Preface

PREPARING STUDENTS FOR THE 21ST CENTURY

Today, we are witness to an information explosion of unprecedented proportions. The volumes of new information gathered every hour dwarfs even the most outrageous predictions from only 10 years ago. The February 27, 2010, *Economist* special report on the "data deluge" provides some startling examples. "Everywhere you look," the article reported, "the quantity of information in the world is soaring. According to one estimate, mankind created 150 exabytes (billion gigabytes or two to the 60th power bytes) of data in 2005. This year, it will create 1,200 exabytes" (Cukier, 2010, p. 11). Mind-bending evidence is offered from all corners of the human experience. For instance, consider the following:

- Facebook is home to 40 billion photos.
- Wal-Mart processes one million customer transactions every hour, entering data into a 2.5 petabyte (two to the 50th power) database, which is 167 times larger than all the books in the Library of Congress.
- In 2000, the Sloan Digital Sky Survey collected in a few weeks more data than had been collected previously in human history. By 2016, the next generation telescope will collect that much information every five days.

At the present rate, the amount of information available increases tenfold every five years. As the article in the *Economist* (Cukier, 2010) concludes, this surge of information " . . . is already starting to transform business, government, science and everyday life." (p. 11)

The extraordinary production of information coupled with unprecedented information access for most makes it impossible to conclude that enough content can be taught in schools to make a sizable dent in available knowledge. Direct content instruction will constitute only a small fraction of any content-area information base and represent only a fraction of the information students will need to know throughout their lifetime.

As more and more societies wrestle with the transition to and the fallout from a global economy, the central question educators must ask is "How can we best prepare students for life in the 21st century?" While learning content is essential, understanding learning processes is equally important. It is imperative that students acquire the skills for learning, take responsibility for their own learning, and recognize that learning is only fully accomplished when their knowledge level is sufficient to foster critical thought and informed actions (Meredith, 2002). Students must be prepared to successfully engage with and manipulate new information

while seeking, through deliberate inquiry, answers to their own questions. Their own independence will rely on their capacity to consider information and ideas irrespective of others and act in accordance with their own informed judgments, making information not only useful but life sustaining. Their prosperity and their contribution to society will depend on their ability to examine new ideas from multiple perspectives and make judgments about the veracity and value of various ideas based on their individual and community needs and purposes. In short, if we are to prepare our students to manage and benefit from the incredibly exciting flow of information and ideas that populate their universe and, at the same time, protect them from the harm that can come from being unable to sort information into the useful or the useless—or as the *Economist* suggests, "pluck the diamonds from the waste"—then they will need experiences interacting and managing complex ideas and information. Responding to these 21st-century demands requires introducing into classrooms alternative constructs for teaching and learning. This text offers an alternative instructional approach founded upon what teachers already do well while leading students through the kinds of learning experiences that prepare them to cope with 21st-century demands.

The instructional model offered here is offered knowing, in fact counting on, practicing teachers and other participants being a protective and careful lot. Each year, teachers are challenged by a disparate cohort of students who inhabit their classrooms and who are entrusted to their care. Each class presents its own set of demands, needs, eccentricities, and each must travel from an array of starting points toward a somewhat uniform destination. The tasks and skills required to get everyone from here to there are numerous and complex. We are distant from the time when we thought the old-fashioned cattle drive model might accomplish the job. Today, when teachers gain skills and employ strategies that successfully guide students toward some of the myriad goals set for them, they are not likely to easily discard them. Thoughtful instructors engage a dynamic instructional model intended to move students seamlessly through a series of strategies to achieve a particular learning outcome. Often, there are strategies that work well but that may coexist with others that are less successful. How do we separate those successful practices from those others we know serve our students less well? How do we add new skills and strategies to an already existing instructional construct so we can take advantage of new understandings about teaching and learning without abandoning what is already working? How do we know why a strategy works in one situation but is not right in another? Upon what basis does a teacher select an instructional approach for the content at any given point in the learning process? Knowing when, why, and how to employ a particular strategy is critical to effective instruction and student learning but is not always easily determined. This text will disclose a model for instructional decision making that informs teachers about where students are in their learning process. Equipped with this information and a model for understanding how, when, and why specific instructional strategies work, teachers are able to successfully guide learners through the learning process to reach achievement goals.

SYSTEMATIC AND SUPPORTIVE CHANGE EXPERIENCE

Accommodating to a new model involves change, and sometimes change is uncomfortable. This text is structured to lead readers through a change experience that is

systematic and supportive. It is organized so participants may work independently, in book groups or in larger district professional development settings.

