

Running Head: Every Teacher a Miss Rumphius: Empowering Teachers

Every Teacher a Miss Rumphius: Empowering Teachers

with Effective Professional Development

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In my travels as an educator, researcher, and provider of professional development, I often meet inspirational teachers, like the Miss Rumphius Award winners featured in this book, who are taking risks, exploring new paths, and providing new learning opportunities for their students. I have spent quite a few years observing the process that occurs among school administrators and teachers as they learn more about linking models of effective professional development with elements of a new literacies perspective (Leu, Kinzer, Coiro, & Cammack, 2004) and other effective practices for integrating literacy and Internet technologies.

The purpose of this chapter is to summarize findings from current research, my work with educators, and the journeys of the Miss Rumphius Award winners to answer two questions: First, *What is known about the nature of effective professional development in the area of technology use and integration with literacy instruction?* and second, *What characterizes Miss Rumphius Award winners, and what do their stories reveal about how teachers learn to successfully integrate technology into the curriculum?* To address the first question, I begin by sharing two scenarios from my own experience as a staff developer. Then, I review research into the current state of professional development, briefly examine studies of more effective models, and outline four lessons I have learned while working closely with teachers in a range of school settings. To answer the second question, I explore commonalties among the Miss Rumphius Award winners featured in this book and provide insight into how their stories can motivate other educators to bravely face the challenges associated with learning on the Internet. Although each teacher's journey is uniquely different, I conclude the chapter by highlighting seven lessons we, as educators, can learn from these award winning stories about teaching and learning with information and communication technologies (ICT).

As I begin, I invite you to join me in a journey back to my own teaching about four years ago that was a turning point in my development as a literacy and technology integration specialist. I share this with you as an introduction to the lessons to be learned as each of us (including me) seeks to develop effective ways of learning and teaching with technology in our classrooms. As you read, imagine yourself as one of the teachers in the audience.

It is the day before the school year begins at Smith Elementary School, and the faculty of 35 teachers and 5 teaching assistants are gathered in the auditorium for a day of inservice.

“Good morning teachers,” the principal announces from the microphone, breaking up the small clusters of conversation spread around the room. “Let’s everyone find a seat so we can begin today’s program.”

As the invited presenter, I offer a friendly smile and wait as teachers begin to find their seats. A small group of excited teachers take their seats in the front row and return my smile. The majority of the teachers meander to the middle rows, and I hear three teachers whispering to see if anyone knows the topic of the presentation. And in the back row, I spot two teachers setting up shop with folders, scissors, and a basket of some sort. Shortly after, I realize they have brought along two long strips of laminated bulletin board shapes that need to be cut out before school begins the next day. Every teacher knows the feeling of preparing your classroom for the new year each fall, so I am not really that surprised that they already have begun cutting as I make my way up to the microphone to begin my presentation.

The principal announces, “The topic of our two-hour session this morning will be about best practices in integrating the Internet into your literacy curriculum.” Low mumbles and groans of surprise rise from the audience, as the principal continues. “Now, I know originally the primary teachers were scheduled for a session about guided reading, and grades 4 and 5 were

going to meet in their grade-level teams, but we've moved the grade-specific sessions to the afternoon, after deciding technology integration is an important issue for all of us. Besides, this way, you'll all be prepared when we finally are able to get all your classrooms wired, probably sometime this spring." The principal nods a bit apologetically to me, realizing that not all of the teachers seem quite as receptive to my presentation as he was hoping. He turns back to his staff and proudly announces, "So without further ado, please welcome Mrs. Coiro."

With that, I take the stage, making a mental note of the sense of disengagement permeating the auditorium and the fact that the principal, their leader, is leaving the room for more important places. I cannot help but think that this will be yet another traditional stand-up presentation doomed to inspire little more than frustration, defensiveness, and a sense of being overwhelmed by a large group presentation that moves too quickly for some teachers, too slowly for others, and often, too far from reality for most. I find myself wondering why some schools offer no alternatives to this format of professional development when research shows that fewer than 10% of teachers implement new ideas learned in traditional workshop settings (Joyce & Showers, 1994).

Despite signs of interest from a few teachers, I pondered how things might be different if teachers were asked to voice their own agendas for professional development ideas around technology integration? I wondered what would happen if I had more time in small groups to listen to teachers' concerns, validate their attempts to learn more and remind them that effective change with new technologies is a slow and thoughtful process requiring long-term commitment and support from the entire school community. As my presentation comes to a close, I decide to learn more about the elements of effective professional development models and how to employ these in ways that empower teachers, improve instructional practices, and increase student

achievement.

