteen resource-poor schools across the Southeast and Islands. Typically, the on-site work entails a member of the SEIR◆TEC staff spending three or four days per month in a school, working on various aspects of technology integration. The nature and extent of the staff development and technical assistance are determined in large measure by local teachers' and administrators' needs and exigencies, such as technology planning, teaching with technology, and program evaluation.

Our work in the intensive site schools has served as a rich opportunity to study the way technology is, or is not, successfully integrated into teaching and learning. The following narrative represents some of our observations and lessons learned thus far.

1. Leadership is the key ingredient.

Our experiences in working with the intensive sites confirm what the research literature says, that leadership is the single most important factor affecting the successful integration of technology. This is true at all levels—state, district, and school. For example, the states with the most successful technology programs are those that have had visionary governors, legislators, and department of education staff who are committed to the use of technology as a tool for teaching and learning. Similarly, the schools who have made the most progress, including our intensive sites, are those with energetic and committed leaders. Here are some more specifics.

The Vision Thing

It is especially important at the school level for the principal to have a vision of what is possible through the use of technology and be able to work with others to achieve the vision. Without this vision, and the translation of the vision into action, lasting school improvement is almost impossible. We notice time and time again that the schools in which we have had the greatest impact are the ones

with the strongest leaders—leaders who are committed to helping their teachers and students use technology effectively.

Leading by Example

Effective principals lead by example. They have a clear idea about how technology can support best practices in instruction and assessment, they use technology fluently, and they participate actively in professional development opportunities. The leader who expects to see technology used in the classroom but does not know how to use e-mail sends, at best, a mixed message.

Leadership + That First Success = Vision Accomplished
(from Booneville, Mississippi)

"One of the most important lessons by far is the fact that it takes supportive leadership to ensure an intensive site is successful. Supportive leadership can be in the form of allowing teachers to have substitutes while they attend a workshop, encouraging teachers to work in teams or participating in training sessions themselves. These [leadership] attributes provide a positive, workable environment for the teachers. . ." according to Jeanne Clarke, SEIR◆TEC Intensive Site Coordinator for Booneville Middle School. Who was this leader? The school principal, Linda Clifton. Ms. Clifton had such a strong vision of how technology could benefit the students of Booneville Middle School that she began to seek help from many different sources. With her first grant proposal funded and with ongoing training and technical assistance from SEIR◆TEC, she leveraged this initial support to obtain additional resources. All the while, she urged, supported, and energized the teachers to incorporate technology into the classroom activities. From a couple of Apple IIe computers to a fully networked school and a new, technology-rich science wing, Ms. Clifton led the Booneville Middle School staff to use technology to benefit student learning. In 1998, the school was one of 50 schools from across the nation to be recognized at the SchoolTech Expo Showcase of Model Schools, a program to honor schools who have used up-to-date technology to dramatically improve classroom learning.

Supporting the Faculty

In addition to modeling the use of technology, supportive school principals highlight the efforts of teachers who attempt to use technology to improve teaching and learning. Effective leaders also attend professional development sessions with their teaching staff.

No Reform-of-the-Month Clubs

Real reform takes a lot of time and energy. Faculty who are bombarded with a constant stream of new initiatives to be implemented quickly become overwhelmed and resentful. Effective school leaders focus on reform initiatives that offer the most promise for improving teaching and learning, and they ensure that faculty have the resources, skills, and time necessary for turning the promise into reality.

Shared Leadership

School technology committees can serve an important role in making decisions that reflect the needs of a total school community. School leaders help this happen by showing both interest and trust in decisions that the group makes. Committee members should be those who are representative of the total faculty and staff and selected by a method other than principal-appointed. Committee meetings should not begin with the principal or technology coordinator announcing his or her software decision and who will get the new computers that just arrived. Shared input and decisions are critical for committee members to feel that they serve a real role and to reduce the chances that decisions will be sabotaged.