Responding to new demands and new realities requires changes not only in how we teach but also in how we organize and think about teaching and how we think about ourselves as teachers. Successfully navigating a change process demands careful planning and delivery and must respond to adult learning needs. We believe there are two key characteristics of the change process that must be present from the beginning for practicing educators to engage in an agreeable and lasting change process.

The first is that the process must build and sustain teacher confidence. Confidence can be compromised as we engage in change. Change engenders uncertainty and confusion for some. We ask ourselves if what we were doing before was wrong or perhaps inadequate. This is invariably not the case yet is a common concern as we approach professional development experiences. There are two important ways in which confidence is sustained through this change experience. Participants must be invited into the process with the confidence that what they are already doing well will be respected and protected. We begin here by acknowledging the exceptional instruction already being delivered in classrooms everywhere. As a participant, be assured you are engaging in a learning experience from a position of equality with your peers and with the authors. To support this contention, this text is presented as a conversation among educators rather than something delivered to educators. It is framed as a shared professional experience anticipating collective growth and will rely on the insights of participants to make the experience whole.

Another type of confidence we address is the confidence teachers demand before implementing something new for their students. Teachers must believe in the potential for success of any new approaches and must have confidence that they are adequately prepared for implementation. We strive to build confidence by sharing the voices of teachers engaged in instructional practice change all over the world. The professional development sequence offered here has not simply incubated in a laboratory. It has been implemented in literally thousands of classrooms and at all levels of instruction in countries around the world. From classrooms in the United States to those in Europe, Asia, and Central America, teachers have been engaged with this professional development model. These many extraordinary teachers have not been passive participants. Indeed, that has not been permitted. Participants have been partners in the development of this experience, giving their voice to content and process. They have implemented the model and strategies contained here and have done so successfully but not without making the practices their own and fashioning them, in collaboration with their peers, to meet the needs of *their* students. They participated in a series of integrated learning experiences drawn together by a powerful model for teaching and learning that classroom teachers have employed in their instruction with great success. Confidence also comes from and is sustained by providing authentic learning opportunities where strategies are modeled within the context of content-specific instruction.

The second key characteristic of successful, lasting change is derived from this latter source of confidence and relates to time and opportunity. Teachers must be given adequate time and opportunity to develop mastery of models and strategies before engaging their students. The professional development sequence that unfolds here allows you opportunities to learn through direct experience and then through practice with your own curriculum to become comfortable with just how to

implement new approaches in your own classroom. This enables you to proceed, knowing you have the necessary skills and understanding to be successful.

The audiences for this text include, among others

- inservice and preservice teachers,
- district professional development specialists,
- curriculum development specialists,
- school administrators,
- university teacher preparation faculty, and
- interested educators.

The text is presented so an individual reader can follow the sequence, applying the content to his or her instructional practice. However, we encourage readers to come together in book groups or other forms of learning communities where questions can be raised, experiences shared. Importantly, throughout the process, dedicated inservice and preservice teachers can find support for an instructional approach that promises to lead to both enhanced student learning and enhanced student capacity to be effective lifelong learners.

PROFESSIONAL DEVELOPMENT SEQUENCE STRUCTURE

This course of study is designed for immediate implementation. It blends theory with practice to provide implementers with substantiation for their teaching while detailing instructional approaches for classroom implementation across grades and content areas. Being practice oriented, it leads to immediate changes in classroom practice. Because changes occur immediately, school administrators must be informed as to what changes are taking place so they will recognize positive growth in professional practice. Administrators can inhibit positive change when uninformed. Their involvement in the change process not only provides sanction, it also allows them to make informed judgments about implementation process and success, enabling them to provide an ongoing, positive contribution to professional development outcomes.

At this point, it is probably clear that here you will encounter a teaching-learning model experientially. The text is organized so you will first experience the various strategies within a lesson embedded within a model framework. This first encounter is followed by a careful deconstruction of the lesson to make the underlying functions of the applied strategies and the learning experience whole and transparent. Then, you will be asked to consider how the methods or strategies might be implemented in your classroom within your curriculum. If working within a cohort or book group, foundational to success is creation of a positive learning community. You are encouraged to enter into your learning community with an open, positive frame of mind. This does not suggest you enter without a fair degree of skepticism. Open and positive merely imply a willingness to hear, understand, consider thoughtfully, and try out in practice what is being shared. As we emphasized from the beginning, good teachers weigh carefully new instructional approaches before incorporating them permanently into their instructional retinue. Care and caution are warranted. What is asked here is simply that, as a participant,

you commit to implementation in good faith in your own practice using your own content. After several implementations and appropriate modifications, if best judgment and student responses indicate implementation of a strategy is ineffective for you, then it should be discussed honestly in your learning community and, if other modifications are not offered, discontinued.