Now, four years later, things have changed quite a bit in terms of my own understanding about professional development and in terms of the changes that have taken place in schools, with teachers, and with technology. Ironically, I find myself back at Smith Elementary School, this time virtually meeting over the Internet with a group of four first-grade teachers who have volunteered to be literacy leaders in their school. These teachers meet every two weeks for half-hour study group sessions to discuss an agenda that they determine. This week, they have completed the first stage of a collaborative Internet project entitled “That’s What Happens When It’s Spring” (see www.mrsmcgowan.com/spring/index.html). Marci McGowan, one of the Miss Rumphius Award winners featured in this book, coordinates this online project. For her project, she first invites classes of primary school students to read a book of their choice about spring. Then, she invites all participating classes to draw and write about the unique signs of spring that occur in their different school communities and publish their work online at her website.

As the teachers gather for their study group meeting, they are eager to reflect on the successes and challenges of implementing Marci's spring project so far. They invited the principal to share their progress, the library media specialist to help develop an action plan of next steps, and me to support their work virtually using iSight video technology (see more at www.apple.com/isight). As a result, I can see and hear their entire meeting, and they can see and hear me via the Internet on the computer screen.

In contrast to my presentation experience four years earlier, the teachers are now actively engaged in their own learning, in full control of their study group's agenda, and excited about sharing their teaching progress. The principal’s presence provides an important layer of support and vision beyond the collegiality that teachers share with one another. The library media

specialist is excited to be developing lessons collaboratively in a way that ties her library media curriculum to the first-grade literacy curriculum. And I, now an ongoing, equal participant rather than an outsider presenting unrelated information, am able to hear the teachers' immediate needs in a "just-in-time" fashion. As a result, after hearing their discussion, I point them to an Internet article entitled "Internet Project: Preparing Students for New Literacies in a Global Village" (Leu, 2001) appearing in the web-based journal *Reading Online* (www.readingonline.org). The teachers eagerly locate and print out a copy from the Internet and thank me for addressing their immediate questions. A few days later, one of the teachers emails me to thank me for the article, explaining how it reinforced what they recently learned and provided ideas for next steps. I smile and proudly take a moment to appreciate the significance of her comments. Clearly, the nature of literacy, instruction, and professional development is transformed by new information and communication technologies (ICTs).

What does research reveal about the nature of effective professional development in the area of technology use and integration with literacy instruction?

Scenarios like the ones just described prompts the need to change how we think about literacy, learning, and professional development. The nature of literacy is rapidly changing as new technologies emerge (diSessa, 2000; Dresang & McClelland, 1999; Leu et al., 2004. Reinking, McKenna, Labbo, & Kieffer, 1998), and recent literature addresses the need for changes in the way educators think about literacy as influenced by technology. For example, in its literacy and technology position statement, the International Reading Association (2001) suggests "traditional definitions of reading, writing, and viewing, and traditional definitions of best practice instruction—derived from a long tradition of book and other print media—will be

insufficient.” Similarly, the recent report of the RAND Reading Study Group argues that “accessing the Internet makes large demands on individuals’ literacy skills; in some cases, this new technology requires readers to have novel literacy skills, and little is known about how to analyze or teach those skills” (RAND Reading Study Group, 2002, p. 4).

These rapid changes in literacy demand new ways of thinking about the nature of classroom instruction and professional development (Coiro, 2003a; Leu et al., 2004). Federal legislation (U.S. Department of Education, 2001) currently mandates that teachers ground their instruction in current research-based practices of literacy and technology integration. However, evidence suggests that teachers receive very little support in the way of research-based instructional strategies or opportunities for quality professional development (President’s Committee of Advisors on Science and Technology, 1997; Trotter, 1999).

Pianfetti (2001) describes a “lack of digital literacy among educators . . . [that signals] . . . a change in the professional development of pre-service and in-service teachers” (p. 255). Studies show that teachers continue to use technology to emphasize game playing and drill-and-practice activities as opposed to using technology as part of more meaningful and engaging learning opportunities (Carey & Worthington, 1997; Solomon, 2002). In addition, several documents outline the lack of quality professional development programs for teachers exploring ways of integrating technology into their instruction (Lemke & Coughlin, 1998; Task Force on Technology and Teacher Education, 1997; National Center for Education Statistics, 1999). If educators are to keep up with the advances in technology and the resulting changes in literacy, it is imperative that schools adopt new practices for professional development.

