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The Paradoxes, Oxymorons, and Myths of Education

In the summer of 2007, JohnCarlos Miller was appointed principal of Northeast Middle School near Greensboro, North Carolina. At that time, the authors of this book had been conducting federally funded research at the school. Our research indicated that there were some severe problems at Northeast Middle School. It had been wracked by high faculty turnover, poor teacher morale, and serious behavior issues for the preceding few years. A retirement opened up the principal position, and JohnCarlos received the nod.

During the summer of 2007, Principal Miller tried to meet with all the returning teachers. Their dialogue focused on what they perceived as problems within the school, the strengths of the school, and what they were willing to do to try to support efforts to improve the school. He also had numerous faculty positions to fill. JohnCarlos was very careful in who he hired. He was looking for teachers who had a passion for teaching students, but who could also set and model high standards in all aspects of school life. And perhaps most importantly, JohnCarlos was looking for teachers who loved students (in the best sense of that word) and truly believed they could help students achieve regardless of societal factors such as low socioeconomic status (SES). During the meetings with returning

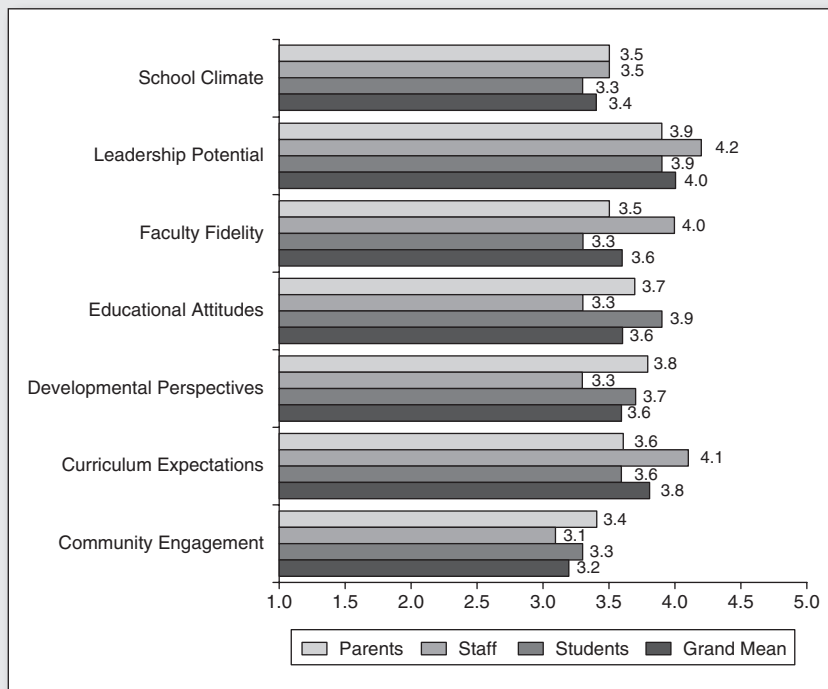
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teachers and hiring interviews, Johncarlos was also sharing data on the school. He discussed the student achievement data, noting that the school was failing to meet expected growth based on the North Carolina Assessment Model and the standards of No Child Left Behind (NCLB). Together they also looked at attendance, suspension, and office referral data from school and district reports. They discussed parental support or lack thereof. Finally they looked at the multi-dimensional data that was being provided via the research study.

The study utilized the Multi-Dimensional Assessment that examined seven dimensions of education from the perspective of educators, parents, and students. The surveys garnered data from all stakeholder groups; the data was compiled into an easily understandable narrative and visual report (Figure 1.1). It was clear from all stakeholders that there were some concerns but there were also some solid areas to build on. Based on this comprehensive collection of data, the school leadership team, working with the faculty and students, began to develop a comprehensive plan for school improvement. In order to improve they would build on their strengths while also addressing concerns with all stakeholders involved in their efforts. What was interesting in their approach was that they were not just going to focus on improving curricular outcomes, but wanted

Figure 1.1 N.E. Middle School's Overall Multi-Dimensional Mean Scores



student learning to improve and would work diligently to make this happen. However, they understood that School Climate, Developmental Perspectives, Faculty Fidelity, Community Engagement, and Leadership Potential would also play important roles in improving academic outcomes. Drilling for the test would not be enough. Students and adults had to work together in all aspects of school life in order for the effort to succeed. They would be data-driven, but their data would be robust and comprehensive. It was understood that each aspect of the school influenced some other aspect of the school. It was expected that, as School Climate improved, Educational Attitudes of all stakeholders would improve as well. As academic support for students improved, academic outcomes would improve. Did they succeed?

In the accountability year 2007–2008, behavior incidents dropped dramatically and suspensions decreased by 60%. Also, the school achievement data improved. Please note that the state reading test was “renormed” for 2007–2008, and the reading scores for 2007–2008 cannot be compared with the prior year. However, the following table represents the results for 2007–2008 Reading in all Northeast Middle School (NEMS) subgroups as well as the results for Math 2006–2007 and Math 2007–2008. The table below shows how NEMS accomplished one of the strongest achievement increases in math for the district.

<i>N.E. Middle School SUBGROUPS</i>	<i>READING 2007–2008</i>	<i>MATH 2006–2007</i>	<i>MATH 2007–2008</i>
ALL	50.1%	54.5%	67.6%
AFRICAN AMERICAN	41.5%	43.2%	60.4%
HISPANIC	44.6%	40.9%	69.6%
WHITE	60.7%	67.0%	74.8%
FREE REDUCED LUNCH	41.7%	42.7%	64.0%
LIMITED ENGLISH PROFICIENT	23.6%	24.4%	50.9%
STUDENTS WITH DISABILITIES	16.2%	26.0%	46.2%

Often, an increase in one year is hard to sustain during the second year. However, this was not a typical middle school. All stakeholders were determined that they could do better. They reexamined their comprehensive data reports. They celebrated their strengths and developed strategies to address the concerns with greater intensity. Interestingly, the data from the research study were showing improvement within the seven dimensions. Some growth was significant, but much was pointing to a more gradual growth model. Meanwhile, as the dimensions developed, the 2008–2009 school year resulted in the following achievement growth.

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<i>N.E. Middle School SUBGROUPS</i>	<i>READING 2007–2008</i>	<i>READING 2008–2009</i>	<i>MATH 2007–2008</i>	<i>MATH 2008–2009</i>
ALL	50.1%	62.3%	67.6%	80.6%
AFRICAN AMERICAN	41.5%	54.8%	60.4%	74.8%
HISPANIC	44.6%	55.6%	69.6%	84.0%
WHITE	60.7%	75.7%	74.8%	88.0%
FREE REDUCED LUNCH	41.7%	55.0%	64.0%	74.9%
LIMITED ENGLISH PROFICIENT	23.6%	35.8%	50.9%	79.2%
STUDENTS WITH DISABILITIES	16.2%	32.7%	46.2%	53.5%

As this book is being written, we are waiting for the third year of data. There were some obstacles, however, to overcome. The homeless population of students in the school was increasing. There had been a reduction of four teachers due to budget constraints while there was a slight increase in the number of students in the school. Yet all stakeholders in the building felt they could do better. No longer was economic difficulty seen as a deterrent to academic, social, ethical, artistic, or athletic growth. They were and are a data-driven school seeing their students thrive. This is a happy place to be, with teachers now trying to transfer to this school. What separates this school from many other schools is that they truly utilize comprehensive data, study the data, and base their plans and actions on their data. Secondly, they approach their efforts with a systems approach, understanding that all the dimensions influence and impact the data contained within the other dimensions as well as academic achievement.

paradox (pär'ə-dōks') *n.* **Definition:** A statement contrary to received opinion.

Educators are riddled daily with paradoxes that leave many perplexed. As mentioned in the Preface and Introduction, one such paradox is that “student achievement scores are the center of teacher accountability.” Another paradox that many parents and students wrestle with is, “High achievement test scores are definitive

of academic success.” For many, these are *statements contrary to received opinion*. Many educators wonder how they can be held accountable based solely on achievement scores that barely measure or reflect all they do in their differentiated classrooms. Many parents and students wonder how well achievement tests represent all that has been learned or accomplished. Many wonder if a continued heavy focus on achieving Adequate Yearly Progress (AYP), measured mainly by student achievement test scores that most students are *not* held accountable for, can help inspire and guide educators to inspire and guide students. As parents, educators, and researchers, we (the authors) know that what takes place in schools and classrooms has an impact that reaches far beyond test scores. We know that educators are the impetus behind the development of our students’ academic success, but we also know the social and ethical abilities that they need to be successful in life.

In other words, as Dr. Spencer Kagan (2010) asks, should we focus on preparing our youth for a life of tests or the test of life? And why does it have to be one or the other? Can’t we work toward both goals? By spending 8 hours a day, 9 months a year, with a child (the majority of their waking hours) are we not going to be doing both by default? One objective of this book is to apply a commonsense approach to unraveling these and many other paradoxes tied to educational leadership and assessment. Unfortunately, when it comes to using data to drive the success of education, common sense is not that “common” anymore.

