The Big Ideas That Shape Professional Conversations

It was noted in Chapter 2, "Power and Leadership in Schools," that one of the most important uses of positional authority is to forge consensus among a professional staff regarding the big ideas that shape everyday practice. As you will see here as well as in the chapters that follow, commitment for a consensus on these big ideas can serve as the underpinnings for professional conversation. But what are those big ideas, what is the research on which they are based, and why are they important?

Ideas are powerful. They help us make sense of the world, and they enable us to determine the best approach in a given situation. Furthermore, ideas shape our notions of what is *right* and whether or not a situation is acceptable. When students from different ethnic backgrounds enroll at very different rates, for example, in advanced courses, educators' acceptance reflects a host of other beliefs about intelligence, student preparation, and the capability of different students for challenging work. When students of all levels are subjected to day after day of memorization of facts and practice of procedures, those instructional approaches reflect numerous beliefs about the nature of what is to be learned and the optimal strategies to produce that learning. The big ideas described in this chapter include the following:

- What constitutes important learning?
- What causes learning?

- How are students motivated?
- What is intelligence, and how do students' views influence their actions?

Every educator goes about his or her daily work with a complex set of beliefs, assumptions, and values, many of which are only partially acknowledged. These mental models inform everyday practice and govern, to a large extent, the multiple decisions that result in practice. These mental models are grounded in the experiences of individuals from earliest childhood through their entire schooling, their professional preparation, their experiences in teaching, and their interactions with colleagues. Thus, the complex set of beliefs that underlie decisions about practice result in an elaborate web of norms and expectations, which, in most cases, are unexamined.

Teaching, as James Stigler and James Hiebert (1999) have pointed out, is, among other things, a cultural activity. That is, "doing school" is surrounded by norms and expectations regarding what happens there and how the interactions between teacher and students are structured. By virtue of having gone to school, teachers absorb these cultural norms; changing them can constitute a significant challenge for a school's professional community. And yet prevailing views are increasingly recognized to be counterproductive in enabling schools to achieve the results for which they aim.

Leaders, therefore, whether administrators or teachers, have a deep responsibility to ensure that the big ideas at work in their schools are those that are supported by research and that will yield the most positive outcomes for students. The challenge is to promote these ideas even when they digress from so-called accepted wisdom of both the educational establishment and the community at large. It is always important to articulate such ideas explicitly, but particularly so when they are not widely understood. Furthermore, it would be astonishing if an entire faculty was comprised of individuals who held identical views regarding these important issues. So the leadership challenge involves not only seeking the best information and theories about learning but forging consensus among members of a school's professional staff.

For schools to be truly research based and grounded in best practices, a thorough understanding of these big ideas is essential. And because some of them would yield implications directly at odds with current practice, professional leadership is absolutely vital. This leadership can derive from the positional authority of principals and their designees, but it also emerges from teacher leaders and others in the teacher corps who hold positions (department chairs, master teachers, instructional coaches, etc.) that afford them influence. The interactions with power are important;

educators with formal authority can gain attention by virtue of their position, but the ideas they bring forward must make sense to all teachers. As was noted in the Chapter 2, it is the ideas in a professional organization that provide the energy for action. Although formal leaders can impose their will, professional leadership organized around powerful big ideas is essential for deep change.

Brief descriptions are offered in the next section for each of the big ideas that underpin conversations about teaching. These concepts are derived from extensive research literature from the disparate literature of cognitive psychology, organizational development, and business. Although they make sense, many of them are not consistent with the prevailing understandings and consequent practices of the educational community. Their implications for planning and implementing learning experiences are profound; observations of teaching and conversations about practice are inevitably shaped by them.

The descriptions below provide the material for an initial exploration of the concepts. But for a more in-depth appreciation of them, and their impact on practice, reading some of the material cited in the Reference section is recommended.

WHAT CONSTITUTES IMPORTANT LEARNING?

The question of important learning has several different aspects to it, which are described below:

- The skills and knowledge needed by students who will be citizens and in the workforce until the second half of the 21st century
- How school content is conceptualized and described (For example, does mathematics consist of procedures to be memorized and applied, or concepts to be understood, or some combination of the two?)