Recent research suggests that the most successful professional development models engage and empower teachers to have a stronger voice in directing their own learning

(Educational Research Service, 1998; Lyon & Pinell, 2001; Robb, 2000). Effective models of professional development in the area of literacy and technology integration (a) recognize a developmental process through which teachers use technology; (b) validate the different dispositions that teachers bring to their use of technology; (c) and employ job-embedded study groups as a means of empowering teachers to take a more active role in their own learning. Below, I briefly explore each of these three elements in more detail.

First, Apple Classrooms of Tomorrow (1995) project conducted a series of research studies to study the impact of technology on student learning. Their data suggested that as teachers integrated technology into their curriculum, they tended to progress through a developmental continuum of abilities consisting of four stages: (1) *adoption*, or using technology to support traditional instruction; (2) *adaptation*, or integrating technology into existing classroom activities; (3) *appropriation*, or developing new approaches to teaching that take advantage of technology; and (4) *innovation*, or discovering entirely new uses for technology tools. A teacher's thoughtful movement through these four stages, which more recently has been recognized as an "evolution of thought and practice" (Apple Education, 2004) occurs over the course of several years rather than after a few workshop sessions. More importantly, "this evolution refers not to teachers' progression through a set of technology skills, but rather describes their way of thinking and acting when it comes to integrating technology into their teaching" (Apple Education, 2004). The most effective designers of professional development recognize these developmental stages of thinking in their programs. They guide each teacher's realistic assessment of where her she currently sits on the developmental continuum and where she should be headed next in her thinking about technology use for teaching and learning.

Other researchers describe similar developmental continuums through which teachers move as they explore new literacies with technology in their classroom. Gilbert Valdez and his colleagues at the North Central Regional Educational Laboratories (NCREL, 2000) highlight three distinct phases in the evolution of the uses and expectations for technology integration: (1) print automation, wherein students and teachers use technology that automates print based practices with some increase in active hands-on learning; (2) expansion of learning opportunities, wherein students use technology in small groups to produce and share work products; and (3) data-driven virtual learning, wherein a shift in classroom dynamics results from a well-designed systemic integration of learner-centered approaches to education.

In a third example, the Texas Center for Educational Technology (1999) has collected and adapted several instruments designed to help characterize the phases of teachers' technology use and adoption into the curriculum. This online collection includes instruments that measure levels of proficiency with various digital technologies, the degree of technology integration into their classroom curriculum, and the attitudinal changes of teachers as they use technology over time.

The notion of developmental continuums such as these validates the reality that no teacher becomes an innovative technology user overnight, and in fact, the process often takes up to five years or more. Moreover, individual teachers may enter into the continuum at different stages and most often move through these stages at different paces, depending on their prior experience with technology and personal beliefs about technology's role in the classroom. Thus, these continuums provide a context for staff developers as they assess the needs of individual teachers within a school faculty and then design programs that more appropriately address each teacher's unique learning needs.

A second area of research proposes, that in addition to recognizing that teachers progress slowly through developmental phases of technology use, effective facilitators also recognize the important role a teacher's belief system plays on how one receives recommendations about how technology should be used in the classroom. Work in this area suggests the presence of distinct groups of teachers with different purposes and different beliefs about the use of technology in their classrooms (e.g., Balajthy, 2000; Honey & Moeller, 1990; Labbo & Reinking, 1999). Labbo & Reinking (1999), for example, argue that educators perceive the potentials of technology use through at least five different lenses, or goals, that influence a teacher's interpretations of a certain technology's value and worth in his/her curriculum. Their framework for integrating technology with literacy moves from goals that are more traditional (e.g., new digital technologies used to enhance the goals of conventional literacy instruction) to goals that "place technology in a more active, transforming role" (e.g., new technologies used to empower students) (Labbo & Reinking, 1999, p. 481). Different teachers possess different goals, and in turn, these goals influence how certain digital technologies may or may not be used in their classrooms.