We have found that the differing perceptions of these paradoxes often rests upon whether educators entered education as a *career*, driven to rid the world of incorrect verb conjugation or to build a movement of standards-based minions capable of memorizing the quadratic equation (“Houston, we have a parabola”), or if they answered a *calling* to be the educator who inspires tomorrow’s citizens to move far beyond being grammatically correct and equation savvy. From what we have experienced, the best educators are individuals who answered the calling and have found a way to teach or lead with passion. They have found career satisfaction and accomplished their professional and personal goals regardless of strict standards, required curricula, and rigid standardized achievement expectations. They are able to make the required standards-based subject material interesting through creative instruction. They have built healthy relationships with students, parents, and colleagues. They are able to find a way to tap into their students’ minds and

motivations to learn and discover what is needed to energize higher-level cognitive processing. They understand that for educational success to occur, we must first know how our students *feel* before we can help them *perform*.

We believe that if you are to be held accountable, you deserve a more fair and effective form of assessment. We want to help you move far beyond one test score and better understand how other data and evidence exists that can help you tap into the perceptions that impact your success. We want to help you develop a more holistic data-driven support system that informs your decision making by focusing on seven dimensions that have a great impact on your success. We want to help you be less reliant on cold accountability statistics that reflect a test score and be more focused on numbers that nurture and guide your success. Statistical sanity is rare in our scholastic world, but we believe that by adding a few common-sense approaches to assessment that will necessitate change on your part, you can achieve academic excellence that prepares our youth for the test of life and a life of tests. So to get started on this journey, let's first start with a reframing exercise.

Derealization

How accurate is our perception of ourselves? Frequently our emotions and the fact that we grow comfortable with our surroundings hold us back from taking an objective look at our existence. The goal of this initial reframing exercise (and this first chapter, for that matter) is to get you to disconnect a bit from your preconceived notions or personal feelings associated with our education system in order to consider a different and possibly more objective outside perspective. As Bernard Mayer explains, "The art of reframing is to maintain the conflict in all its richness but to help people look at it in a more open-minded and hopeful way" (Mayer, 2000, p. 139).

Derealization is defined as an alteration in the perception or experience of the external world so that it seems strange or unreal (e.g., a world where people may seem unfamiliar or mechanical). Given that many educators have told us they already work within school districts that feel somewhat surrealistic, this should not be that hard for some to accomplish. So if you don't mind, we would like to try to take you into a state of derealization in hopes of helping you envision how assessing education multi-dimensionally can provide a more mutually beneficial perspective (lens) that connects all of the

stakeholders and variables needed to increase achievement, improve attitudes toward education, accomplish school reform, and help our children become more intelligent contributing citizens.

Breathe Deeply and Relax

There are many wonderful movies that have been made about inspiring teachers or principals. *Dead Poets Society*, *To Sir With Love*, *Mona Lisa Smile*, *Blackboard Jungle*, *Mr. Holland's Opus*, *Lean on Me*, *The Great Debaters*, *Dangerous Minds*, *School of Rock* . . . the list goes on. Imagine you are in an empty, dark theater watching a new inspiring movie about education, but in this movie you are the star. You are getting a sneak preview! You are the star teacher or principal who is making miraculous progress in a challenged classroom or troubled school. For a moment, think about what you would want the title of your movie to be. What actor or actress would you want to play your part? Can you imagine the movie playing in front of you? Can you close your eyes and see it on the screen? Close your eyes for 30 seconds and imagine watching your movie on the big screen.

Now imagine you are in the projection room in the back row of the empty, dark theater watching yourself watch the movie about yourself. Close your eyes for another 30 seconds and try to move yourself out of your body (so to speak) so that you are several rows above, looking at yourself. Does it look like you are enjoying the movie? If the movie you are visualizing is in color, then imagine it switching to black and white. Now visualize the movie in slow motion for a more dramatic effect. Don't forget you are in the very back of the empty, dark theater, above the seats, watching yourself watch your movie in black and white and in slow motion. Can you imagine a theme song playing or hear any dialogue or conversations? If so, turn down the volume in your mind. When you have the movie in black and white and the volume is low, imagine the movie now moving in fast-forward mode. Your movie is flying by in front of you now, the climax of the movie is taking place, and your success is being celebrated. Is your character smiling? Does it feel good to be an inspiring educator on the big screen? Are you using data?

The data question was intended to make you laugh; but how did this exercise feel? Have you ever dreamed of such a movie while sitting on your couch late at night with a box of tissues and chocolates next to you while watching a rerun of one of these inspiring movies? We all deserve a chance to dream a little dream. To us, all educators deserve to pursue such dreams.

Now for Something Completely Different

Here is where the next stage of derealization begins. This second stage is where things are meant to become a little more strange, mechanical, and maybe even uncomfortable. It is an exercise we call O-PIT; the Oxymoronic-Paradox Identification Test.

Oxymoronic-Paradox Identification Test

Once again close your eyes and try imagining your movie. Revisit that part where the students are celebrating your success. Now imagine that your movie stops abruptly, like when a reel-to-reel projector mal-functions, and that as the movie begins again, a different black-and-white silent movie starts to play. This new black-and-white footage at first seems to be one of those old-fashioned black-and-white films, but, strangely enough, it is not a movie. Instead, it is a recruitment commercial, and the following scrolling text begins rolling up from the bottom of the screen like in the Star Wars movies. The scrolling text is still in fast-forward mode, so read quickly (in your best radio announcer voice) for maximum effect. But for this exercise, see if you can identify (circle, highlight, or underline) any oxymorons (contradictory phrases) or educational paradoxes in the recruitment commercial as you read.

Welcome to the Business of Education!

Are you ready to become one of the lucky and respected 3,000,000 people who work for one of the most stable, oldest, and largest organizations in America?

Opportunity is knocking because 41–50% of our new employees leave our organization within 3 to 5 years of starting! If you are highly qualified and want to pursue a fulfilling career in education at our national corporate headquarters located in Washington, D.C., one of the 51 additional corporate offices in all our nation's capital cities, one of the 5,000 local management offices located in nearly every town or county from coast to coast, or in one of our more than 100,000 satellite service centers, we probably have a position available tomorrow.

That is, of course, if we can find the money to give you a competitive low wage.

Each of our 5,000 local management offices, which we refer to as school districts, are fully capable of managing 7 to 500 of the 100,000 satellite service center locations. These satellite service center locations, which we call schools, are responsible for providing essential community services to more than 97 million children and parents in accordance with strict common education standards created uniquely different by each of the 51 corporate offices, which we call State Departments of

Education. To strengthen our efforts to achieve excellence, additional requirements come annually from our national corporate headquarters, which we call the U.S. Department of Education. To manage and constantly monitor the accountability of this massive organization and to document whether these standards and expectations are being followed and achieved, our well-organized state corporate offices require the heavily staffed local management offices to provide comprehensive reports on the performance of our satellite service locations. After our state corporate offices thoroughly review the reports, they typically issue new annual mandates and expectations to our local management offices, who effectively communicate these expectations to satellite service centers.

With such an organizational hierarchy in place, it would appear to a business analyst that our organization's national corporate headquarters follows the successful system of hierarchical management (where the corporate headquarters is actually in charge) that have made our largest global corporations dominant forces in society. But this is not the case in the Business of Education. Instead, *you* are in charge; and you are responsible for your own success or failure to meet our strict standards, requirements, and accountability expectations. Our goal of constantly increasing expectations for high achievement is what makes us successful.

[Press Pause]

So what do you think? Does this sound like a great, supportive organization that you would like to join? Did it sound unfamiliar or mechanical? Did it sound surreal, strange, or unreal? Or is it just the opposite: all too real? How many oxymorons did you identify? How many paradoxes did you identify? How many things just seemed contradictory? Did this recruitment commercial put a little damper on the movie about your inspiring career and make you forget about your dream? Well, wait one minute, because it's not over yet! Here's some more. Please keep reading quickly with your radio voice and continue identifying the oxymorons and educational paradoxes; especially those related to educational assessment.

Management Opportunities Galore!

In addition to the effective top-down organizational communication tactics used and our strategic plans that rarely require us to bother our employees for feedback or insights related to the customers (students, parents, and community members) with whom satellite service center location employees interact daily, we also are very open-minded when it comes to hiring managers (whom we call principals). In decades past, we normally only hired managers who had business management

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degrees or experience, or who had served for many years as assistant managers (which we call assistant or vice principals). But today we hire a significant percentage of qualified managers with a minimal amount of management experience or preparedness. The new managers may be deficient in the skills required to handle the uniquely personal concerns and needs of the employees and customers who do not always behave rationally; but these new managers have great intentions, so we put all of our faith in them!

We stand behind our managers for at least 2 to 3 years. To ensure their success we give them on-the-job training, modernized efficient operating budgets, a streamlined support staff and organizational infrastructure, and 9.5 months to accomplish that which most corporations take 12 months to achieve. It is this type of support that gives our managers the autonomy and control they need to achieve adequate yearly progress.

With such a short time frame and so many responsibilities, our managers need only a few minutes a year to support and assess teachers (who are largely responsible for the success of the customers) by providing a thorough drive-by evaluation of their performance. As a result, teachers who in many cases are rarely observed or assessed while working with customers are also given full autonomy, control over teaching the required curriculum, one of the best vacation packages available, and allowed to work for some of the lowest salaries among college graduates. As to why 41% to 50% of the satellite service centers' teachers leave the profession within 3 to 5 years due to feeling undersupported, underpaid, and unappreciated, we are not sure.