The three-phase instructional model that underscores this text is well supported, reflecting research on how people learn best. Models approximating the thinking and learning processes have been presented in numerous forms by numerous authors and researchers; some of whom include Temple and Gillet (1996); Vaughn and Estes (1986); Ogle (1986); Tierney, Readence, and Dishner (1985) and Herber (1970). The model here elaborates a means by which teachers can think about, organize, and guide students through the cognitive process in which learners must engage so that they might truly benefit from that learning experience.

In the first portion of this Professional Development Sequence (PDS), one activity is modeled at each stage of the framework for illustrative purposes. It is important to realize that the strategies and activities modeled at each stage of the framework are not limited to those presented in these model lessons. There exists a host of strategies that can be used effectively at each stage. Throughout the text, more strategies are added to each framework phase with the goal of building a large repertoire of strategies by phase. The number of strategies for each phase is, however, limited only by the imagination and creativity of teachers and students to design and implement more strategies.

CHAPTER BY CHAPTER

Chapter 1 provides a clear picture of how this professional development sequence unfolds. It will describe a linear process, conceptualized within a framework for teaching and learning that is cyclical in nature and intended to pattern more closely how people actually learn. From the outset, participants are expected to take an active role in the professional development process by engaging with the text and the tasks outlined. The authors' assumptions about teaching and learning and the philosophical perspectives underlying conceptual framework of the PDS are also described. Each chapter will build on the previous chapters with respect to applications of the framework for thinking and learning to the classroom instruction. Each chapter begins and ends with clear expectations for learning along with the development of plans for immediate implementation. Finally, each chapter provides opportunities for participants to work together and reflect on the content and its impact on their teaching.

Chapter 2 presents the first experiential lesson through which the basic framework for teaching and learning is presented. Participants will experience a content lesson as students of that content and then debrief the experience as pedagogs. As participants do so, the framework is exposed within a genuine learning environment. Participants are then asked to begin developing plans for application of the framework to their own teaching. This sets the pattern for the remainder of the PDS of genuine learning experience followed by analysis, planning, and practice.

In **Chapter 3,** the framework is applied to a narrative text experience. Readers are engaged in a multitiered application of the framework with questioning at the heart

of the guided reading lesson. The critical role of questioning and engaging students at multiple levels through self-interest is addressed in practical ways. A variety of instructional strategies are modeled within the framework application, making transparent when and why particular strategies are employed.

Chapter 4 details how critical thought is best incorporated within classroom instruction and why. Critical thinking is presented as a complex, multilayered event that must be planned for rather than hoped for. Readers will experience an enhanced lecture on critical thought proffered within the framework, modeling strategies for student engagement.

Chapter 5 focuses on writing for thinking and models three writing for thinking strategies. Additional strategies are also presented within the three phases of the framework. A discussion of the importance of using writing as a tool for thinking in content-area studies is presented.

Cooperative learning and additional emphasis on fostering critical thought underscore the work in **Chapter 6**. Along with practical strategies, some discussion is offered regarding what is implied when a classroom becomes an environment for thinking and how cooperative-learning strategies can contribute to such an environment.

Chapter 7 introduces a way of thinking about literacy (reading, writing, speaking listening, and thinking) as a tool for critical thought rather than as a subject of study. Readers' workshop is used as the format for experiencing how the tool of literacy can be used to enhance learning across content and grade levels. In this chapter, a science lesson is modeled along with the now familiar debriefing. Explicit rules for engaging in a readers' workshop type experience are provided to guide planning.

Chapter 8 further explores writing for thinking approaches for content-area learning and guides learners through several framework-based strategies for content-area study. The writing process is discussed in greater detail here to make more evident the power of writing for thinking. And in **Chapter 9,** participants reflect on the PDS experience, develop specific plans for further implementation, and identify additional needs for continuing professional development. Participants are asked to reflect on the personal goals they identified from Chapter 1 and consider whether they have attained these goals and objectives and if not, what is needed to reach them.