1

Teaching in the 21st Century

The world we have created is a product of our thinking; it cannot be changed without changing our thinking.

—Albert Einstein

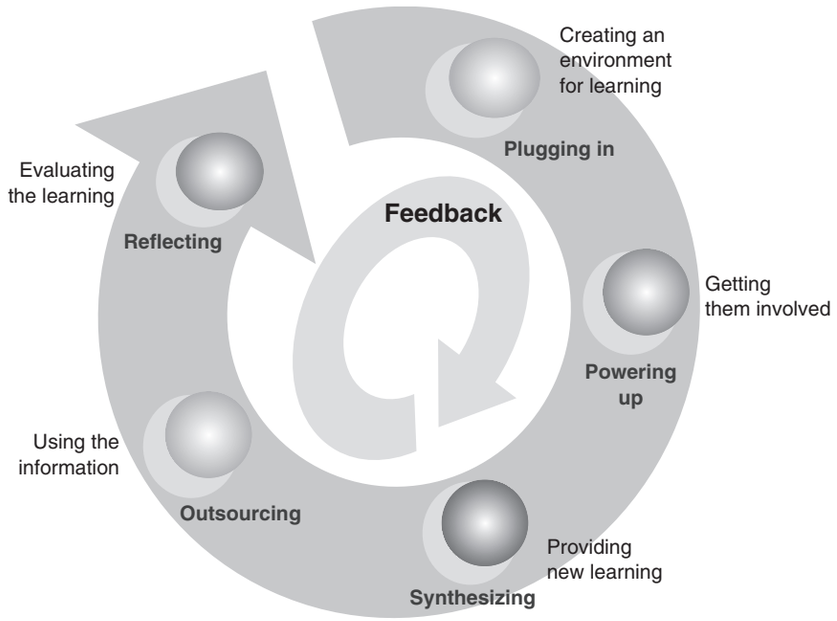
We must prepare students for the world of their future—not the world of our past.

—Anonymous

Visit any bookstore today and you will be inundated by authors who are making predictions about what will be required of workers in this century. Much of what they say is already happening. Thomas Friedman's (2005) book, *The World is Flat*, gives us an alarming picture of a universal world in which any job that can be done cheaper or with more efficiency than in the United States will be outsourced—indeed is being outsourced as you read this book. The implications for our students are dramatic. They must be able to know both how to do something and how to do it in a way that cannot be easily duplicated. Just having facts will not be enough; in the future, students must be able to employ those more right-brain functions, such as synthesis, creativity, and esthetics.

Bill Gates has a question that he sometimes uses when talking about globalization and competition in this century. He asks his audience whether 20 years ago, they would rather have been a "B" student in Poughkeepsie or a genius in Shanghai. Then he asks them about their feelings on this today (quoted in the Benton, 2005). Anyone traveling to Shanghai today will find that the genius there is being utilized to the fullest extent with new skyscrapers, new technology, and new jobs.

Figure 1.1 The Strategic Learning Model



Daniel Pink (2005), in his cutting-edge new book, *A Whole New Mind*, poses three questions that we should be asking ourselves as we model the curriculum, the lessons, the standards and, yes, even those high-stakes tests:

1. Can someone overseas do it cheaper?
2. Can a computer do it faster?
3. Am I offering something that satisfies the nonmaterial transcendent desires of an abundant age? (p. 232)

These questions will guide the job market for the students that we have in our classrooms right now. What we teach and how we teach it will have a profound effect on whether our students fit into the new literacy for the job market in this century.

Who are these kids sitting in the classroom? They are certainly different from generations past—not just in the way they dress, the piercing, the fidgeting, the off-task behavior, but also in the ways that they learn and communicate. Students today are comfortable with multitasking. In fact, they can send text messages while watching a movie and talking on the phone, all at the same time, without missing a beat. They are easily bored, and they just don't learn like the students of the past. What is a teacher to do? What do we know now that we didn't know then? Let's start with some things that we know about today's learners.