But regardless of unavoidable staff turnover or other little challenges such as the special needs of customers skyrocketing and needed resources dwindling away due to annual budget cuts and rising costs (also out of our control), we only expect our managers to make an adequate amount of yearly progress. And to simplify the assessment of this adequate yearly progress, we only ask for one performance measure. And that is the performance of our customers (students), whom the satellite service location often has no role in recruiting or selecting. This performance measure is based upon a test score intended to measure the customer's subject knowledge gained at the satellite service locations. Additionally, instead of measuring from year to year (longitudinally) if the student is gaining knowledge (i.e., measuring if the teacher helped the student improve), we do a fairer and simpler cross-sectional measure of the students the teacher has the next year to see if they are smarter than the students from the year before. But if this goal—to annually increase the level of highly proficient customer performance—is unachievable due to an overwhelming number of variables nearly impossible to control for (for example, confounding variables such as special needs, low SES, and normal distribution of intelligence), our national corporate headquarters allows each state to change the performance measure test regularly if they find that the customers are not performing as well as expected.

As a result, nearly every state's corporate offices use a different measure of success to measure the same goal. And since the differing tests with questionable construct and convergent validity (do they actually measure what they say they measure?) have changed over the years, it is hard to say whether the schools have actually made the improvement that our national or state organizations set out to achieve. But this is not important, because the teachers and principals we hire to be responsible for the test scores that serve as the sole indicator whether they have done their jobs effectively, are the noblest workers in America!

Finding Comfort in Numbers

For some educators, this exercise produces similar results to what they have experienced in their careers. They either laugh at the irony to keep their sanity, become angry at the innuendo, or grow sad and disillusioned by this reality. By having to focus on the many paradoxes and oxymorons, the business of education has distracted them from the dream, calling, or career they set out to pursue. It has taken the wind out of too many sails and the luster out of too many dreams. The acronym O-PIT is fitting because many educators feel like they are in a pit of oxymoronic and paradoxical bureaucracy *and need help in order to be able to see through the layers of red tape and recognize how surreal the expectations have become*. In the more than 40 school districts with which we have worked over the past several years, data we collected show, and our conversations confirm, that unfortunately a large percentage of educators (young and not-so young) are growing very disenchanted with the field of education. Many of our best educators have left for the business sector or retired early. For too many, their hands and feet have been tied (slow-motion), what was once a colorful existence has turned to black and white, their voices have been muted, and in order to make it to the magic retirement age they have pressed fast-forward mode (aka autodrive) with little hope of experiencing a climactic ending in which their colleagues and students celebrate their success. O-PIT is an exercise we like to have educators complete so they can take a step back to try to get a look from the outside in and begin to open their senses to how there might be comfort in numbers that move us beyond one questionable test score. For some of you (at the least) it probably got your imagination moving or your blood pumping.

For some of you, this reframing exercise might have made you a little irritated or increased your anxiety. You might have been insulted

that the ad suggested that some of our principals are underqualified or ill-prepared. You might have been appalled that we suggested that administrative offices are not doing a good job communicating. Some might be setting the book down now and writing their letters of resignation. We hope not, because there is good news to follow. But we apologize if this did increase your anxiety or insult you, because we did this on purpose. We did this on purpose, however, because educators are some of the noblest and most dedicated workers in America—even loyal to a fault.

Because we are a somewhat divided country when it comes to the goals of our education, some agree with the existing system and are loyal committed educators who will follow all the rules, while some are at the other end of the spectrum, longing for change. We have tried to make this exercise a little discomfoting because, in order to get others to listen, we must often make them a little irritated. There is research that shows that when low to mild anxiety is constantly experienced, the learning process is enhanced (Ormrod, 2006a). Anxiety makes us think. So given that we are trying to share with you how to use data more effectively in education (often not an interesting topic or popular endeavor) and you or some of your colleagues might not want to admit that something is wrong with the existing model, we do this to reframe and start the debate, a rich debate that we hope maintains “the conflict in all its richness but [helps] people look at it in a more open-minded and hopeful way” (Mayer, 2000, p. 139). As Niels Bohr once said “How wonderful that we have met with a paradox. Now we have some hope of making progress.”

Investing in Education

Assuming you are a stock investor or business analyst, would you buy stock in the recruitment commercial’s Business of Education organization even in positive economic times? Most savvy investors would probably not. Would you be willing to work for a corporation that offers little support or financial incentives for its employees? Would you, as a skilled educator, be willing to take a management role in an organization that rarely if ever provides its managers with the data needed to fully audit and analyze the strengths and challenges of the efforts and services being delivered? Would you, as an educator, be willing to work for an organization that rarely considers other factors that indicate you are doing a good job? For most educators, the answer is, thankfully, *yes!*

The answer is yes because most people working in the education field are not doing it for money, but for much more altruistic motives. Most educators realize that high pay and high-stakes test scores are not the true measure of the rewards or success that make your job satisfying and life-defining. Most *good* educators know that there are many more meaningful ways to measure success and progress. Unfortunately, only a small percentage are taking advantage of using the other statistical performance or “value-added” management measures available that could show how well the organizations are working, how much adequate yearly progress the organizations truly are making with customers (that is, students and parents) as well as employees, and how a wide array of efforts beyond preparing for the tests (for example, using curricula, products, and programs) are contributing to the success and performance of the students. In other words, though we are being challenged to become data-driven educators, it would appear that very few are actually able or willing to do so.

Though focusing on the achievement of a customer is an admirable goal, can you think of any other thriving businesses that measure success solely on how much knowledge their customers possess? What if Weight Watchers based their success solely on how many customers learned how to diet and exercise correctly, and yearly dividends to stockholders rested solely upon how many pounds were lost (or unfortunately regained) by their customers? What if Microsoft’s dividend yield was reliant exclusively upon whether their Windows users actually knew how to use their newest software proficiently? Most corporations taking this approach would not have happy investors.

Of course, education is a government-based nonprofit organization that does not necessarily *worry* about profit margins, unlike most corporations. But what if the Department of Justice was assessed using a unidimensional statistic, one number? What if the Department of Justice’s Federal Bureau of Prisons performance was judged and funding determined by only considering Adequate Yearly Progress (AYP) based upon the number of convicts they turned into *proficient* model citizens? What if the Department of Agriculture’s performance was assessed using only the amount of crops successfully harvested or AYP on reducing the obesity level of children eating the school lunches they oversee? Just as with the masses of educators, parents, and students who are pleading for the high-stakes testing obsession to end, most folks presented with such unrealistic and shortsighted ways to measure success would scream even louder. Think about it!

What do you think the public's reaction would be if the government stated they would not give funding to prisons that did not make 100% of their prisoners proficient model citizens within the next 10 years? What do you think the wardens and guards would need to do if recidivism is around 50%?

We all know that NCLB set out with the commendable goal of shrinking the achievement gap between blacks and whites and mandated that schools demonstrate AYP, put state standards in place, and assess such efforts through testing; but at what point did we lose sight of other government-led efforts to reform schools that were based on and recommended a broader use of meaningful variables, statistics, and practices? At what point did we decide to set aside the abundance of data we have at our disposal to more comprehensively measure academic success (e.g., increased attendance, graduation rates, college placement, Advanced Placement and International Baccalaureate assessments, or completion of vocational and technical school proficiencies) and agree to be graded on just one mark of excellence or failure? Doesn't the fact that nearly 30% of our students are not graduating from high school raise huge questions about our level of achievement and success?

The Courtship of Eddie and Eva

So who are Eddie and Eva? Believe it or not, you know both of them. But don't worry; there is no reason to run out to the mall for a present, because the wedding is not yet final. Eddie's full name is Ed Ucation and Eva's full name is Eva Luation. Yes we are talking about the courtship of education and evaluation, and we want to discuss now how this love-hate relationship began. Have you ever wondered when and why this focus on educational evaluation or assessment began? In other words, how did we get here?

Early output accountability measures began in 1895 with the introduction of spelling tests and written exams as a means to measure the quality of Ed Ucation in schools (Wynne, 1972). The Elementary and Secondary Education Act (ESEA) of 1965 required funded programs to conduct Eva Luations that used basic skills tests as the measurement of student and program success (Popham, 2001). This brought about the idea that programs and school performance could be measured or evaluated by the performance of students on standardized testing measures, and by the 1980s many states had developed statewide testing programs, which for all practical purposes were utilized in an earlier accountability system.

On April 26, 1983, the problem of low-performing schools was reintroduced to public attention by the Reagan administration's release of a report on the status of America's schools, *A Nation at Risk*. This criticism of the public education system, which basically blamed teachers and schools for the decline in student performance, was prepared by a prestigious committee, given the endorsement of Secretary of Education William Bennett, and warned that this decline would be the demise of America's industrial clout (Berliner & Biddle, 1995). With the idea accepted that America's future business prominence would only be as strong as the student test scores being produced in America's public schools, the movement toward a competitive testing environment and mandates for evaluation gained great momentum. It was this shift to a focus on testing that challenged Education to embrace Education's higher standards and a system of accountability. Similar to many relationships, Ed and Eva have had their ups and downs, and the past ten years have been a real test of love.