A critical examination of these two factors is necessary and will have an enormous impact on conversations about teaching. And as with others of the big ideas, consensus on them among members of a professional community is essential for discussions about teaching to have meaning.

Necessary Skills and Knowledge

As pointed out by policymakers and educators over the past several decades, today's elementary students will be active members of their communities 40 years from now. If one contemplates the dramatic changes that

have taken place over the past 40 years, one must recognize that it would be impossible to predict, with any degree of confidence, the precise knowledge and skills that will be needed by these students. The revolution in information technology, of course, has had an incalculable impact on all aspects of people's daily and professional lives.

In addition, economic globalization has provided inescapable evidence that what was considered a good education two generations ago is now hopelessly inadequate. A community must be able to ensure an investor (e.g., an automobile manufacturer) that it can offer an educated workforce; in this sense, it is competing with other communities for that company's investment. In addition, however, jobs of all skill levels are now being shifted to other countries. American communities, then, are competing not only with neighboring communities but also towns and cities in India and China. As Thomas Friedman put it succinctly in a column in the *New York Times* on December 13, 2006, "Why should any employer anywhere in the world pay Americans to do highly skilled work—if other people, just as well educated, are available in less developed countries for half our wages?" (Friedman, 2006)

This economic argument is compelling: The global economy is highly integrated; very little work can't be automated and digitized and accomplished anywhere in the world. Furthermore, the United States lags behind other industrialized countries in every international assessment and measures of Internet penetration, and although achievement levels of American students are on average higher than those in India and China, those countries produce far more graduates, in sheer numbers, than does the United States. To sustain high levels of economic activity and growth, then, American schools must prepare their students for a world that is impossible to predict with any assurance but in which people will have to be adaptable and flexible, so they can succeed in changing conditions. Schools were designed in the 19th century, after all, to equip their graduates to do routine work. Those are not the needs of the 21st century, with a premium on creativity and innovation. It's more than a question of a group of students being left behind, victims of poor teaching in chaotic conditions; we could have an entire generation left in the dust of the global economy.

In light of this reality, consensus is emerging that our schools must graduate students with the following skills:

- Deep understanding and skill in the traditional academic disciplines
- International understanding
- Innovation and creativity
- Abstract thinking and problem solving

- Interpersonal skills
- Knowing how to learn

The skills needed for an educated citizenry are no less demanding. Voters are asked to evaluate candidates' positions on a wide range of complex issues; their judgment requires an understanding of public policy and historical trends. One way to think about citizenship skills is to contemplate the demands of serving on a jury. As Justice Leland DeGrasse wrote in a decision in 2001,

> A capable and productive citizen doesn't simply turn up for jury service. Rather, she is capable of serving impartially on trials that may require learning unfamiliar facts and concepts and new ways to communicate and reach decisions with her fellow jurors . . . Jurors may be called on to decide complex matters that require the verbal, reasoning, math, science, and socialization skills that should be imparted in public schools. Jurors today must determine questions of fact concerning DNA evidence, statistical analyses, and convoluted financial fraud, to name only three topics.

The Description of Content

Virtually all states have established content standards for student learning; these are mandated by state agencies and (at least for some disciplines) operationalized through large-scale, high-stakes assessments. The standards vary considerably in their level of detail (their grain size) and in the type of knowledge described. But regardless of how the standards are written and the verbs used to indicate student performance (identify, describe), the manner in which teachers think about the content they teach has enormous influence on their practice.

School learning comes in different forms: Some of it represents factual knowledge (knowing *that*), some is procedural knowledge (knowing *how*), and some is conceptual understanding. In addition, there are skills: communication skills (reading, writing, viewing), thinking skills (analyzing information, formulating and testing hypotheses), and social skills (collaborating with others, seeing another person's point of view). Last, there are values and dispositions (perseverance, open-mindedness). Clearly, all these types of learning are important; although, some are more emphasized (because they are easier to assess) in state content standards than others. In particular, factual knowledge and procedural knowledge are stressed over conceptual understanding and thinking skills. The danger is that in their zeal to prepare students for success in passing high-stakes

state assessments, then, teachers will devote greater attention to those lower-level aspects of learning, ignoring the (more interesting and challenging) aspects of higher-level performance.