Similarly, Christenson & Knezak (2001) developed a Technology and Reading Inventory to assess how differences in teaching style, reading instruction preference, and technology beliefs impact the overall effectiveness of using technology to develop reading, writing, and thinking skills. Thus, the presence of different beliefs or multiple lenses within any group of educators is a reminder that teachers bring to their professional development opportunities diverse beliefs about classroom pedagogy and the value of technology for learning. Consequently, the "one-size-fits-all [professional development] experience seldom addresses teachers' specific needs or skill levels, resulting in uneven or infrequent implementation that rarely leads to instructional change"

(Gora & Hinson, 2003, p. 36). A third area of research of effective models of professional development evaluates the utility and success of various alternative formats to large-group training presentations. Several examples in the literature illustrate the potential of job-embedded focused study groups, otherwise known as peer mentors or communities of learners, for empowering teachers and facilitating change in the quality of professional development (e.g., Lyon & Pinnell, 2001; McKenzie, 2001). Generally, faculty study groups serve many functions or purposes most often that occur simultaneously. Murphy & Lick (2001) outline purposes that include:

- (1) developing a deeper understanding of academic content;
- (2) supporting the implementation of curricular and instructional initiatives;
- (3) integrating and giving coherence to a school's instructional programs and practice;
- (4) targeting a schoolwide instructional need;
- (5) studying the research on teaching and learning;
- (6) monitoring the impact or effects of instructional initiatives on students; and
- (7) providing a time when teachers can examine student work together (p. 18).

In her book, *Redefining Staff Development*, Laura Robb (2000) constructed a workshop model for job-embedded professional study in which facilitators “*invite* teachers to learn” (p. 25) rather than force teachers to change. Likewise, facilitators build topics and timelines directly from teachers' own questions, needs, and concerns rather than dictating to teachers a particular agenda. This more engaging process serves to build internal capacity through peer mentoring, self-reflection, teacher decision making, and collaborative networking.

Customized variations of the study group model have proven successful in professional

development environments focusing on both literacy and technology integration. The Center for Improvement of Early Reading Achievement, for example, reports the opportunity for teachers to engage in ongoing inquiry and action research regarding how to help students meet standards in study groups or professional learning communities is one of several effective school practices associated with high student performance in reading (Taylor, Pearson, Clark, & Walpole, 1999).

Lyon & Pinell (2001) outline a version of study groups for literacy education that is grounded in principles of constructivist-based teaching and “system thinking”. They provide explicit procedures and strategies for improving instruction and student literacy achievement. In their model, study group facilitators guide faculty through a professional development program framed in ten components. Facilitators (1) assess the context for teaching and learning; (2) provide the basics of a new approach with concrete examples of organization and routines; (3) demonstrate the procedures with explicit examples; (4) establish a clear understanding of the rationales of the new approach; (5) engage the teachers in active learning and exploration of new techniques; (6) invite teachers to try out new techniques and share their analyses of process and results; (7) establish routines and procedures for pursuing a plan of action; (8) coach for shifts in teacher and student behavior; (9) coach to support teacher reflection, analysis and continual refinement of their teaching; and (10) extend learning through small group conversations that connect theory with practice and build networks among teachers. (Lyon & Pinell, 2001, p. 14). Throughout this process, teachers begin to take ownership in such a design "because it includes them and gives them a chance to grow, change, and contribute...in ways that are intimately related to their own professional goals, visions and needs." (p. 183).

The study group has proven particularly effective in supporting technology integration among teachers. Garry and Graham's (2004) study group model, for example, is built around a

support system that progresses naturally through four phases. First, facilitators introduce teachers to a new approach for using technology. Then they guide teachers through a thoughtful analysis of how instruction may work in particular contexts. Third, teachers participate in a facilitator-supported classroom implementation lesson. Finally, teachers meet back in the study group to reflect individually and collaboratively on the lesson's successes and challenges. As study groups evolve, "they provide an avenue for addressing multiple classroom and school issues in a context of collegiality . . . [while] . . . emphasizing the incremental and collaborative nature of effective professional growth that is vitally important in learning new approaches towards teaching with technology" (p. 2–3).

The study group model has also been used effectively for professional development in other programs around the United States. In Louisiana, administrators and technology facilitators successfully used the Technology Study Group Professional Development Model to increase teachers' comfort levels for using technology and to promote positive change in instructional practice (Gora & Hinson, 2003). In New Mexico, 419 teachers involved in weekend workshops with tech-savvy classroom teachers serving as "peer technology experts" demonstrated significant increases in confidence, technology use, collegial behavior and a willingness to lead others in the change process (Martin, Hupert, Gonzales, & Admon, 2003). Finally, in Missouri, Branigan (2002) studied the impact of an inquiry-based peer coaching professional development program called Enhancing Missouri's Instructional Networked Teaching Strategies (eMINTS) on student learning outcomes. Results showed that a larger percentage of students in eMINTS classrooms scored higher on standardized achievement tests as compared with other students who took the tests but did not have teachers who were trained in eMINTS. Indeed, effective models of professional development for integrating technology directly can lead to increases in

effective teacher practices as well as increases in student academic achievement.