During the past decade, we have all heard the words *rigorous assessment* or *adequate yearly progress* ad nauseum. Yet instead of screaming adequately enough up a corporate ladder that does not often practice the doctrine of the presidential candidate Ross Perot ("I'm all ears!"), we immediately embraced a number to parsimoniously "prove" that our efforts were worthy. Those of us in the numbers business, and a growing number of educators, have learned that one number rarely provides a sufficiently clear and valid picture to *prove* anything. Indeed, rarely does one number give enough information to *improve* anything! In fact, we strive to never use the p-word—prove. As a result, some in the education field are now taking a step back and asking, "How can we best demonstrate proven, comprehensive school reform?" And the answer, as the U.S. Department of Education stated in 1998 (and we believe to be true), will come from "rigorous, systemic, and objective procedures [needed] to obtain valid knowledge." The question we ask is how can we get educators to focus on rigorous, systemic, objective procedures when they are reminded daily that their job rests upon one not-so-rigorous, nonsystemic, subjective outcome measure: the tests?

As Justin Snider, a research fellow at Columbia University's Hechinger Institute on Education and the Media, stated in *Education Week*,

The accountability measures of the federal No Child Left Behind Act, for instance, are based on cross-sectional rather than longitudinal data. In layman's terms, this means that we end up comparing how one set of 7th graders performs in a

given year with how a different set of 7th graders performs the following year. Experts in data analysis agree that this is a little more than problematic. A better system—one based on longitudinal data—would instead compare how the same set of students performs year after year, thereby tracking change over time. But these are not the data we currently collect, in large part because doing so is difficult and expensive. (Snider, 2010)

Although we agree with Snider’s synopsis of the shortcomings of the present model, we do not agree that the data needed to improve our efforts are not already being collected, and we do not agree that such data is difficult or expensive to organize or analyze. If the development process of the next set of achievement tests could benefit greatly by developing achievement tests that can actually be studied longitudinally on the same students, then it should be done, because anything worth doing is worth doing right. If states are giving \$250 million contracts to testing companies to do it wrong, it would seem possible they could use a few million dollars to do a little research and development in order to do it right. If we are spending millions to do it wrong year after year, then we are just wasting valuable education dollars. But it is not sufficient to just keep changing the tests in hopes of making an improvement. We must also utilize other data and evidence that is readily available. We must use data that tells us what we need to do to improve scores. We need a more holistic approach to accountability that provides assessments to help develop better students and educators.

Expanding the View

The February 2003 edition of *Educational Leadership* focused on the theme “Using Data to Improve Student Achievement.” The articles in this edition, written by some of our nation’s best educational researchers and practitioners (Marzano, Schmoker, and Slavin), comprehensively and clearly illustrated how there are many meaningful dimensions of good education that can be assessed. Yet many of our nation’s best administrators have had their hands tied since that publication and have had to focus strictly on *meeting AYP*. Teachers, principals, superintendents, and school boards are far too often being forced to make decisions based on intuition, incomplete data, or skewed public opinion. There is a limited amount of information that is both empirically reliable (the same factor is measured consistently) and valid (that which is claimed to be measured is actually measured) that can assist

a teacher, principal, or school district in meeting AYP and other valuable achievement norms. Currently, nonvalidated tests and curriculum-based formative assessments are often being utilized at levels from the district office to the classroom. When the job security of many of those involved rests strictly upon one number, it is not surprising to find that many of the sound suggestions made by the U.S. Department of Education in 1998, the experts published in the 2003 *Educational Leadership* journal, and the decades of research supporting a multi-dimensional approach to data-driven education have subsequently fallen on deaf ears and that we have struggled to reach this single number that represents achievement. While moving forward in time, we have gone backwards in progress by not considering other assessments that can contribute to increasing that magic achievement proficiency number as well as broadening our conceptions of education's impact on our stakeholders.

We have the data on hand to better inform our practices. We could and should collect even more data, or at least look at what we have, what we know, and what we do through a new, more meaningful, and more useful lens. We need to use data that is relevant to succeeding at our goals and make that data understandable to educational stakeholders. It would appear that part of the resistance to adopting the data-driven education model being proposed is because a large number of educators see such a process as cold and based on statistics rather than on real people. This makes great sense, because who would want the fate of their job or the quality of their child's education being dictated or determined by a simple number? Most of us want to be treated like real people with feelings and daily challenges. We want our children to be considered a priority and not just another number or test score.

Yet another problem, according to research, is that many school principals lack the necessary skills to make decisions based on data (Striefer, 2000). Beyond understanding test scores, educators also need to understand growth models and how to measure goals. There is research in the field that strongly supports placing a focus on the building of data capacity for principals and teachers. According to Glickman's work with successful schools, these schools assess and refine their own practices on the basis of an ongoing process of active research, both external and involving the school's own continual collection and analysis of student data. Glickman's research included 20 schools that showed an increase in achievement over a period of 10–30 years. In conducting the research, one of the noticeable commonalities in all of the schools was that there was an emphasis placed

on using a variety of data and information to make decisions for improvement in the school programs (Glickman, 2002, p. 43).

In June 2009, the U.S. Department of Education released a request for proposals to have colleges of education apply for teacher quality partnership grants to update their teacher preparation programs to be more data-driven. These efforts to improve teacher preparation programs are due to the fact that “many if not most colleges of education are doing a mediocre job of preparing teachers,” stated Secretary Duncan. And we agree that in some cases college professors should bear part of the blame for this shortcoming. Many educators have not been provided with the statistical schema one needs to be successful in data-driven thinking or education. Also, unfortunately, often due to standards and assessment requirements from states and federal departments, educators are forced to focus their limited time more heavily on data related to student behavior and standards-based curricula selected to increase achievement scores. With a limited amount of time historically given to educators for planning periods, an even lesser amount of time to focus on data, and only a few district offices providing schools with all of the data they collect in a report form that one can actually understand, educators have been forced to focus on the few measures they are given that often only tell where students are at (summative outcome data) and fall short of providing data in an understandable fashion to get all stakeholders to where they want to go (process and formative data).

Data-driven decision making is a process of inquiry, analysis, and decision-making inferences gained from the interplay of *process*, *formative*, and *summative* data.

Process data relates to the way school reform or instruction takes place and the processes that occur as leaders lead, teachers teach, and learners learn. Included in the process data is the assessment of the routine or innovative procedural and instructional focuses that take place during the school year. An accurate analysis of the infusion and effectiveness of interventions, processes, and programs put in place to enhance leading, teaching, and learning at the school site can produce valuable data for guiding improvement.

Formative data (sometimes referred to as input data) can consist of data about student, staff, and community perceptions and opinions. It can also be gathered from ongoing testing scores, similar to the approach taken by some reading curricula. Formative data can be garnered from meeting minutes and leadership or teacher effectiveness data collected from groups of teachers or students at the school. These data can guide our short-term (proximal) goals.

Summative data (outcome measures) tell what results have been obtained. Data can include statewide testing data as well as data collected for or by principals or teachers in the school or classroom; the latter may better reflect the climate, teaching, learning, and achievement at the school. These data could more accurately reflect the long-term (distal) goals that can be achieved at many levels.

The good news is that educators have some of the rigorous, systemic, and objective data and data collection procedures needed to guide and validate one's efforts currently available to them. We also know that some want to take a more data-driven approach and just need guidance and a framework to accomplish that goal. Still others need a new lens or need to adjust the one they have to get beyond the tunnel vision and anxiety (often associated with fear of failure) that currently clouds or hinders their judgment and their educational assessment and management efforts. Many just need to get beyond the fear that more data means more accountability based on numbers and adopt a way of data-driven thinking that provides a more holistic approach to focusing on the kinds of data that actually drive education. We believe that approaching education multi-dimensionally provides such a lens to better accomplish a broader spectrum of goals for educating our nation's youth. And as John Carlos Miller, the principal in the opening story, has documented and shared, the Multi-Dimensional Education process allowed him to see what needed to be fixed, to direct his faculty's thinking to factors beyond achievement tests, and to experience double-digit increases in achievement test scores.

So What Is Multi-Dimensional Education?

Quite simply, it is a lens for you to study what you do that directs your focus to seven dimensions associated with highly effective schools. It is a lens that is focused on a multi-dimensional framework rather than on a single dimension, achievement. Multi-Dimensional Education provides a process and framework to organize data so that it can be put to work for you in a meaningful and productive way. To some extent, many already approach education multi-dimensionally. Similar to an educational researcher who collects data on numerous variables, you collect data from many points to document your accountability at the local level. The questions to be asked are whether you are considering the right data points, collecting them correctly to measure the most meaningful dimensions relevant to education

improvement (at the school level), connecting these data points to achievement, and using data effectively to improve.

Figure 1.2, the Multi-Dimensional Education Process Model, illustrates the seven dimensions we will be discussing in depth and how these dimensions of formative data can organize existing process and summative data such as attendance, office referrals, suspensions, grades, and graduation rates. We have also provided an abbreviated version of our Multi-Dimensional Assessment in the Appendix. If used correctly, this lens for redirecting your vision can have a great impact on the learning and teaching climate of the school and perhaps the community. This model for data-driven education has allowed us to provide a year-to-year comparison for hundreds of schools on the most meaningful dimensions that impact school reform. But, as we will explain in Chapter 2, and as the gears in the head in the illustration at the end of the Preface suggest (see page xvi), this model is meant to be used *systemically*. Systemic is different than systematic. *Systematic* implies we do one step at a time, where *systemic* is intended to focus on many parts at one time in order to get all parts of the “engine” working together. We would like for you to first look at this dimensional model as a lens to just consider and examine the many different parts or variables reflective of what exists in your school(s). In the chapters to follow, however, our goal is help you to see how these seven dimensions work systemically to empower your data-driven thinking. We will also explain how to use new and existing qualitative artifacts and evidence, as well as multiple quantitative scales or measures, to evaluate each dimension. And in Part II of the book we will show how these dimensions relate to and empower the 4Cs.