2. If you don't know where you're going, you'll end up someplace else.

Each organization, whether it be a district or an individual school, needs to spend time developing and updating a comprehensive plan—starting with its vision, mission, and goals. Every decision made should be one that supports the organization's vision. The degree of success that a school has in implementing technology will depend, in part, on the quality and maturity of its technology plan. A technology plan that reads like a shopping list cannot guide a school in making its hardest decisions. A useful plan reflects the ideas of an entire school community and is connected to overall school goals. It focuses on the use of technology to support teaching and learning. When we first began working with the intensive site schools, many needed assistance not only in writing a plan, but also in creating a process for developing, implementing, and updating the plan. After all, there's not much point in spending time and energy on a plan that's going to sit on a shelf and not be used.

We have noticed that the plans and processes created at some of the intensive site schools share some of the same problems as school technology plans everywhere. The first is a tendency for one individual or a few people to write the plan, a practice that flies in the face of the notion of stakeholder buy-in and community involvement. A second is that many plans lack a detailed component or plan for professional development that covers the broad range of skills teachers and administrators need. The third common problem is that most plans lack a component for evaluating the success and effectiveness of the program. The omission of components usually stems not from a lack of interest but perhaps from a lack of expertise in how to set up an effective professional development program in technology or how to conduct an evaluation that will yield meaningful and useful results.

Implementing the plans also requires working together in groups, devising new patterns for staffing, and many other organizational changes that are brought on by the use of technology. However, many plans never go beyond the early stages of implementation, because no one is assigned responsibility for the implementation activities. Someone must be in charge for technology plans to be implemented.

3. Technology integration is a *s-l-o-w* process.

Truly integrating technology into teaching and learning is a slow, time-consuming process that requires substantial levels of support and encouragement for educators. The Apple Classroom of Tomorrow studies (Dwyer et al., 1991) of what happens in technology-rich environments have shown that teachers go through predictable stages in their use of technology and that this process takes from three to five years. We have found that in technology-poor schools, the process takes even longer. In our intensive sites, we have also started to notice that there seems to be a correlation between the amount and level of technical assistance we provide and movement along the continuum of technology integration, i.e., the schools that receive the most attention are making the most progress.

Unfortunately, in most of the resource-poor schools in our region, teachers have only had access to the basic types of training in which they learned to use a single application. Follow-up and support are the exception rather than the rule.

4. No matter how many computers are available or how much training teachers have had, there are still substantial numbers who are "talking the talk" but not "walking the walk."

When you consider the fact that microcomputers have been in schools for almost twenty years, and considering that most teachers have participated in some type of professional development, it is still surprising to see how many teachers there are who do not use technology at all. We know and appreciate that there are a variety of reasons, some of which we cannot do anything about and others that we can do something about. For example, there are a few research studies that indicate that some teachers have a natural proclivity toward using technologies in general and computers in particular, while others do not. And, like the general population, there are some teachers who embrace change, while others resist it. On the other hand, there are some research-based practices and common-sense strategies we can implement that enhance the likelihood that teachers will begin using technology.

  a. Begin with teaching and learning, not with hardware and software. As technology-oriented professionals, we have a tendency to frame professional development and echnical assistance around technology tools, such as word processing and databases. We tell teachers, "Now what you need to do is integrate word processing into your lesson plans," which can work with motivated teachers, but not those who need a lot of support (or a gentle shove). In short, teachers have a difficult time applying technology skills in the classroom unless there is a direct linkage with the curriculum, teaching strategies, or improvements in achievement. Professional development tends to have a stronger impact when we frame it like this: "Let's look at what students are learning this year and then see how technology can make it more effective."

  b. The training-of-trainers model means more than providing a workshop to a few people, and professional development might just be the most misunderstood or misrepresented model in education. Quite often it is

interpreted as one or two people delivering a workshop in which the participants are supposed to acquire the content knowledge and training skills needed for conducting turnaround training. Unfortunately, this seldom works because (a) the content is too complex to be mastered in a one-shot workshop, and there is no follow-up accommodation for the would-be trainers to become proficient; (b) there is no support for turnaround training; or (c) the would-be trainers are inexperienced trainers. For the model to work, all three barriers must be overcome.