What have I learned from teachers about effective professional development for technology integration?

In this next section, I share four important lessons I have learned from teachers that continue to influence my current beliefs about effective professional development for technology integration. In doing so, I hope to validate the concerns of other teachers who may be reading this book. At the same time, I invite administrators, researchers, and public policymakers to consider these four issues when framing a vision for change.

First, I have learned that *professional development opportunities are most effective when teachers are empowered to determine their own needs for professional study with regard to literacy and technology integration*. A recent review of the research in this area reports that “involving teachers in planning the goals of the technology program will help to decrease teacher resistance, and increase the staff’s sense of ownership and commitment” (Educational Research Service, 1998, p. 2). My experience confirms that when given an opportunity, most teachers rise to the challenge of assessing their needs and clarifying their personal learning agendas within the broader context of whole-faculty staff development offerings. Likewise, teachers are motivated by the opportunity to pose questions, voice their concerns and see real connections to how their learning to use technology may impact student achievement.

That is not to say, however, that administrators do not play a vital role in fostering the vision and leadership that prompts teachers to use technology effectively in their classrooms. Part of my role as a facilitator of professional development provides me opportunities to work with administrators around the state of Connecticut (see more at Coiro & Leu, 2003). In these

sessions, my colleagues and I work to support administrators as they develop and articulate a school-based educational vision for the future. Engaged in large and small group activities, these administrators reflect on the challenges associated with a broader vision of education that includes the new literacies of the Internet. They brainstorm alternative formats for professional development. They struggle to balance issues of access, accountability, student safety, classroom instruction, and new ways of measuring learning with and from the Internet. Most importantly, they seek to clarify the changes that are taking place in their own roles as well as in the roles of teachers and students as a result of emerging technologies in schools. Administrators are to be commended for their close attention to issues that will impact children's literacy futures in a global information economy. Administrative leadership in developing a common school vision that empowers teachers while addressing district concerns are the first steps toward promoting effective instructional change with technology in classrooms.

A second lesson I learned is to *listen carefully to a teacher's needs and provide resources that address those needs from a realistic classroom perspective*. One area in which teachers feel especially ill prepared, particularly amid the current pressures from federal mandates such as the No Child Left Behind Act (U.S. Department of Education, 2001), is in the quest for strategies for selecting and using educational software and Internet technologies for classroom instruction. Teachers are frustrated with software programs that are packaged and described in ways that look impressive but are marketed to the educational community "regardless of its real educational value in improving students' reading performance" (Snow, Burns, & Griffin, 1998, p. 265). Teachers are frustrated with the lack of common standards for evaluating software that meets students' diverse literacy learning needs and confused by the changing and repackaging of old titles to look like new ones. Teachers are also disappointed in the shortage of unbiased

research in scholarly journals that deals specifically with the educational benefits of using particular software programs or the Internet in their classroom.

Teachers crave more support, for example, in the form of guided exploration of children's software. They welcome facilitators who listen to their needs and then preview relevant literacy software titles according to their instructional purpose. They invite ideas in how to link each program to authentic literacy practices and time to explore these programs with their students. Similarly, classroom teachers feel overwhelmed and unprepared to develop lessons and strategies for teaching new critical literacies that reading for information on the Internet demands (see Coiro, 2003b). They appreciate guided overviews of informative websites such as the Media Awareness Network (www.media-awareness.ca/), the Cybersmart Curriculum (www.cybersmartcurriculum.org/), and Evaluating Internet Information from Virginia Tech (www.lib.vt.edu/help/instruct/evaluate/evaluating.html) to support their exploration of these new literacies. I have found teachers are equally motivated when they are encouraged to develop classroom lessons in collaboration with the library media specialist at their schools. This experience fosters collegiality, restores confidence in the classroom teachers' ability to design effective technology lessons, and encourages all educators to think more carefully about which critical literacy skills are most important for students in their unique classroom situations.