We developed the Multi-Dimensional Education Process Model shown in Figure 1.2 based on the research to be covered in Chapter 2, and the federally funded studies that we evaluated or directed in more than 100 randomly assigned schools over a 6-year period. In the schools we studied that showed superior performance, we witnessed how they consistently excelled over their less proficient neighbors in one or more of the seven dimensions we assessed. The following is a brief description of the seven dimensions of Multi-Dimensional Education.

Dimension 1: Community Engagement

According to a host of educational visionaries (e.g., Dewey, Piaget, Vygotsky), without the help of parents and positive interpersonal

Figure 1.2 The Multi-Dimensional Education Process Model

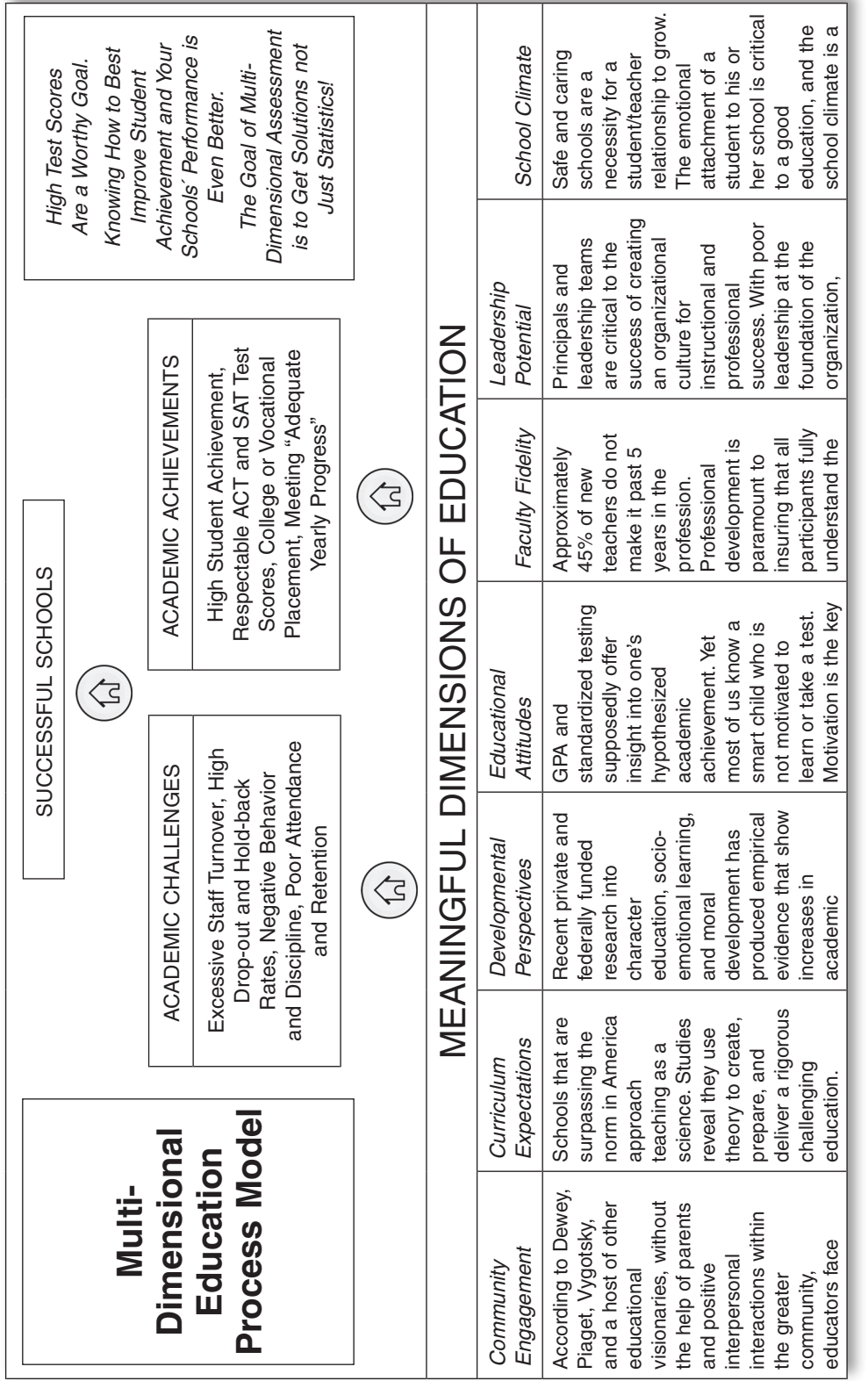


Figure 1.2 (Continued)

MEANINGFUL DIMENSIONS OF EDUCATION						
<i>Community Engagement</i>	<i>Curriculum Expectations</i>	<i>Developmental Perspectives</i>	<i>Educational Attitudes</i>	<i>Faculty Fidelity</i>	<i>Leadership Potential</i>	<i>School Climate</i>
increased challenges to achieving miracles in youth development and instructional success. What is the level of community engagement being practiced in your schools? Is it contributing to the educational success or unfortunate failures?	They use technology and enthusiasm to share such knowledge. How do the students and educators feel about your curriculum? Is your curriculum meaningful and challenging? Is the instruction meeting the many expectations?	achievement when schools focus simultaneously on academics and developing caring citizens. Are your schools focusing on the social, emotional, and moral development of students and educators? Are you practicing character right or light?	to learning, and improving educational attitudes is the answer to increasing motivation. How about considering how the student feels toward school or testing? How about seeking more information as to how one might build an intrinsic drive to learn?	basics to instructional success and continuous improvement. More thorough understanding is obtained through ongoing instructional support, and coaching. Are your teachers supported? How well are they teaching? How well are they respected?	success will rarely ever materialize. Assessing organizational management practices and communication is essential for academic achievement. How do the teachers feel about school leadership? How do the students feel about leadership?	major impact on this attachment and academic achievement. How do students, parents, and educators feel when they walk through the school doors? Do students, parents, and educators feel safe? Do your schools offer a positive learning environment?
This dimension assesses factors such as: <ul style="list-style-type: none"> - Interpersonal Community Engagement - Parent Involvement - Service to Community - Community Support 	This dimension assesses factors such as: <ul style="list-style-type: none"> - Educational Rigor - Instructional Creativity - Academic Support - Differentiated Effectiveness 	This dimension assesses factors such as: <ul style="list-style-type: none"> - Student Success Traits - School Misconduct - Compassion for Others - Behavior Issues - Discipline Policies 	This dimension assesses factors such as: <ul style="list-style-type: none"> - Motivation to Learn - Academic Empowerment - Student Work-Ethic - Feelings Toward School 	This dimension assesses factors such as: <ul style="list-style-type: none"> - Teacher Trust - Teacher Satisfaction - Teacher Efficacy - Organizational Support 	This dimension assesses factors such as: <ul style="list-style-type: none"> - Leadership Satisfaction - Leadership Styles - Communication and Vision 	This dimension assesses factors such as: <ul style="list-style-type: none"> - School Climate - Student Relationships - School Liking - School Loneliness - Bonding to School

interactions within the greater community, educators face increased challenges to achieving visions of positive youth development and instructional success. As Chapter 7 will cover in much more depth, redefining and increasing parental involvement holds some of the greatest potential to unlock your achievement. How involved are your students' parents in their education and in your efforts? What is the level of community engagement being practiced in your schools? Is it contributing to educational success or to failure? When we go into schools and assess this dimension, we begin by looking at factors such as *interpersonal community engagement* (students' level of community communication), *parent involvement* (parents' involvement in school and community), and *service to community* (students' level of service to community). As we will explain in the chapters to follow, you can use the Multi-Dimensional Assessment survey we provide in the Appendix to measure all of the dimensions; you can also collect and organize other data, evidence, and artifacts to assess this dimension.

Dimension 2: Curriculum Expectations

Schools that are surpassing the norm often approach teaching more as a science than an art. They use theory-based practices to create, prepare, and deliver a rigorous and challenging education. Although in decades past teaching might have been viewed as an art, today many of our most outstanding educators use research, technology, and assessment to complement their creativity and enthusiasm in sharing knowledge. There is an abundance of research in this book that will show that it is not necessarily the curriculum used that increases achievement and performance; often the teachers in the classroom in charge of sharing the curriculum and adults in the community hold the greatest potential for bringing about improvement. How do the students and educators feel about your curriculum? Is your curriculum being shared in a meaningful and challenging way? Is instruction meeting the many expectations? When we go into schools and assess this dimension, we begin by looking at factors such as: *instructional curriculum* (perceptions of the instruction and lessons received), *instructional creativity* (perceptions of how creative your staff is in the classroom), *academic support* (perceived support given to students), and *educational rigor* (perceived demandingness of the coursework). We will explain this dimension more thoroughly in the chapters to follow, especially Chapter 5.