c. It's a waste of time and energy to provide technology training when teachers don't have the resources, opportunity, and support needed to apply their new knowledge and skills. It should go without saying that it makes absolutely no sense to provide training on technology applications when teachers don't have access to appropriate hardware and software. Unfortunately, however, some school leaders continue to follow the tradition of sending teachers to workshops when it's convenient rather than when it's logical. All too many districts hold training during the summer even though teachers won't have the technology or support materials until January. On the other hand, districts with effective programs tend to use more thoughtful approaches, such as one in Georgia that gives their teachers software two weeks before training events, so they will have time to get a sense of what it will do and how it works.

5. Effective use of technology requires changes in teaching; in turn, the adoption of a new teaching strategy can be a catalyst for technology integration.

While legislators often expect to see a direct correlation between the amount of money spent on computers and improvement in students' scores on standardized achievement tests, we have observed that there are several intervening variables, such as the amount and quality of technology use by the teacher and the student. Effective use of technology often requires changes in the way teachers teach. In many cases, this means that teachers embrace strategies for

Technology: A Partner in Creating Success
(from Pocahontas, Arkansas)

Arkansas media specialist Lin Hatch has seen the positive effects of using technology to tailor instruction to students' needs. One particular young student at Pocahontas High School was a very low achiever, in spite of his efforts. His home life was even more distressing after the death of the one parent with whom he lived. Lin, however, witnessed a difference, as this young boy began to use the Accelerated Reader program and its computer assessment tool, *STAR*. The program analyzes a student's reading level and suggests appropriate, high-interest materials. As his reading improved, so too did his motivation and self-esteem.

student-focused learning, such as tailoring instruction to meet individual students' learning needs, helping students develop problem solving and critical-thinking skills, and providing opportunities for project-based learning. It's the combined effect of effective teaching and pedagogically sound technologies that lead to improvements in learning.

We have found that when professional development and technical assistance start with a particular teaching or learning strategy that the teachers believe will benefit their students, such as cross-curricular thematic units, and then help teachers discover ways technology is a tool that supports the strategy, teachers are usually eager to try both the new instructional strategy and the technology.

Training in a Void
(from Whiteville, North Carolina)

The days at Central Middle School are busy ones, as teachers and students strive to increase student achievement. Technology resources are available and, in the past few years, have continued to increase in quantity and type. Yet, a major difference in the use of technology for teaching and for student projects is just now beginning to occur. Students are developing multimedia reports and searching the Internet; teachers are teaching with computer teaching stations and incorporating web sites in their lesson plans.

What has made the difference? A combination of curriculum-focused training by SEIR◆TEC Intensive Site Coordinator Donna Ashmus and the availability of an instructional technology coordinator funded by a TLCF grant. The combined efforts, under the direction of the district technology director, Patricia Medlin, have provided technology training when teachers have the resources, opportunity, and support needed to apply their new knowledge and skills.

6. Each school needs easy access to professionals with expertise in technology and pedagogy.

Our experiences in the field confirm the notion that teachers need on-site and on-demand technical assistance with both the technology and the integration of technology into teaching and learning. Finding professionals who have expertise in both areas is difficult, and few schools have professionals with both. Many districts hire curriculum specialists and technology specialists and hope they work together. Sometimes they do; sometimes they don't. Resource-poor schools might have a curriculum specialist, but they seldom have access to anyone, in-house or out, with the skills to assess their hardware requirements or troubleshoot problems as they start using new hardware and software.

A Place to Call Home
(from Brownsville, Tennessee)

Three years ago the view from the hallway of East Side Elementary School was quite different: Piles of books, old TVs on carts, broken sofas and chairs, empty boxes. Now, a glance inside is enough to cause a double take! There are two computer stations—soon to be three—with printers and Internet connections, neatly organized shelves of software and teacher materials, a rack of technology magazines, and a center work/meeting table.