Some international assessments, notably Trends in International Math and Science Study (TIMSS) and Programme for International Student Assessment (PISA), and the National Assessment of Educational Practice (NAEP: called "the nation's report card') assess higher-level learning. This is primarily due to the fact that rather than testing every student, they conduct a sample, thereby using deeper assessments than is possible with large-scale, machine-scorable tests. It has been recognized for some time that, on these international assessments, American students don't fare nearly as well as their peers in other countries. Some have tried to explain away this phenomenon by pointing out that in this country, all students attend high school and are included in the pool of students to be sampled; while in many other countries, high school is selective and includes only the most capable and prepared. Although this may be the case for assessments of 17-year-olds, it can't explain the differences among 9-year-olds, where universal education prevails in every advanced country.

The differences in educational attainment are striking. "On a test of mathematics achievement, for example, the highest-scoring classroom in the US did not perform as well as the lowest-scoring classroom in the Japanese sample" (Stigler & Hiebert, 1999, p. 5). Other results are less dramatic, but the patterns are clear; the academic performance of American students lags well behind that of those from other countries.

Explanations of these phenomena have varied from structural factors (the length of time students spend in school, pay and social status of teachers) to actual instructional factors. The latter appear to hold the greatest potential for improving the performance of American students. And it begins with understanding how the content to be learned is viewed in different countries and continuing with an examination of whether the American conceptualization of practice can yield optimal results in terms of high-level learning.

The most detailed study of this phenomenon was conducted by James Stigler and James Hiebert (1999); they focused on the teaching of mathematics and compared approaches in three countries: the United States, Germany, and Japan. Their approach was to analyze hundreds of videotaped lessons from the three countries and to interview the teachers. They discovered significant differences in various aspects of practice, beginning with how teachers regard the content they teach and the assumptions on which their instruction is based.

In Japan, mathematics instruction is focused on the development of concepts rather than memorizing definitions and practicing mathematical procedures, as is the case in the United States. In the United States, about

80 percent of concepts were just stated rather than developed, with the percentages roughly reversed for both Japan and Germany. Furthermore, in U.S. classrooms, students learned about twice as many definitions as students in the other countries. This is not to suggest that it's not important to learn definitions—it depends on what is done with them. In the United States, definitions were the beginning and end of the lesson—learning the meanings of the definitions was the point of the lesson. In contrast, the Japanese lesson taught students to use the definition to develop a proof to show, for example, that vertical angles are always equal.

These findings have profound implications. If teachers (as in the United States) believe that their mission is to help students perform mathematical procedures, their instructional strategies are very different than if they regard their role as helping students develop an understanding of complex concepts. Such a focus leads teachers to explanations followed by low-level practice, rather than a more problem-oriented approach in which students develop understanding. And because many teachers were themselves taught by teachers with an incomplete understanding of mathematical concepts, the cycle can be self-perpetuating.

The first of the big ideas, then, is for teachers to critically examine what they are teaching and to ensure that their learning outcomes do the following:

- Reflect high-level learning important to the discipline
- Represent a balance of different types of content (knowledge, skills, etc.)
- Develop conceptual understanding rather than merely facts and procedures

Once consensus on this big idea has been established, conversations about teaching can explore its implications in daily practice. For example, it is interesting to look at the work students are asked to do from the standpoint of the rigor of the content, the extent to which it represents important conceptual learning, and whether students are challenged to develop a range of skills (e.g., collaboration and reasoning) as well as more traditional knowledge.

WHAT CAUSES LEARNING?

Another big idea that can serve as the foundation for important professional conversations concerns the nature of learning: How is it that people learn things? How does deep conceptual understanding develop? How do individuals learn to use their minds to analyze poetry or data or evaluate the claims of competing political candidates? This question is central to the

mission of schools, and it is significant that the accepted answer to it has evolved over the past several decades.