Dimension 3: Developmental Perspectives

Recent private and federally funded prosocial education research into such areas as social-emotional learning, service learning, and character education has produced empirical evidence of increases in academic achievement when schools focus simultaneously on academics and on developing caring citizens. Our research has identified significant relationships that begin to show how students view their character has a direct positive relationship to their achievement (Corrigan, Grove, Vincent, Chapman & Walls, 2007). As we teach our students in our learning theory classes that study such developmental models such as Piaget's, often a delay in learning can be easily diagnosed or connected to a delay in development. They are often one and the same, and in order to help our students learn we must first help them progress in development. Are your schools focusing on the social, emotional, and moral development that enhances cognitive development of both students and educators? Are you practicing character right or light? When we go into schools and assess this dimension, we begin by looking at factors such as: *student success traits* (the level of character understood and exhibited), *school misconduct* (level of student misconduct in school), *compassion for others* (how much a student thinks and cares about others), and *good deeds* (how often a student has helped others). We will explain this dimension more thoroughly in the chapters to follow, especially Chapter 8.

Dimension 4: Educational Attitudes

GPA and standardized testing supposedly offer insight into academic achievement. Yet most of us know a smart child who is not motivated to learn or take tests. Motivation is a key factor in learning (Skinner, 1969) that typically accounts for a significant percentage of achievement (10+%) (Uguroglu & Walberh, 1979). Also, one's feelings (often referred to in research as affect) about the subject matter or schoolwork play a key role and account for an equally significant percentage of academic achievement. As a result, improving educational attitudes is often the answer to improving learning and increasing test scores. In reality, if a student is not held accountable for his or her test scores and the scores do not have any impact on their GPA, moving to the next grade, or graduating, why would they try hard on the tests? One answer is that they actually feel intrinsically motivated and empowered to do well and want to

show how smart they have become. Another possible reason for trying harder is that students know that the teacher and the school are held accountable for their test scores, and they like you, the educator (as well as the school), and want to do well to help you. How about considering the students' feelings toward school or testing? How about seeking more information as to how one might build an intrinsic drive to learn or achieve? When we go into schools and assess this dimension we begin by looking at factors such as *motivation to learn* (how motivated a student is to learn), *personal academic empowerment* (how empowered a student feels), *student work ethic* (how hard a student works on academics), and *feelings for school* (how a student feels about school).

Dimension 5: Faculty Fidelity

As we shared earlier in the Preface and the Business of Education derealization exercise, more than a third of new teachers leave the profession within 3 years, and half of new hires are replaced every 5 years (National Commission on Teaching and America's Future, 2008). Most likely, an equal number of "seasoned" teachers are in need of rejuvenation. Professional development is paramount to insuring that all participants fully understand the basics of instructional success and continuous improvement. But what sort of professional development should you bring into the school? Instead of taking an informal poll to determine what kind of professional development your educators want to learn more about, or hiring a motivational speaker to come in and talk about a random topic that only some of the educators are interested in or moved by, what about using data to determine what kind of professional development your educators actually need? This is what we call data-driven professional development. This dimension can get you started on the road to teacher evaluation that so many are resisting and that so many need. Our faculties need more instructional support and coaching, and evidence gathered on this dimension can help us pinpoint more accurately where our faculties need improvement. Are your teachers supported? How well are they teaching? How well are they respected or trusted? When we go into schools and assess this dimension we begin by looking at factors such as *teacher trust* (perceptions as to how much a student trusts teachers), *teacher satisfaction* (perceptions of how teachers feel about their work), and *teacher belief in students* (perceptions as to how much teachers believe in students).

Dimension 6: Leadership Potential

Principals and leadership teams are critical to the success of creating an organizational culture for instructional and professional success. That is why the Leadership Potential gear is in the center of our seven-dimension gear model. With poor leadership at the foundation of the organization, success and improvement will rarely materialize. And just as it is important for teachers to be evaluated and receive feedback, assessing organizational management practices and communication is essential for academic achievement. How do the teachers feel about the leadership teams? How do the children feel about the leadership teams? How do your parents feel about the leadership? As Fortune 500 companies learned long ago, knowing how your stakeholders or customers feel is paramount to offering the best quality service. When we go into schools and assess this dimension, we begin by looking at factors such as *leadership satisfaction* (how satisfied the stakeholders are with school leadership), *principal trust* (how much a student trusts principals), *leadership communication* (the level of communication provided by leadership), and *leadership shared mission and vision* (the connectedness of shared mission and vision between stakeholders).

Dimension 7: School Climate

Safe and caring schools are a necessity for a student-teacher relationship to grow. The emotional attachment of a student to his or her school is critical to a good education; the school climate has a major impact on this attachment and has a strong indirect relationship to academic achievement (McNeely, Nonnemaker, & Blum, 2002; Osterman, 2000). Furthermore, a good school climate has an impact on your success in retaining your best educators (Wynn, Carboni, & Patal, 2007). How do students, parents, and educators feel when they walk through the school doors? Do they feel safe? Does your school offer a positive learning environment? When we go into schools and assess this dimension we begin by looking at factors such as *school climate* (the school climate or environment perceived), *student relationships* (the quality of relationships between your students), *school liking* (how much students like their school), and *school isolation* (to what extent students feel isolated within the school). As we will explain in the chapters to follow (especially Chapter 7), you can use the survey we provide in the Appendix to measure this dimension as well; you can also collect and organize other data, evidence, and artifacts that exist to further assess this dimension.

Each of these seven dimensions has been shown indirectly or directly to improve aspects of the school experience and achievement. For example, School Climate may not often have a direct impact on achievement itself, but it does impact or drive the dimensions of Educational Attitudes, Curriculum Expectations, and Faculty Fidelity, which often do have a direct impact on achievement. Yet, just as Howard Gardner has found that there are multiple types of intelligences and there is room for more to be discovered, there might be other dimensions you might want to add to this model, or others that we (the authors) might decide to add in the future. Regardless, as Chapter 2 will illustrate, these seven dimensions are the seven dimensions most often associated with highly effective schools. These seven dimensions of data (qualitative and quantitative) are what you need to consider, focus on, and use to determine what you need to do to increase achievement and achieve positive school reform. But what is more important is addressing all of the dimensions together to create the synergy needed to achieve real lasting school reform. It is important that you assess all of these dimensions from the different perspectives of all of your stakeholders. By themselves (e.g., one dimension such as School Climate) or from one point of view (e.g., that of the student), they are limited in their ability to enhance the learning and teaching culture of a school, but together they are a powerful tool. As the model suggests, it is when we consider how these seven dimensions impact, align with, and explain or predict academic achievement and academic challenges that we can achieve greater success.

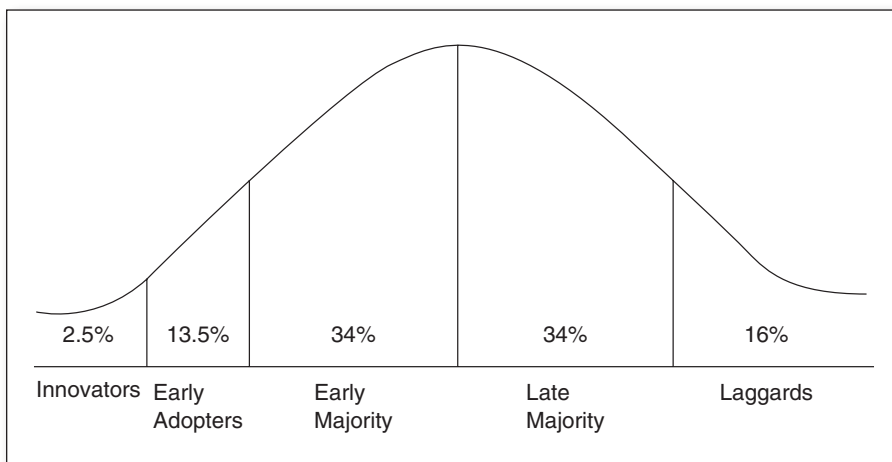
We believe that the majority of school systems can utilize a user-friendly common-sense approach to becoming more data-driven, and would greatly benefit from doing so. This multi-dimensional systemic approach can help you more comprehensively assess the *organizational efforts* taking place, as well as the attitudes and perceptions of our customers (students and parents), employees, and other stakeholders (community members). As Leonardo da Vinci once said, "All our knowledge has its origins in our perceptions." A goal of Multi-Dimensional Education is to provide such perceptual knowledge that offers meaningful and usable evidence to inform systemic practices. These data-driven systemic practices will strategically guide educators in their efforts to provide the essential professional development and systems-based management practices needed to actually achieve increased academic performance and continuous improvement.

Innovators Wanted

Much of our lives has been spent working for or with educational organizations and trying our best to help them make positive change in the services and products they provide. From our experience, we have come to live by a saying that makes good sense when it comes to organizational change: *Some will, some won't. So what.* A classic organizational change model created by Everett Rogers (Rogers & Singhal, 1996) accurately explains how we as individuals are normally distributed (i.e., on a bell curve) when it comes to embracing change. Figure 1.3 highlights how there are a few of us who are *innovators*, a few more who are willing to jump onboard at the start (*early adopters*), twice as many that will become part of the *early majority* to try it, an equal amount that might come on after a little success (*late majority*), and the unfortunate group that is labeled as *laggards* (those that rarely embrace the change proposed).

