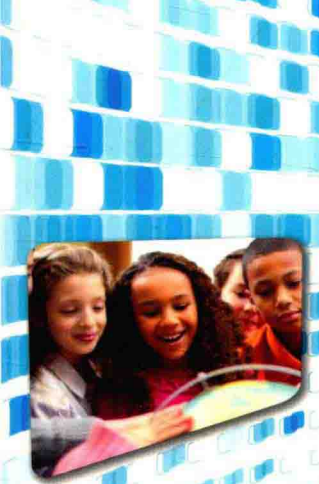
the teaching REVOLUTION

RTI, Technology, & Differentiation

Transform Teaching for the 21st Century



WILLIAM N. BENDER
LAURA WALLER

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The Teaching Revolution challenges educators to imagine schools the way they should be, with a "big picture" vision that includes student-driven curricula, interconnectivity, and targeted responsiveness to students' individual needs. Bender and Waller provide a futuristic and provocative discussion on combining three major instructional innovations—RTI, technology, and differentiation. Drawing on the growing 21st-century skills movement, the text engagingly weaves these three areas into a vision for school transformation that includes

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- RTI that benefits all students and whole schools in their improvement efforts
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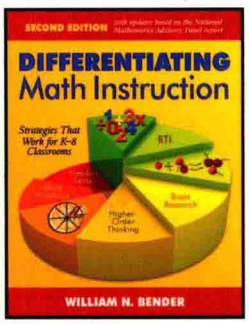

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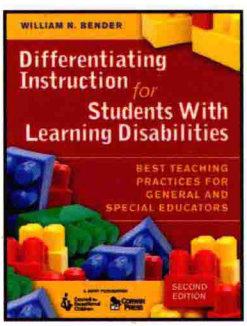

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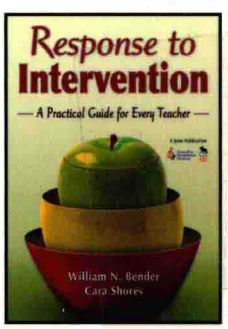

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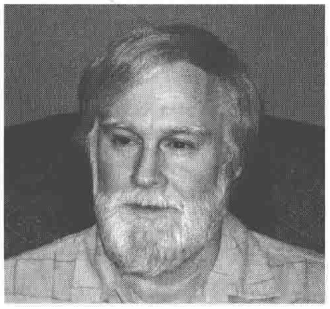

William N. Bender is an international leader who focuses on practical instructional tactics with an emphasis on response to intervention (RTI) and differentiated instruction in general education classes across the grade levels. In particular, Dr. Bender has written more books on RTI than any other author in the world, two of which are best sellers. He has now completed seven books on various aspects of RTI, as well as a professional development videotape on that topic. He completes between forty and fifty workshops yearly in the United States, Canada, and the Caribbean. In the fall of 2010, he was selected to work with the Ministry of Education in Bermuda to establish their nationwide RTI framework. One of his recent books, *Beyond the RTI Pyramid*, was a 2010 finalist for the Distinguished Achievement Award for Excellence in Educational Publishing.

Dr. Bender uses practical strategies and easy humor to make his workshops an enjoyable experience for all, and he is frequently asked to return to the same school or district for additional workshops. He consistently receives positive reviews of his professional development workshops for educators across the grade levels. Dr. Bender believes his job is to inform educators of innovative, up-to-date tactics for the classroom, rooted in current research, in an enjoyable workshop experience. He is able to convey this information in a humorous, motivating fashion.

Dr. Bender began his education career teaching in a junior high school resource classroom, working with adolescents with behavioral disorders and learning disabilities. He earned his Ph.D. in special education from the University of North Carolina and has taught in leading universities around the nation, including Rutgers University and the University of Georgia. He is now consulting and writing full-time and has published over sixty research articles and twenty books in education.

Laura Waller is an exciting, young, dynamic educator and the co-author of *RTI and Differentiated Reading in the K–8 Classroom.* Ms. Waller began her career as a reading specialist in elementary education, working at an inner-city school in Washington, DC. With degrees from both Appalachian State University and Johns Hopkins University, she succeeded in her teaching of English-learning students, underprivileged students, Title I students, and many other students who struggled in reading and mathematics.