1. *They are wired differently*. We come into this world with about 50% of our wiring in place; the other 50% comes about as a result of our environment. Our parents and grandparents grew up in a time in which listening was the primary modality for learning. They listened to the radio, listened to each other as they sat around the dinner table at night, and they listened to the teacher as he or she lectured. They could do that effectively because their brains had been wired to listen

from a very young age. Students today really are neurologically wired differently. From a young age they have been actively using technology, multitasking and generally bombarded by a multimedia world. The wiring of the brain has been developed to follow that pattern. They do not learn by sitting and listening to a lecture alone, and they may not get excited when the teacher asks them to memorize the capitals of all the states. The student may be thinking, "Why should I memorize the capitals—if I want to know the capital of a state, I'll Google it."

2. *The primary mode of learning is visual or visual–kinesthetic*. More than 80% of the students in any given classroom are not auditory learners, yet the prevailing method of teaching—particularly in secondary schools—centers on lecture. Students today need to see the learning, and they need to interact with it.

3. *Being average is not enough*. That may have worked in a different economy where the assumption was that 20% of the students would do well, at least 20% would fail and the rest would be "C" students. The job market had plenty of work for the "average student." While America still enjoys some of the same economic advantages of the past—namely, a free market, access to capital, and a climate that accepts entrepreneurship—other parts of the world are gaining on us. Being a "C" student is a scary perspective in this day and time. We must change the way that we teach so that we teach to the modalities of all of our students, and we must realize that the digital learners of today need to do more than hear the learning—they need to see it and do something with it. As Daniel Pink (2005) says, the markets of the future demand that we don't just accumulate a lot of information but that we have the ability to detect the importance of the information, know how to synthesize it and put it in a format easily understood by the masses.

What, then, are the principal strategies of a strategic classroom and of a model built around this kind of classroom? Here are some of the basic characteristics that will be discussed throughout this book:

1. *There is a high level of support for achievement.* Teachers and students not only expect quality work, they will not accept anything less.
2. *Students are given a rubric up front*, before an assignment is made, so that they know what is expected. There is no "gotcha" attitude. Students know what they must do to be successful, and they are given the tools to help make success possible. We usually think of learning in terms of the normal bell curve, where a small number are toward the high end of achievement and a small number are at the low end, with the majority in the middle, or average. The bell curve assumes that some will fail and some will excel, but most will be mediocre. That has never been acceptable to me. If students are coming to school and are doing their best and there is still a bell curve, something is wrong with the system. The bell curve should occur before intervention, not after. If teaching follows the principles of strategic learning, there will be a j-curve: There will be a small number at the bottom and a small number at the center, with the majority at the top. That is what happened in the pilot school. When all students began to learn at a quality level, the overall failure rate dropped to below 4%—a j-curve.
3. *Higher-order thinking is emphasized for everyone*. Students are given meaningful, challenging work. It is an insult to give students mounds of dittos to complete to fill up time. Time on task is important only if the task is meaningful.

4. *There is an emphasis on depth of learning* rather than just covering a great deal of material. Students are given sufficient time and resources to make the learning a part of long-term memory.
5. *Connections are made to the real world and between the learnings*. Most students can be taught anything as long as it is relevant to their world. Glasser (as cited in Gough, 1988) says that is why young children learn one of the most difficult things to learn and learn it without flash cards—they learn a language. One of my favorite math teachers has a sign in her room that should be in every classroom in the United States. It says, "I promise I will never teach you anything in this classroom unless I can tell you how you are going to use it in the real world."
6. *The classroom emphasizes collaboration and dialogue*. To be successful in the job market, students must be able to articulate what they know and listen to the ideas and opinions of others. Students practice cooperative learning strategies to help solidify what they have learned and to practice the learning so that when it is time for individual assessment, the learning is in long-term memory. Sizer (1992) says,

   > The real world demands collaboration, the collective solving of problems. . . . Learning to get along, to function effectively in a group is essential. Evidence and experience also strongly suggest that an individual's personal learning is enhanced by collaborative effort. The act of sharing ideas, of having to put one's own views clearly to others, of finding defensible compromises and conclusions, is in itself educative. (p. 118)