But before you think we are beating up on the laggards, let us remember that it is often the laggards who have been the dissenting voice in those unhealthy *groupthink* situations that use bullying tactics to pressure people to adopt change. These laggards are sometimes the voices of reason who screamed not to launch the shuttle *Challenger* before its unfortunate demise. It was the laggards that tried to get Ford to stop selling the Pinto in light of gas tanks that exploded upon rear end accidents. Often the laggards are the voice of reason. When it comes to educational change laggards may be actively or silently opposed. Either way they provide “drag” to the

Figure 1.3 The Diffusion of Innovation Model



gears for change. Yet even the apathetic teachers that some might encounter still might be good teachers. And instead of alienating some of our best teachers, we should listen respectfully and consider their concerns.

Rogers's model reminds us that change takes time and not all will adopt change immediately (or sometimes ever). Many of the early majority and the late majority need to see evidence (qualitative or quantitative) that change is taking place and that it is change for the better. But in order for change to start, we need innovators. And in order for change to have a chance to succeed these innovators need early adopters by their side to build momentum. Change in any organization is difficult to achieve. Throw in the role of unions and policies such as tenure, and cloud those waters with a democratic process that is willing to consider or at least listen to all views from the likes of parents who do not always behave rationally, and suddenly your challenges are doubled if not tripled. But many people in the teachers' unions are just looking out for the welfare of those they represent. Many of our tenured teachers who have grown comfortable in old habits and are now fighting change were once incredibly energetic teachers, ready to embrace change in hopes of inspiring more students. And many parents simply want change focused on providing the best for their children. If we are able to show evidence, we can bring more onboard. We can rejuvenate our peers. If we can provide them with evidence that short-term goals have been accomplished, we can get them onboard for long-term goals. But if our long-term goals are unrealistic, the laggards and late majority will rarely ever join us in our efforts to create systemic change.

They call it *normal distribution* for a reason. We are human, and it is normal that we are distributed on a bell curve when it comes to IQ, willingness to change, and many other things. Yet for positive change in education to occur, dedicated innovators are needed. We hope that you are one of those who can lead the way, and that we can help you with the process.

We must emphasize that we are not afraid of academic excellence. We all have children at various ages from pre-K to university, and we expect excellence in their academic efforts. We know that test scores are important. We expect good test scores from our children as well as from the students we teach. But there is much more to educating students and improving a school than relying on a *single* test score or *single* mode of assessment. You deserve a much fairer and more informative growth model that better documents your accountability. Educators need true assessment that

uses rigorous, comprehensive, and, when possible, valid means to determine what we can celebrate and what we must do to improve the outcomes of all stakeholders.

We are on your side. And we have written this book to share how you and other educators can be more successful and satisfied when it comes to the demand for data-driven education or accountability. But the first step is to improve our data-driven thinking.

Debunking the Myths of Education Assessment

There are many myths that complicate the paradoxes of education and education assessment. When such myths are embraced as truths, this magnifies the challenges that must be overcome. So before we end this chapter, let's take a few more minutes to consider a few of the myths this book seeks to debunk.

Myth #1: Educators Need to Become Data-Driven

You probably don't need to become data-driven because you are already data-driven. But as we have attempted to illustrate, many need to change the way they are driven by data. As we have stated, and as a majority of our friends in education agree, the biggest challenge educators face is getting this high-speed chase to increasing achievement scores under control. As the Rand Corporation's report *Making Sense of Data Driven Decision Making (DDDM) in Education* points out:

New state and local test results are adding to the data on student performance that teachers regularly collect via classroom assessments, observations, and assignments. As a result, data are becoming more abundant at the state, district, and school levels—some even suggest that educators are “drowning” in too much data (Celio & Harvey, 2005; Ingram, Louis, & Schroeder, 2004). Along with the increased educator interest in DDDM has come increased attention from the research community to understand the processes and effects of DDDM. Yet there remain many unanswered questions about the interpretation and use of data to inform decisions, and about the ultimate effects of the decisions and resulting actions on student achievement and other educational outcomes. (Marsh, Pane, & Hamilton, 2006, p. 1)

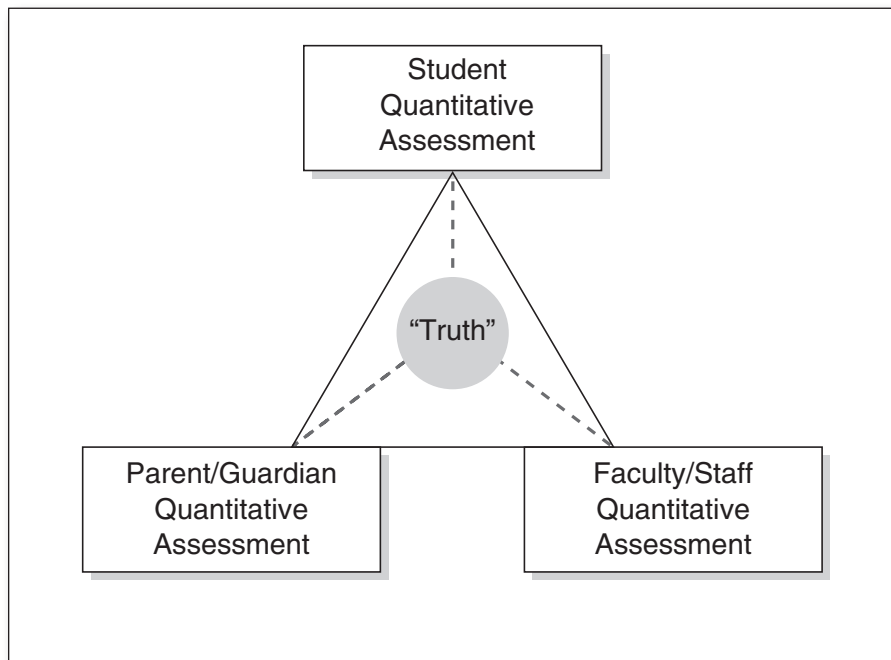
In other words, to improve the approach to data-driven decision making in education, we need to reassess what data are important to our goals and organize them with a process or framework that makes more sense.

Myth #2: Teachers Don't Need to Be Evaluated

As college professors, we are evaluated every semester. Our raises, promotions, and tenure are partially determined by these evaluations. And though we might sometimes dread reading and reviewing our teaching evaluations, they do provide us with a reliable measure as to how our students perceive the instruction we are providing. Also, though there are always a few students who are not happy with a class or a teacher and provide somewhat frank, blunt, honest feedback that might make one a little sad, for those of us who teach well there are always a great many more positive comments. There is normally a silver lining to celebrate and good feedback to build upon.

These evaluations allow us to see how our instruction is perceived and how we as teachers are received. Faculty evaluations allow us to see how well we are communicating with our students. And though assignment grades and tests may provide summative data that show

Figure 1.4 Truth Through Assessment



how much knowledge and understanding is being gained by the student, faculty evaluations provide the formative data we need to determine how best to increase the scores on the summative data. They also provide us with a longitudinal assessment of teachers, so that one can see if improvement is being made or if intervention is needed to help our struggling colleagues.

We have worked with a great number of school districts. The data we provide school districts have at times been questioned by teacher unions and by school-level administrators. But always, after we have had a chance to explain how our multi-dimensional data can and should be used to provide a fairer assessment of teacher effectiveness and the information we need to improve our instruction, the tune changes. In one district we worked in, the teacher's union had complained repeatedly to the administration and school board that they would not stand for this type of assessment of their schools or teachers. After coming to the training on the data eventually collected on their participating schools, the union's representatives left the meeting early stating that they were on their way to the superintendent's office to tell him that they recommend that this data approach be taken in all of their schools. They realized that having many data points to illustrate how well we teach is much fairer and more objective than having a principal drop into the classroom a few times a year to write up a report based on one or two short observations. Principals cannot accurately or fairly assess how well a teacher does based on a 10-to-50-minute scheduled observation once a year.

This is not a new debate. One reason the issue is still discussed is because it holds great promise to improve teaching. But it must be done fairly and correctly. According to Marsh and Roche,

Researchers and practitioners (e.g., Abrami & d'Apollonia, 1991; Cashin & Downey, 1992; Feldman, 1997; Marsh & Roche, 1993) agree that teaching is a complex activity consisting of multiple dimensions (e.g., clarity, teachers' interactions with students, organization, enthusiasm) and that formative-diagnostic evaluations of teachers should reflect this multidimensionality (e.g., a teacher is organized but lacks enthusiasm). (Marsh & Roche, 1997, p. 1187)

As Figure 1.4 suggests, you should also ask students, parents, and peers what they perceive. This is where the truth lies. And whether or not you or the teachers in your building are willing to agree to have these evaluations serve as an accountability measure within your

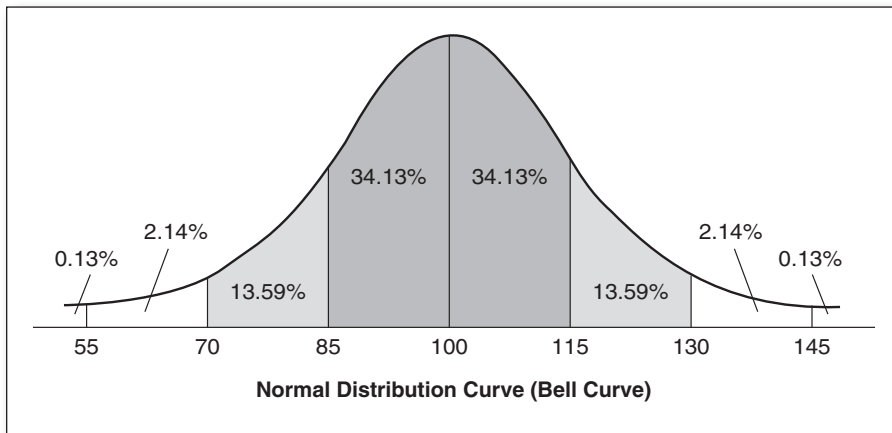
schools, it cannot hurt for teachers to initiate this effort on their own and complete regular self-assessments. Teachers need to be evaluated. We all need feedback to improve.