Ms. Waller is now teaching underprivileged children in a rural school in North Carolina and doing workshops for educators on technology for reading instruction and differentiated instruction in core academic areas. She also offers workshops on classroom use of Smart Boards, e-assessments, and other technologies to facilitate differentiation and academic progress. She recently received funding from the Bright Ideas Grant to implement hands-on literacy centers that support learning with a focus on technology and preparing students to be globally competitive in the 21st century. Her instructional practices have been featured in a professional development video, *Differentiating Math Instruction* (Corwin, 2009).

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Introduction

The "Three Sisters": RTI, Technology, and Differentiation Are Changing the World of Teaching

"In a world changing drastically, what can we imagine our future to be?"

IMAGINING

The famed songwriter, and some would say philosopher, John Lennon once invited us to imagine a new world.

The civil rights leader, and many would say the stand-alone moral leader of the 20th century, Dr. Martin Luther King invited us to dream what might be, thereby providing us with a vision to guide human interaction—a vision of kindness, nonviolence, and understanding.

The great Mahatma Gandhi imagined a world in which political and economic justice would be achieved through nonviolence. He created that reality for the first time in history with the sheer power of his single-minded will.

And from a text sacred to Christians, Jews, and Moslems alike, we read, "God said, 'Let there be light!' And there was light."

These examples show the amazing power of imagination. The power of thought is fundamental to the Jewish, Christian, and Islamic traditions, in that God's imaginings—his very words—created our world and breathed life into our species. Each of the men mentioned knew and deeply understood that singular fact, as shown in the amazing power of their dreams, their imaginings. Human thought, imagining, is a profound creative power of will; it can and frequently does change the world. If the pen is indeed mightier than the sword, then the power that drives the pen—the power of the mind, the power of imagination—is the most profound power of all. Imagining is the most influential creative force in our universe.

As parents and educators concerned with our schools in the early decades of the 21st century, we might use that creative power to imagine into existence an education for our children. If our world is already in transition, as we believe it to be, then we should, we must, use our imagination to guide that transition, that teaching revolution. At the very least, these thoughts might provide us the freedom to ask some profound questions about teaching and learning in the 21st century, such as,

"How do we want our children to experience learning?"

"How are our children experiencing learning in the midst of the current digital communications revolution?"

"What can we imagine schools of the future to be?"

"What might schools become if we free ourselves from all the trappings, practices, and disappointments of today and truly imagine infinite possibilities for our students in the 21st century?"

OUR IMAGININGS

Here are a few initial thoughts—our imaginings, if you will—on education, teaching, and learning in the 21st century.

- Imagine freedom to learn any time and anywhere.
- Imagine an empowering curriculum that all students find worthy and actually want to study.
- Imagine teaching without whole-group lesson plans or unit-based instruction.
- Imagine collaborative, real-world projects as the basis for all or most of the school curriculum, thus harnessing the cognitive power of students everywhere to solve problems in society.
- Imagine all learning as project-based learning, rooted in real-world problems and engaged in a never-ending search for real-world solutions.
- Imagine the power of using student preferences, student voice, and student choice—and not textbooks or curricular standards—as our primary guide to what we teach.
- Imagine formative assessment processes designed to spot and respond to specific learning problems almost immediately, as students experience them.
- Imagine using technology as the primary engine for, and basis of, the freedom to learn.
- Imagine teachers as supportive facilitators of learning, not as class leaders or group policemen.
- Imagine a teaching/learning process that is immediately responsive to the academic and behavioral needs of every individual student.