A third lesson I learned is that *classroom teachers are desperately seeking research-based effective practices that support integrating technology into instruction and assessment*. I have found, for instance, that many teachers are interested in the trend toward more learner-centered approaches to using technology (e.g., involving authentic inquiry-based questions for meaning generated by student interest), as some have long recommended (e.g., Lemke & Coughlin, 1998; Marzano, 1992). Unfortunately, there is little research that investigates the

effectiveness of learner-centered Internet inquiry projects or suggests alternative ways to measure learning with Internet technologies. As a result, teachers are left on their own to explore these new approaches with a diverse range of students while still being held accountable by more traditional curricula and standardized assessments.

The National Reading Panel's (2000) Subcommittee on Computer Technology and Reading Instruction reviewed experimental research from 1980-1996 to investigate which types of technologies, if any, increased student reading achievement among students in grades K-12. They concluded that there were too few studies to make any specific instructional recommendations. In light of federal mandates, I found these disappointing conclusions had a significant impact on a school's willingness to support teacher's use of technology in the classroom. Teachers wondered why they should bother if there is no evidence that using technology makes a difference. They wondered about the dearth of studies focusing on Internet instruction and reading achievement. Finally, they wondered how they should be using technology with diverse student populations not included in the panel's findings, such as students with learning disabilities or those that speak English as a second language.

This led me to take a closer look at the research in this area. I worked with several colleagues to extend the results of the National Reading Panel's (NRP) Technology Subcommittee Report (see Coiro et al, 2003) and found more optimistic results to share with teachers. We located more than twice as many studies that met the original NRP criteria, and nearly ten times as many studies when we extended the criteria to include studies with diverse populations. In contrast to the NRP Subcommittee, we found that there is sufficient research to begin to draw conclusions about the use of technology to support literacy instruction in school classrooms.

An analysis of eighty studies that investigated reading comprehension issues, for example, allowed us to identify two important principles of effective practice. First, many different computer technologies appear to contain the potential for supporting the development of reading comprehension. These include Integrated Learning Systems (ILS), Computer Assisted Instruction (CAI), word prediction software, speech supported texts, multiply mediated texts, and Internet technologies. However, the potential of any technology to support the development of reading comprehension may only be realized when teachers make appropriate decisions about its use. Educators using technology to support reading comprehension development must consider: (a) the design of the technology that is used; (b) the ways in which teachers and students collaborate and interact with each other while using technology; (c) the nature of individual differences among learners; and (d) the nature of how comprehension outcomes are defined and assessed. These findings clearly suggest effective professional development around each of these issues is crucial to the successful use of technology for literacy and learning in the classroom.

Teachers are also concerned about the lack of research-based practices that include newly emerging technologies embedded within the Internet. As other educators, such as those featured in this book, explore Internet projects in their classrooms, I urge more literacy researchers to pursue new collaborative partnerships with these teachers (see, for example, Eagleton, Guinnee & Langlais, 2003) and to provide leadership in documenting teachers' use of web-based learning projects and their impact on student learning. Only then can we begin to expect teachers to regularly and confidently integrate the Internet into their classroom literacy curriculum while still being held accountable for more traditional gains in student achievement.

Finally, experience has taught me that *teachers learn best when they are provided with models for linking technology with purposeful reading and writing activities*. With pressures to

meet local and national curriculum standards, teachers seek realistic models of technology-integrated reading and writing lessons. They welcome appropriate models of guided Internet explorations (e.g., online treasure hunts and webquests) and more open-ended inquiry projects during which students pursue answers to their own questions individually or in small groups.

Teachers who share examples of what students can create with electronic tools inspire other educators to network with colleagues and exchange ideas about how their students use computers for literacy learning. The Miss Rumphius Award winners featured in this book provide exemplary models of learner-centered classrooms, inquiry projects, and performance-based assessments of learning with technology in very practical terms. These award winners depict the essence of teachers who make the world a more beautiful place, like the title character in Barbara Cooney's (1982) book. Their award-winning journeys reveal important skills that teachers need, the processes within which learning with technology takes place, and the power of networking with others as each of us ventures into new ways of thinking about learning with the Internet.

What characterizes Miss Rumphius Award winners, and what do their stories reveal about how teachers learn to successfully integrate technology into the curriculum?

Although the Miss Rumphius Award-winning teachers featured in this book each began their journeys in different places and for different reasons, commonalities among their stories reveal seven lessons about how innovative teachers skillfully integrate technology into their curriculum.

1. Start out small and move through stages.
2. Take a few risks along the way.

3. Take a proactive approach to learning.
4. Encourage your students to share their expertise.
5. Never underestimate the power of collaboration.
6. Seek authentic learning opportunities.
7. Be prepared for change.