Myth #3: We Can Achieve 100% Proficiency

Any good teacher knows that a test on which every student gets a 100% is probably not a very accurate assessment. It was probably too easy. Any class where all students leave at the end highly proficient according to assessments given throughout the course, is quite possibly a class that gives numerous proficiency tests that are too easy. Normally, in our classes we have a wide distribution of students with differing abilities and motivation to succeed. But in America, with a heavy reliance upon standardized testing and accountability issues in place due mainly to NCLB, as well as signs of an increased focus on proficiency continuing under the new administration, one might consider the historically controversial debate relating to the normal distribution of the intelligence quotient (IQ) to shine a little common sense on this myth.

To begin this discussion, we must first go back to France and look at why Alfred Binet created the IQ test. In 1905, Binet developed the test to better determine which children were not suited for public schools (Ormrod, 2006a). In other words, the test was *not* created to see how smart a child was. This is just the opposite of the ubiquitous Internet tests for IQ that exist today to see how smart we are compared to our friends. To some, Binet's approach might seem to be backwards, but when you consider the goal of his test, it was quite useful. It was useful because it provided a tool to see who actually needed help. He did not set out to show that everyone was a genius. He did not continue changing the test to allow the test takers to have a greater chance of scoring higher. He continued working to make the test more accurate in truly assessing intelligence and determining which small percentage of students were not suitable for public schools. As Figure 1.5 illustrates, IQ is normally distributed, and theoretically only a very small percentage of students would fall several standard deviations below the average IQ of 100.

The theory that individual differences in intelligence are distributed in accordance with a normal distribution (bell) curve was proposed by Thorndike, a leader during the earlier 1900s in the field of educational measurement (Thorndike, 1927). However, Burt (no relation to Ernie) suggested that a strict focus on the normal distribution of IQ could lead to an underestimation of the number of gifted children

Figure 1.5 Normal Distribution of Intelligence

within a school (Burt, 1963). Regardless of the school of thought to which one subscribes, the mass of research does suggest that there is a wide variability of intelligence across children of like ages. As Figure 1.5 shows us, however, we know that the majority (68%) of us fall within one standard deviation of the average IQ (100). We also know from research that rarely (no matter how much we study) can one increase their IQ by more than 15 points, or one standard deviation (Flynn, 1999). This bell curve shows us, in laymen's terms, that some of us are very smart, some of us are not so smart, and most of us are in the middle or average. If the objective of our standardized achievement test is to measure how intelligent our students are in relation to core subject areas such as mathematical abilities or reading comprehension (which, by the way, are related to doing well on an IQ test), then what makes us think we can change the normal distribution of our students' intelligence? Why are we thinking that we can miraculously pull so many of our students from the low achievement side (on the left) or the middle to the high-achieving side (on the right)? Shouldn't we expect our achievement scores to also follow the bell curve? Therefore, one might question whether a challenging curriculum and intensive instruction in a public setting can actually improve intelligence significantly enough to ultimately lead to test scores reaching 100% proficiency.

One might argue the criterion-referenced test requirement of NCLB is a fairer approach, less dependent on a forced normal distribution, and more reflective of student content mastery. The hope of 100% proficiency even on a test that, theoretically, everyone could pass remains an unobtainable goal in many circumstances; studies show that student scores on criterion-referenced tests can be normally

distributed or can be negatively skewed due to the test being a minimum proficiency test (Fusarelli, 2004). Therefore, because intelligence is one of the strongest predictors of high achievement, even for criterion-referenced tests, IQ and mastery remain difficult to separate.

As Bruce Feirstein once said, "The distance between insanity and genius is measured only by success" (Feirstein & Spottiswoode, 1997). However, if success (100% proficiency) is most likely an unobtainable goal (as science and 10 years of NCLB has shown us) and for that matter possibly insane, we educators will most likely continue to be frustrated with our failure to document successful or adequate yearly progress in achievement. Having proficiency as a goal is admirable, even essential, because as the old saying goes, "If you aim at nothing, you'll hit it every time." The goal of this text, however, is to help you set realistic goals for the data you use to guide and document your success. And if we know that all of our students fall somewhere on the bell curve in Figure 1.5, wouldn't it be a much more realistic goal to take a more personal approach to helping every child improve rather than expecting every child to be 100% proficient?

Still, the questions remain: When test scores increase, to what might that increase be attributed, and what does it represent? Could a significant increase in test scores be due to increasing intelligence, more demanding curricula, creating better test takers, or possibly increasing the motivation to learn within children? Or is it possibly due to "improving" or "updating" the test? The verdict is still out on this conundrum. Yet with teachers, parents, and students expressing concerns about too much high-stakes testing, one might wonder if the not-so-proficient national scores are a reflection of a lack of motivation or an effect of testing burnout. One thing is certain: For many who teach, it is very clear that not all of our students are going to become brain surgeons or rocket scientists. Many are predisposed and nurtured to perform several standard deviations below the genius level, and sometimes below average. Thus, the challenge is to prepare our students, no matter what their level of intelligence, to do the best that they can in the modern-day world of standards-based and norm-referenced education while preparing to become a contributing citizen.

Theoretically, children are more motivated to perform to their highest ability when they are inspired and feel a need to make their mentors proud. Theoretically, children are more likely to accomplish such goals in learning environments that offer a supportive, caring, and constructive avenue to academic success. With current efforts to increase proficiency rates across all children falling short of nearly all stakeholders' expectations, we believe it is time to get beyond this

paradox and myth of education assessment and focus on the dimensions we know will actually improve achievement and contribute to total school improvement.

Myth #4: There Are Three Kinds of Lies—Lies, Damned Lies, and *Statistics*

Have you ever stood at a crosswalk where the *Do Not Walk* signal seemed to take forever to change? If you are alone, you are not likely to cross the street against the signal, because you do not want to be singled out for breaking the law. Yet if a group of people is standing there waiting and then begins to cross the street together, we usually join in, somehow feeling that the numbers justify the infraction. There is comfort in numbers. And yet many people still fear numbers—statistics.

What we have found is that folks tend to fear numbers because often those numbers (statistics) are presented in a fashion they do not understand. They fear numbers because in the past they have been held accountable to standards that make use of numbers that were not fair or accurate. But the honest truth is that numbers do not lie, liars do. Unfortunately, as Andrew Lang once said, we “use statistics as a drunken man uses lampposts—for support rather than for illumination.” This is often the case when it comes to educational statistics. Our goal in this book is to help you get beyond this statistical limitation and begin to use statistics to drive what we do and not just provide a lamppost to lean against.

Recently we were in a school on the East Coast giving a workshop to faculty and support staff. We were showing them statistics that related to the level of trust in teachers. The first slide we presented showed that students in that school had a very low level of trust in their teachers. You could see disbelief on the faces of some of the teachers in the room. The next slide showed a similarly low level of trust in the teachers by parents. At this point one of the teachers stood up and said, “You are a liar! You are making up these numbers!” Another teacher screamed an “Amen!” We explained that these statistics were gathered from surveys given to all of the faculty and to more than 300 students and their parents. We asked (with a smile), “Given that we live more than 1,000 to 3,000 miles away from here, how do you think we were able to get these 600 people to give consistently negative answers to these questions? Do you think we called all of them up in our free time?” Silence filled the room as we went to the next slide, which showed how the educators in the room thought that students do not see them as trustworthy. The slide showed that the

majority of teachers in the building also felt that many of their colleagues were not seen as trustworthy. We asked them, “Can any of you explain these numbers?” And slowly, one by one, they began to express how as a group they needed to work on building trust because they didn’t even trust each other.

This is one example as to how holistic numbers (meaningful statistics) can help teachers have courageous conversations. This is just one example of how a simple statistic on a variable (trust) that has great impact on our ability to provide quality instruction can guide a data-driven conversation to improve all that we do as educators. This is the difference between this book and other books on data, research methods, and analysis. We will not be teaching you how to run statistical analysis. We will not be teaching you how to design a perfect random trial experiment. We will be helping you to collect the data and evidence you have and how to collect additional data and evidence you need. We will be helping you to better organize this data under a seven-dimensional model so that you can understand and use this data to become more successful in what you do. This is not just another book on data analysis. This is a book about a process and framework to make qualitative and quantitative data, statistics, artifacts and other evidence more meaningful and useful to educators.

First Steps

1. Consider how you typically approach and embrace new ideas (proposals for change presented either by you or by others) and how the educators you work with will behave in relation to Rogers’s notion of the diffusion of innovation.
2. Begin thinking about how the seven dimensions of Multi-Dimensional Education are perceived in your school by all stakeholders.
3. Begin thinking about how the Multi-Dimensional Education seven dimensions and the existing quantitative and qualitative data, artifacts, and evidence you have on your schools are connected and how such data could be a part of your model for growth.
4. Consider how you might begin to have courageous conversations with a few of your colleagues regarding the best approach for getting others to buy into a positive, multi-dimensional change process.