Yet, it is not the "stuff" in the staff technology room that causes the double take, but the people engaged in conversation at the table, the users at the computer stations, and the staff member breezing through to pick up a piece of software. The room is being used. Members of the school staff are comfortable using the room and its contents, because this is where part of their training occurs. This is where the school tech team meets to explore and learn new software programs to later teach others, as well as where the vice-principal, Rhonda Thompson, and the tech team discuss next steps to connecting every classroom to the Internet.

What brought about this change? Donna Ashmus, SEIR◆TEC Intensive Site Coordinator, remembers meeting with the school staff to outline technology initiatives necessary for teaching and learning to benefit from technology. One need was a place for staff to learn about and work with technology on an ongoing basis. A workshop or two was not enough, and training without resources and support was a waste of time. The staff technology room was born: a comfortable, user-friendly, ongoing place for just-in-time learning. Teacher-to-teacher training, resources, opportunity, and support must all exist for technology training to bring about change.

7. While many of the barriers to using technology to support learning are the same for all poor communities, some populations have some additional issues.

The SEIR◆TEC consortium tries to address the needs of four constituent groups concerned with the effective use of technology in support of teaching and learning: K–12 educators, adult literacy programs and communities, state departments of education, and college teacher-education programs. As we strive to make resources available to the widest number and variety of programs, we try to enable constituent groups to build on each other's work rather than continuously reinventing the wheel. In particular, adult educators benefit from opportunities to work with and/or learn from experienced, thoughtful K–12 educators. However, the adult literacy learners and settings are different enough from K–12 that the adult educators find that they also need to take these learnings and resources and then rethink and repurpose them to create methods and materials that can be effective in their own instructional settings.

Another group that merits special consideration are the thousands of Spanish-speaking educators and students in Puerto Rico. Throughout much of

the Spanish-speaking world, educational software in that language is relatively abundant. In Puerto Rico, however, it is just beginning to appear. Until recently, technology appeared for many teachers to be destined for the English teachers only, and not for teachers of other subject matter, which is all taught in Spanish.

8. In some schools, infrastructure remains a serious barrier to technology adoption.

It is very difficult to focus on integrating technology to support learning if you cannot overcome basic technological equipment and facilities issues. Schools that serve students in economically disadvantaged areas typically have greater barriers than schools in affluent communities in getting the basics in place. Many of the schools in our region are cases in point. In some instances, the buildings are so old that establishing an infrastructure is very difficult. For example, there are no T1 lines to the Virgin Islands, and some schools do not have access to telephone lines. In other places, the lack of security is a problem. Some of our schools cannot put computers in classrooms unless the windows are secured, which usually means installation of iron bars. And, living in the Southeast, we are occasionally reminded of the impact that the weather has on schools, such as hurricanes that wipe out microwave communication towers or destroy entire school facilities.

Many schools also have access issues, in part because basic electricity is not sufficient; the electrical infrastructure of many schools is unable to handle the additional load required by computer networks. In Puerto Rico, for example, there is a long list of schools that need major upgrades, which require major infrastructure investments.

9. Educators can benefit from tools that help them gauge the progress of technology integration over time.

One of our most recent observations originated not with the intensive sites, but with some technical assistance SEIR◆TEC staff provided to the North Carolina Department of Public Instruction (NCDPI). The Department had asked for help in developing a way of collecting comparable evaluation data from 44 diverse Technology Literacy Challenge Fund (TLCF) grants. Working with DPI staff, we developed an instrument that has been adopted across the state as well as in other states. We have observed that the instrument not only serves its original purpose but also provides a non-threatening framework for gauging a school's or district's progress toward technology implementation. Administrators report that it is a tool that helps educators reflect on where they are and where they need to go with their technology initiatives.