- Imagine a wired digital classroom; smartphones, or laptops on every child's desk, as well as one at home, used constantly by students to engage in high-quality learning activities.
- Imagine immediate and complete interconnectivity in the digital world, controlled and mediated by the mind, not a keyboard.
- Imagine the Internet, organized appropriately to serve as both the curriculum and the assessments for our students.
- Imagine students educated to use such a learning system, carefully separating the gems from the meaningless fluff—the wheat from the chaff—along the information superhighway.
- Imagine students taught in such a way that they consider learning fun.
- Imagine students receiving exactly the instruction they need, given their learning approaches and preferences, not merely instruction delivered to whole groups of students who happen to be the same age.
- Imagine a curriculum wholly created in the 21st century, for the 21st century.
- Imagine a world where "political correctness" or any other attempt to limit thought (e.g., burn books, identify or limit hate speech) is viewed as a distorted misunderstanding. In that imagined world, all ideas are free to stand or fall on their own merits.
- Imagine students who are able to tell the difference between fact and opinion, or between informational stories and today's "media opinion" shows or comedy shows that masquerade as news.
- Imagine all assessment as dynamic, authentic assessment rooted in projects that lead to creative answers for real problems in society. Why should we waste the profound collective energy of learning by millions of students on "made up" problems? Can't we learn to let students work and solve real problems?

Given this rather broad list of imaginings, we can make a few initial observations. First, these are merely the rambling thoughts of two educators who have collectively participated for many decades in the educational system and have, for years, reflectively questioned that system. We freely acknowledge that other educators, while perhaps sharing some of these thoughts, would certainly have other imaginings; of course, we cannot know what those might be. Given that rather profound limitation, we do invite them to communicate directly with us or others about these thoughts and ideas. In fact, we would love nothing better than for this book to start a dialogue of imaginings on what schools need to be. Let the creative dialogue begin!

Next, in looking over the imaginings, we observe that some of these are now underway, while others seem merely distant dreams. Several of

these ideas represent factors that are already at work in the marketplace (i.e., social-networking interconnectivity, or a computer on every desk, at least in some schools) and only remain unrealized in all of our classrooms because of limited budgets and, perhaps, a lack of imagination in our politicians—perhaps (dare we say it?) even in our educators.

Next, we put these imaginings down with no distinct priority but rather as a catalyst for our own thoughts. In fact, some of these seem to be directly contradictory to others. For example, how can topical studies be driven exclusively by student preference or choice? Perhaps this might lead to seeking one or more guiding principles that might govern these imaginings. If so, then what should be the driving force or guiding principles in seeking to conceptualize and perhaps enact this list of imaginings? Should there even be such guiding principles?

THE TEACHING REVOLUTION

We cannot now see the ultimate value of these imaginings, and we know not what power they may have. While some may see that as "overhyped," we believe these imaginings are quite justified, given the transformation of instruction that has, in some locales, already begun, as well as the fundamental communications changes in our digital world that are impacting and will continue to impact teaching in a profound way. In short, a drastic change is coming in the very structure of our teaching/learning process that is likely to dramatically alter the very look and feel of our classrooms and ultimately of our entire educational system. Many have already commented on this imminent change (East, 2006; Kay, 2010; Partnership for 21st Century Skills, 2009a; Tomlinson, 2010; Wilmarth, 2010). The coming changes in instruction are so profound that many of today's teachers, students, and parents might not recognize the learning environments only a decade from now.

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As one example, the Partnership for 21st Century Skills, an advocacy group promoting modernization and full implementation of technology in every aspect of our schools, has recently encouraged a refocusing of our educational institutions to adequately address skills for the next century. Such content as technology skills, use of the new "mobility technologies," digital media skills, content creation, and interpretation skills, along with many other informational skills that will be critical in the digital world of tomorrow, must be more heavily emphasized in our classrooms today (see www.p21.org).

However, this group advocates more than merely adding these skills to our curriculum; rather, the very structure of knowledge is likely to change as production of new knowledge becomes based on social networking and actual creation of knowledge by students, as opposed to using these new technologies merely to make information available to students (Kay, 2010; Wilmarth, 2010). When that transition takes place—a transition that many see as imminent—our current instructional practices will seem as dated as required courses in blacksmithing. In 2010, as this book was in preparation, an emphasis on these skills did not characterize most classrooms (Kay, 2010). However, the change is coming (Partnership for 21st Century Skills, 2007, 2009a, 2009b), a fundamental transformation of education, involving everything from the design of our schools to the constant use of technology, into something that more closely resembles the productive environments that now characterize our businesses in the modern world.