7. *Assessment is a natural progression of the lesson*, not something that is tacked on at the end to provide grades for the grade book. Students are told up front, before the lesson begins, what they must do to demonstrate success. The lines between the goals of the lesson and the assessment are blurred.
8. *The environment in the classroom is collaborative and supportive*. Climate is so important that none of the other techniques discussed will be really effective unless the issue of climate is settled first. In a world full of broken relationships, strong, supportive relationships are important to students. We cannot control the students' environment outside of the classroom, but for 7 hours each day, we have a great deal of control over their environment. It may be our best chance to make the world a better place.
9. *Technology is a seamless tool that is a part of the day-to-day teaching and learning process.* Today's students have never known a world without technology. They have literally grown up digital; they speak digital as their native language. Those of us over 30 speak digital as a second language. We must learn to incorporate technology into our teaching repertoire and into our students' work. Technology should not be an add-on but an essential tool, just as a pencil was to our generation.

Teaching for long-term memory is critical. After years of research on the factors that help students learn and remember as well as the factors that prevent understanding and retention, a model for teaching has emerged that is called, appropriately, the Strategic Learning Model. It is called the *learning* model because the emphasis is on student learning—where it belongs. Figure 1.1 (p. 2) is a graphic representation of this model.

ELEMENTS OF THE STRATEGIC LEARNING MODEL

The first element is called Plugging In. When I am working with schools, I often ask teachers, "What is the single most important thing that is keeping you from having the classroom of your dreams?" The answer is almost unanimous: "lack of student motivation." As a teacher, what can you do at the beginning of a lesson to ensure that your students have the elements necessary for the brain's natural instinct toward motivation?

The second element to the Strategic Learning Model is called Powering Up. Thanks to the use of magnetic resonance imaging (MRI), we now know that the brain is a seeker of connections. When new information is given to students, chaos may take place in the brain until a connection or hook is made. Unfortunately, the connection is never made for some students, and years of frustration and failure follow. Personal connection is the part of the lesson that provides a hook for the new learning and taps into the prior knowledge of the students.

The third phase of the Strategic Learning Model is Synthesizing. Finding and using sources of information is key, and examples are given for ways to teach in a differentiated classroom. This is the part of the lesson in which students acquire new information. Emphasis is placed on depth of learning, not just covering the text. At this stage in the lesson, students are active participants in the learning. They are sharing information, and they are practicing the learning together.

In the fourth phase of the model, called Outsourcing, we discuss how students apply the information in ways that are meaningful. In this part of the lesson, students use the new information to deepen their understanding and to demonstrate comprehension in some way. Concrete models are emphasized because as many as 80% of the learners in the classroom are likely to be visual learners.

The last chapter deals with helping students to evaluate their own learning and to make real-world connections. I call this part of the model Reflecting on the Learning.

Why didn't I include teacher assessment as a separate piece? Because assessment is an ongoing process in this model. Part of the reason for it is the immediate feedback and the incremental challenge. Immediate feedback is essential to this www generation who play digital games for hours without boredom.

THE TEACHER'S ROLE

The teacher's role in the strategic-learning classroom is critical and is based on the following six precepts:

1. Expect that all students can and will achieve at a quality level.

2. Accept only quality work on all student products. Accepting mediocre work is an insult to students and adults alike. Don't mistakenly believe that we raise students' self-concept by giving them watered-down work so that they will be successful. The brain likes and relates to challenge.

3. Help students understand the meaning, and connect the learning to prior knowledge or the real world rather than relying on simple drills or exercises to memorize routine facts to pass a test.

4. Serve more as a coach, guide and facilitator for the students' efforts to learn the material, and ensure that students will be active participants in the learning. "The leader in this role senses when and when not to intercede in the process; she or he is front and center when need arises, but assumes a low profile when the situation seems to be progressing well on its own" (Bellanca & Fogarty, 1991, p. 198).
5. Provide a variety of assessments that help to give a broad picture of each student's ability and that is directly aligned with the curriculum.
6. Engage students in meaningful work, and incorporate real-world application into the learning.

The strategic-learning classroom is, above all, student centered and follows the challenge to make learning meaningful. This requires a change in the way we view teaching. Many still believe that it is not education but the children who must change. The paradox is that children will not change until we change the way we approach the institution that teaches them. Einstein was right: "We will only change the world when we change our thinking."