In the belief that helping educators reflect on their progress could potentially accelerate the rate of progress, we adapted the original instrument for use in the intensive sites. Basically, the adaptation involved the identification of five domains of technology integration, principles of good practice for each domain, and indicators of progress for each principle. Staff also compared the domains

and principles with other instruments such as the CEO Forum's STaR Chart and the Milken Exchange's Frameworks for Technology Integration to ensure that ours covered all the bases. We just completed the first round of implementing the instrument in most intensive sites, and so far, the teachers and administrators have reported that in addition to being a useful gauge for progress in general, the instrument is a good basis for discussing specific technology initiatives across the district. It also helps them see the bigger picture of technology integration by showing principles of practice that they have not yet addressed. We will monitor the use of the instrument over the next several months and see whether it does indeed make a difference in program planning and implementation. For more information about the instruments, go to http://www.seirtec.org.

Nine Lessons Learned:

1. Leadership is the key ingredient.

2. If you don't know where you're going, you'll end up someplace else.

3. Technology integration is a *s-l-o-w* process.

4. No matter how many computers are available or how much training teachers have had, there are still substantial numbers who are "talking the talk," but not "walking the walk."

5. Effective use of technology requires changes in teaching; in turn, the adoption of a new teaching strategy can be a catalyst for technology integration.

6. Each school needs easy access to professionals with expertise in technology and pedagogy.

7. While many of the barriers to using technology to support learning are the same for all poor communities, some populations have some additional issues.

8. In some schools, infrastructure remains a serious barrier to technology adoption.

9. Educators can benefit from tools that help them gauge the progress of technology integration over time.

This Guidebook and SEIR◆TEC's Intensive Site Work

Some of the templates and tools included here have been used with the intensive sites as they engaged in various phases of making their technology plans more comprehensive, inclusive, and strategic. But, like most complex systems, schools do not have just one thing happening at a time. In fact, moving something forward in a school is always a difficult task, even in the best of situations when everyone wants to see progress. It is important to realize that many different things are happening at each site, with different people at different times; so, although this guide may appear to be laid out in a logical and linear manner, keep in mind things seldom happen that neatly!

Organization of this Guidebook

Planning into Practice is organized so that it can be used in a variety of ways. Some readers may choose to start at the front and work their way through the book. Others will find that it is possible to skip around, using the resources as they need them. Throughout the text, we included many URLs to online resources and other materials we believe the reader will find useful. Also, since much of this material originated in workshops and other staff development sessions, we have included a set of Microsoft PowerPoint Presentations that summarize and present the key points in each chapter. These are also available online at the SEIR◆TEC web site at http://www.seirtec.org.

The chapters of this book are organized as follows:

- **Chapter 1** provides an understanding of the origins of *Planning into Practice* and lays the groundwork for how to use the materials.

- **Chapter 2** focuses on *Technology Planning* and the processes involved in creating a strategic technology plan. This chapter is also useful for those involved in revising an existing technology plan.

- **Chapter 3** provides strategies and tools for *Integrating Technology into the Curriculum.*

- **Chapter 4** is an overall orientation to *Professional Development* as a process of design, not just a series of workshops. It also addresses technology competencies for teachers and presents ideas for professional development that will help educators acquire those competencies and reach their larger goals.

- **Chapter 5** features *Community Engagement,* one of the key ingredients to a successful school community approach to technology use as a tool to promote learning.

- **Chapter 6** is on *Managing Hardware and Software.* We provide a discussion on various computer configurations for educators, how to make the most of a few computers, methods for evaluating software, and a list of software resources.

- **Chapter 7** presents a model and instruments for evaluating your technology program.

- **Chapter 8** provides resources and recommendations for funding technology initiatives.

- The **Appendix** includes a series of blank forms used in the text that you may reproduce for your own use. We have also included a few additional resources and printouts of the PowerPoint overview presentations that are available online at the SEIR♦TEC web site.

- Early in each chapter, we list the tools provided in that chapter. Readers may find it useful to refer back to these sections to locate a particular resource that they can use in their own environment. In addition, at the end of each chapter we provide a **Putting It All Together** section, which is a dialogue between the editors of *Planning into Practice* and the primary author, Jeff Sun. Jeff offers advice and ideas for troubleshooting in these exchanges. For more advice directly from Jeff and to find additional tools and resources, you can visit his web site at http://www.sun-associates.com.