During portions of the 20th century, knowledge was equated with behavior, and therefore, learning was thought of as changing that behavior. This led to attempts to apply what had been learned from animal psychology to student learning, including stimulus-response, operant conditioning, and the creation of "teacher-proof" and completely scripted texts. Of course, a more complex view of learning had held currency previously. In 1900, in *The School and Society,* John Dewey had recognized that

> The child is already intensely active, and the question of education is the question of taking hold of his activities, of giving them direction. Through direction, through organized use, they tend toward valuable results, instead of scattering or being left to merely impulsive expression. (Dewey quoted in Dewey, 1959)

Although not all of Dewey's (1959) views are widely shared, most educators now recognize that he was essentially correct about the active nature of learning, that for students to acquire conceptual knowledge, they must engage with the ideas, they must construct their understanding. It's important to understand what this constructivist approach to learning is and what it is not. When educators argue that students must create their own understanding, it's not that the teacher cedes control over the classroom to students. Far from it; it is the teacher who decides what it is the students will learn (the learning outcomes). The constructivist position merely describes how it is that students come to learn what the teacher intends, and it appreciates the complex nature of learning.

An example from mathematics provides a vivid example of a constructivist methodology. The elementary mathematics curriculum typically includes the formulae for the area and perimeter of geometric shapes; the typical approach would be to present the formulae with probably a brief explanation of what the terms mean and to then provide opportunities for students to practice applying the formulae to calculate the areas and/or the perimeters of some shapes. In a constructivist classroom, on the other hand, a teacher might present students with the following problem: "You have 64 feet of fencing. What are the measurements of the largest dog run you could construct?" To solve this problem, students would have to explore not only the formulae for area and perimeter but the relationships between the two.

In such a classroom, students would wrestle with a concrete problem and discover, no doubt, different approaches to its solution. Important learning, of course, would come in the group discussion, in which different

approaches were shared and compared as to their accuracy and efficiency. In the course of the discussion, the teacher would explain (if such an explanation were needed) the formulae for area and perimeter, building on what the students had discovered. In addition, students would find that the closer the shape is to a square (if it has rigid sides) or a circle (if the fencing is permitted to bend) the larger the area for a given perimeter. This is a powerful understanding and introduces students to the concept of a variable, central to later understanding of algebra.

This is not to argue that there is never a place for rote learning. Indeed, memorization is the only way to learn, for example, French vocabulary words. But an understanding of the roots of those words can make the process of memorization both easier and more interesting. Or in elementary mathematics, students learn that every time 2 is multiplied by 6 in whichever sequence the numbers are given and in whichever representation used, the answer is always 12. Once the concept of multiplication is understood, however, the multiplication facts must simply be committed to memory.

The danger for learning occurs when teaching of facts and procedures is substituted for conceptual understanding. That is, students can simply memorize procedures for getting the right answer, or the facts of history, or the definitions of terms in science. But without the conceptual underpinning supporting their memory, it is vulnerable to being forgotten, to not being available to apply to other situations. The concepts just memorized can't in any meaningful sense be said to have been *learned.* Constructivist teaching, on the other hand, aims for conceptual, flexible, understanding with students in control of powerful understanding.

Educators have, for some time, labored under the false notion that one must master the basic before one can move on to the more interesting application of the basic knowledge. We now know that thinking and content develop together and that the thinking results in the content learning. This finding has been well documented through research. In fact, Gallagher and Stepien (1996) have found that research in cognitive psychology has documented the "benefits of learning in a complex environment. Instruction that fosters higher-order thinking can result in learners who can construct meaningful connections between pieces of information, transfer information to new settings . . . and are motivated to learn" (p. 53). Indeed, Resnick and Klopfer (1989) argue that "one of the most significant ideas emerging from recent research on thinking is that the mental processes we have customarily associated with thinking are not restricted to some advanced or 'higher order' stage of mental development. Instead, 'thinking skills' are intimately involved in successful learning of even elementary levels of reading, mathematics, and other subjects" (p. 1).