Start Out Small and Move Through Stages

Miss Rumphius Award winners began their journeys with a mere inkling of an idea, never quite imagining that their projects would grow to have such an impact on others. The natural cycle of the seasons, for example, inspired Marci McGowan's *That's What Happens When It's Spring* project or Susan Silverman's *Kidspired Frosty Readers*, while a desire to involve students in community service motivated Mark Ahlness's *Earth Day* project and Gino Sangiuliano's *Books on Tape*. Still others, such as Dale Hubert's *Flat Stanley Project* and Mary Kreul's *Tales of a Fourth Grade Nothing* project, simply sought to build on student's excitement about favorite characters in a book. In turn, students eagerly responded to authentic tasks that connected to their own world, and teachers experienced the power of networking with colleagues outside the four walls of their classrooms. It was then that the Miss Rumphius Award-winning teachers' collaborative journeys with technology integration truly began.

It also is important to note that, in most cases, these award winners began their adventures with little or no prior experience with technology in the classroom. Initially, Gino Sangiuliano struggled to fit computers into his curriculum, Dale Hubert admitted to taking a rather low-tech approach to integration, and Marci McGowan tentatively ventured onto the Internet to locate a resource or two to enrich her traditional reading curriculum. Each of their

journeys began at the earlier, albeit different, phases of the developmental continuum of technology integration discussed previously in this chapter. For many, it was only after a year or more that these teachers began to see changes in the way technology was transforming their teaching and their students' learning. Only after several years have these Miss Rumphius Award winners reached the level of "Innovation" with technology use, the last phase in Apple's (2004) "Evolution of Thought and Practice." In this phase, teachers view technology as a different way to teach and learn with more emphasis on project-based learning and student-constructed work that becomes the center of entirely new web-based learning environments. The evolution of classroom websites, weblogs, digital video, and online professional development opportunities as a result of the Miss Rumphius Award-winners' projects clearly illustrates how the Internet enhances teaching and learning. But none of these seemingly grandiose endeavors would have sprouted had it not been for the initial seed of one small idea.

Take a Few Risks Along the Way

These award winners were willing to take risks and venture into unknown places. Dale Hubert, despite his initial impatience with computers, enrolled in his first computer class after his principal challenged him to do so. Marci McGowan overcame her inexperience of navigating through websites by inviting her students to learn alongside her, not really worrying if she and her students made some mistakes along the way. Cathy Chamberlain took a leap of faith by bravely showcasing her first attempts to create a website for her colleagues that appropriately suited their needs, and Susan Silverman initiated her early web publishing projects without even knowing how to upload an image. Yet, in all these cases, these teachers openly acknowledged their lack of experience and were comfortable letting their students or other teachers see they did

not know all the answers. Taking risks typically is a part of any new learning experience, and technology integration is no exception.

Take a Proactive Approach to Learning

All of the Miss Rumphius Award winners expressed a deep passion for learning. They actively sought out opportunities to explore new ways of teaching and learning with technology and often resorted to teaching themselves new skills and strategies. Several of these teachers taught themselves hypertext markup language (HTML) coding to make their own classroom webpages, and they continue to develop their expertise in Web design with new literacies such as photo editing and graphic design. Mark Ahlness, initially motivated by the unusually high reading levels of informational text on the Internet, began designing more age-appropriate webpages while also devising useful strategies to help his elementary students understand the importance of navigational efficiency on the Internet. Similarly, Tim Lauer noticed the powerful publishing opportunities inspired by classroom webpages and dedicated much of his time keeping up with new technologies that helped to catalog student work. These teachers remind us there will always be new things to learn and that we often learn best by jumping in and trying things out. For these Miss Rumphius award winners, professional development opportunities were most effective when grounded in their curriculum-specific needs on a need-to-know basis.

Encourage Your Students to Share Their Expertise

Teachers should not be intimidated by what students know about new literacies. Many young students understand more about computers and the Internet than most adults, and students are eager to share their knowledge with others. In this book, for example, Mary Kreul takes advantage of her students' knowledge by first teaching two students a certain strategy and then having them teach others in her class. In this way, she provides authentic opportunities for her

students to join her as literacy leaders and technology experts while creating time for her to work with other students in her classroom. Susan Silverman recognizes the value of student contributions as well. She regularly invites students into the process of creating rubrics for evaluating webpages as part of their Internet learning experience together. Similarly, Cathy Chamberlain respects the contributions that teachers bring to each of her workshops and she reassures her colleagues that each knows something unique and useful to others. Because technology changes so quickly, no one can know everything. The stories in this book taught me that students bring important new literacies from their experiences out of school and are very willing to share with others when given a little space to shine during the school day.