More so than technology, however, other changes are dramatically restructuring our classrooms. Response to intervention (RTI) is another change in instructional procedure that is currently impacting our students and will soon impact all teachers across the grade levels (Bender, 2009a; East, 2006). The importance of this instructional paradigm has grown far beyond its roots in special education eligibility discussions, and the impact of RTI in classrooms today cannot be overemphasized. Elementary classrooms around the nation are functioning very differently today than did the same classrooms in 2005 or 2007, as a result of the implementation of RTI (Bender, 2009a). As this book goes to press, middle and high schools are exploring the same profound change.

Finally, the concept of instructional differentiation (Tomlinson, 1999, 2010), an idea that has guided our instructional endeavors for a decade, has now matured, leaving its roots in multiple intelligences theory far behind and transforming into a new instructional model for classrooms at all grade levels (Bender & Waller, 2011; Tomlinson, 2010; Tomlinson & McTighe, 2006). Because of the nationwide implementation of differentiated instruction, whole-class instruction, that icon of teaching for nearly fifty years, is likely to either significantly decrease or simply come to an end across the grade levels (Bender & Waller, 2011). It will be replaced, in large measure, by differentiated instruction framed in learning centers or by using other differentiated instructional models such as project-based learning, creation of knowledge through social-network-based digital environments, or cooperative instructional practices. Perhaps most instruction will ultimately be computer or web based, facilitated but not led by the teacher. Such instruction promises to be not only effective but also much more individualistic. Student voice and student choice will play a much larger role in what is studied and learned.

Of course, today's digital communications media, by and large, did not exist when Tomlinson published her initial work on differentiation in 1999, and that demands the following question: What opportunities do

modern digital and social-networking media such as *MySpace*, *Facebook*, or *Twitter* hold for differentiated instruction? As this book was written (late 2010 through February 2011), the whole world witnessed a never-before-seen lesson on the impact of online social networking. An actual revolution, the "Twitter Revolution," took place in the streets in Egypt in February of 2011, leading to the downfall of the head of the government, largely resulting from the amazing power of digital communications media—communications media that only seven years ago did not exist.

The sheer power of the social-networking, digital media phenomenon has surprised nearly everyone, and given technology today, it is hard to imagine where differentiated instruction—coupled with these technology-based digital tools, computerized learning environments, or totally individualized, web-based curricula—can ultimately lead. Most proponents of technology describe these developments as an extremely fast train, increasing in speed exponentially and heading into what is now termed the *singularity*. The singularity is defined as the moment when technological change becomes so rapid and so profound that it causes a fundamental rupture in the fabric of human history (Grossman, 2011). At the singularity, technology embedded within artificial intelligence, coupled with today's automated manufacturing power, makes human beings both unnecessary and, some might say, obsolete.

The singularity might also be seen as the moment in time when artificial intelligence overtakes and surpasses the brainpower of all human beings worldwide, and the growth curve in a variety of technological fields suggests this may happen sometime between 2020 and 2045 (Grossman, 2011). Some scientists are seriously discussing the migration of the human mind into software at the point of what, in the 20th and early 21st centuries, was called *death*. Those scientists predict virtual immortality as individual human beings outlive their bodies and continue to live and thrive in the form of complex software programs. Others who study the singularity suggest that combinations of nanotechnology and bioengineering may preclude human "death" entirely, making these speculations about "human personality" software moot. Further, data from those fields, once again, suggest a technology growth curve and time frame for reaching the singularity in 2045 (Grossman, 2011). These discussions, from serious scientists, remind one of the computer known as *Hal* in the famed movie *2001: A Space Odyssey* (1968) overtaking human decision making and ultimately controlling human destiny—a *Hal* on steroids, if you will! As educators, we must ask, what does the teaching/learning process look like as we approach the singularity? With nanotechnology leading to computers much smaller than the eye can see, and those computers eventually embedded literally within the human brain, our Internet and social-networking interface will be both seamless and instantaneous at the singularity. What does learning look like in that world, when all access to all digitally recorded human knowledge is immediately accessible to everyone?

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