The most significant research finding is deceptively simple: Learning is done *by the learner.* That is, as teachers we tend to think that our students learn on account of what we do. But that is a mistake: Our students don't learn because of what *we* do; they learn because of what *they* do. Our challenge, then, is to design learning experiences for students that are interesting and that yield the learning we desire. Some educators make extensive use of physical (manipulative) materials in their classrooms. Indeed, a physical representation can aid in student acquisition of some concepts. But they are no panacea: Students can be as mindless in their work with manipulatives as they are with a worksheet. The larger point is that school is not a spectator sport for students; more important, by far, for students than hands-on is minds-on. For students, school is not a spectator sport.

The second big idea, then, refers to how students learn. For them to acquire important concepts and skills, students must be

- mentally active, making connections, formulating hypotheses,
- linking new understanding to what is known,
- participate in in-depth, structured reflection, and
- engage in collaboration.

The nature of learning provides rich opportunities for conversations about teaching and how the principles of learning are reflected daily in classroom practice. Observers of classrooms can be alert to the nature of student engagement and the extent to which they have opportunities to develop understanding based on intellectual activity. These observations can then provide the foundation for important conversations among educators.

HOW ARE STUDENTS MOTIVATED?

Yet another important big idea that provides the raw material for powerful professional conversations concerns how students are motivated to work hard. Important learning, after all, requires commitment and perseverance on the part of students: What convinces them to expend the effort? Understanding recent research and the implications of that research for teaching are critical to strengthening practice; as with other aspects of practice, strengthening is enhanced through professional conversation.

Every teacher holds a mental image of interested, motivated students who engage willingly with challenging content, who behave respectfully, and who complete their work with commitment and energy. The reality for many teachers is, unfortunately, somewhat at odds with this vision:

Their students are sullen, alienated, and appear to be looking for ways to bend the rules to their advantage. Even young children, although they will usually comply with the school's ways of doing things, are devoid of the energy in class that is so apparent on the playground or at home after school and on the weekends.

And yet there are some teachers who do seem to enlist students' best efforts, where they become engaged in complex projects, doing difficult work. There is a palpable energy in these classes; an observer can feel it when walking in the door. What, one might ask, are those teachers' secrets? Are their classrooms run on fear ("Don't smile before Christmas"), or are they permissive? How do they do it? More than likely, they have heeded William Glasser's (1986) words: "All living creatures, and we are no exception, only do what they believe is most satisfying to them, and the main reason our schools are less effective than we would like them to be is that, where students are concerned, we have failed to appreciate this fact" (p. 8).

It's important to remember the four-year-olds everyone has known. No one has to cajole them to learn new things; they are eager in their pursuit of new experiences and new knowledge. Young children appear driven to figure things out, and in fact, one of the biggest challenges of parenting is to prevent them from harming themselves from dangers they don't understand. However, by the time these same children leave elementary school, many of them are lethargic and seem to have lost their curiosity. So what has happened in the intervening years? Have the schools themselves somehow drained children of their natural inclinations toward learning? And how can we explain older students' pursuit of difficult new skills, for example, riding a skateboard, even in the face of repeated falls? What makes them persevere?

A critical distinction when considering human motivation is the one between intrinsic and extrinsic motivation: Intrinsic motivation is that which is driven from within an individual, whereas extrinsic motivation is imposed from the outside. The external reward may be anything valued, including recognition from a parent or teacher. Children playing in a stream pursue it because they are intrinsically motivated; those who work on a project to get a good grade are extrinsically motivated. Each has its place, of course. Many important things, such as state capitols, would not be learned if students were not influenced by extrinsic factors.