Never Underestimate the Power of Collaboration

These award-winning teachers are willing to collaborate and share ideas. They freely share their time, resources, and expertise without expecting any money in return. Many are quick to mention how the nature of the Internet creates opportunities for less experienced teachers to initially build their lessons from models shared by other colleagues they have met online. Over time, these newer teachers become more confident and venture in new directions, spreading new transformations of literacy learning opportunities. On the Internet, what initially seems like an overwhelming task to accomplish with just one person becomes much more manageable as teachers work together to compile thematic resources or manage the online publishing of student projects.

Susan Silverman's Webfolio is an impressive model of the multiplicative effects of such collaboration. Silverman first works with another teacher in her school to design an Internet project. Then, she invites other teachers from different schools to join her project. Word quickly travels through online communities, and soon more than 25 teachers have signed up. Each of

these 25 teachers has at least 20 students, who each begin creatively responding to a task, and before you know it, more than 300 individuals are working together to build a showcase of their work as teachers and learners. After the project is completed, teachers from all over the world visit the project archive. These archives inspire a few teachers in another school to design a similar project—and the cycle goes on and on. These award winners teach us the Internet provides a huge network of support, inspiration, and validation for those teachers who may be just beginning to develop Internet projects with students. For teachers who are more experienced with the process, the Internet provides teachers and students new communities of learning to explore, share, and construct creative uses of technology.

Seek Authentic Learning Opportunities

Gone are the days of students writing letters only for a teacher's eyes, and in its place are opportunities for students to write for authentic purposes and audiences from all over the world. Many teachers recognize the advantages of making available authentic Internet communication tasks for students. Students of these Miss Rumphius award winners have opportunities to share their work and communicate with family members who live far away. They also learn to consider new ways of writing for a more diverse audience. Gino Sangiuliano valued the genuine ways in which technology integrates curricular topics with real-world applications. Tim Lauer taught his students how impromptu email exchanges with science experts can improve their own knowledge and research skills. Mark Ahlness used the Internet with his students learning English as a second language to practice informal email exchanges with same-age peers from their native country, while his native English-speaking students use similar Internet experiences to discover new tidbits of information from another culture. These award-winning teachers work authentic communication opportunities into student Internet projects as a way to motivate high-quality

student work and students' connection to the real world. These teachers remind us that the most successful projects enable students to interact with other students and adults in meaningful ways that prepare them for real-life interactions outside of school.

Be Prepared for Change

The Miss Rumphius Award winners are willing to accept the rapid and inevitable change that accompanies technology use in the classroom for literacy learning. New technologies are constantly transforming the nature of literacy and classroom instruction in ways that we cannot even imagine. Many of the Miss Rumphius Award winners willingly redesign their literacy curriculum as they encounter new types of Internet technologies such as digital photography, weblogs, automated Internet forms, and video microscopes. Each of the Miss Rumphius Award winners welcomes change as an opportunity to model for students or their colleagues how to adapt flexibly to the new literacies that continue to emerge in our daily lives. These teachers are eager to break new ground and share their expertise with other educators who explore web-based learning with students.

So Where Do We Go From Here?

This chapter is about grounding our understanding of effective professional development in perspectives gleaned from research, practice, and the stories in this book. Research suggests that effective professional development for technology integration is ongoing, job-embedded, interactive, and reflective. Moreover, teachers learn best when provided with inspiring models for linking technology with purposeful reading and writing. Experience shows that more and more schools are moving toward using small study group sessions (like the one described at the beginning of this chapter to discuss practical instructional models) and research-based strategies for evaluating the quality and utility of software and Internet technologies.

As each of us seeks to keep up with the new literacies and new technologies that continue to emerge, all of the Miss Rumphius Award winners inspire us to start small, take a few risks, establish a network of support, and eagerly welcome change as a part of the learning process. Their journeys make clear that it is not a certain technology or the Internet by itself that makes a difference. Instead, it is the passion and insight of educators like you that ultimately will have the biggest impact on students' lives. Take hold of the challenges that new technologies present, and be confident in your thinking. Regardless of your role as classroom teacher, technology specialist, administrator, or provider of professional development, one small idea can bloom quickly, and you may someday be a Miss Rumphius Award winner—transforming literacy and learning and spreading the seeds of exemplary instruction for students.

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