However, the situation is complex. Many studies have confirmed that extrinsic motivation tends to drive out intrinsic factors. Deci (1995, pp. 25–26) reports experiments with graduate students who were given a puzzle to solve—they found it interesting and were intrinsically motivated to work on it. Then, two groups of students were given the puzzle:

One group was paid to solve it; the other group not. Then, when the experiment was (supposedly) finished the students were told to wait for a few minutes while the leader went out of the room to do some paperwork. Those who had been paid for their participation chose not to continue playing with the puzzle, while those who had not been paid did. That is, being paid appears to have destroyed what intrinsic motivation had been there previously. Many other studies have reached similar conclusions. Sergiovanni (1992, p. 24) cites the well-known Greene and Lepper (1974) study with young children and felt-tipped markers. Once they were offered a reward, they were much less interested in playing with them. The issue for schools is not whether we should banish extrinsic motivation; that would be impossible and probably undesirable. But many schools, as organizations, rely exclusively on extrinsic motivation and have ignored the research on intrinsic motivation. This is an omission with a high cost; for many students, school, rather than a place for interesting exploration of important learning, has become a setting for unrelieved boredom and drudgery. And most teachers, because they are not familiar with the principles of intrinsic motivation, are not able to take advantage of findings with highly relevant and powerful implications for daily practice.

So what is known about intrinsic motivation? What principles should we incorporate into day-to-day teaching to capture students' best energies? There is considerable consensus on the major research findings, extending over many decades. The first is the primacy of basic physical needs in influencing behavior; if people don't have at least adequate food, shelter, and warmth, all their energies must be devoted to acquiring those. This explains the importance of breakfast and lunch programs for children from poor backgrounds; if they are hungry they can't begin to focus on what is being done in school.

But beyond the basic physical imperatives, all human beings are motivated by powerful psychological needs. These have been identified and described by William Glasser (2001), Edward Deci (1995), and Robert White (1959) among others. They are summarized below.

- *Belonging and making connections with others.* Human beings are social creatures and must make connections with others. Students will frequently perform their best work when they know it is to be presented to the class—they care deeply about the opinions of their peers. Furthermore, students find working with classmates to be far more engaging than individual effort.

- *Competence or mastery.* Understanding difficult content, like mastery in any field, is enormously satisfying. Part of the satisfaction is the struggle itself: If it's too easy, if there is no challenge, the result is cheapened.

- *Autonomy or freedom.* Of course, students in school can't have unlimited choices; teachers must make essential decisions regarding what is to be learned and what students are to do. However, students are highly sensitive to practices that appear to reflect a teacher's unreasonable and arbitrary use of power.

- *Intellectual challenge.* Inquiry-based learning acknowledges that students' curiosity is a powerful motivator, to the extent that learning tasks invite students to solve a problem, or resolve incongruous events, or understand anomalies; students are driven by an innate curiosity to resolve the discrepancy.

It's important to recognize that teachers are subject to the same motivational factors as their students. Teachers, too, prefer collaboration to isolation in their work, and the social structures in a school (such as doughnuts on Fridays) contribute to a sense of cohesion among members of a faculty. Similarly, teachers resist overly-controlling environments and are highly motivated by the need to feel competent and masterful in their work. Finally, solving problems related to their practice is highly rewarding; deciding on a course of action to solve a complex problem is far preferable to following someone else's script.

Furthermore, many of the discipline problems teachers must handle or that turn up at the principal's office are a direct consequence of students' needs not being met. The class clown may receive sufficient recognition from other students to make the disciplinary consequences of his behavior worth it to him; another student may prefer being sent to the office over having her ignorance revealed in class. It's an interesting and revealing exercise to analyze common discipline problems in light of motivational theory. Teachers frequently discover that their students' behavior problems are quite purposeful from a motivational point of view.

The third big idea, then, concerns student motivation and suggests that students will bring energy and commitment to their work when they have opportunities for

- purposeful and respectful interactions with other students,
- the development of competence and mastery in important content,
- a measure of autonomy and control over how they spend their time (this is usually provided through choice in activities), and
- solving interesting problems and challenges, addressing puzzlements.

An exploration of student motivation through conversations about teaching provides opportunities for educators to delve into how teachers help students develop the resilience they need to take on difficult intellectual

challenges. These conversations build on actual classroom events enable the discussions to deepen the understanding of everyone participating.

WHAT IS INTELLIGENCE, AND HOW DO STUDENTS' VIEWS INFLUENCE THEIR ACTIONS?

The last big idea and one that contributes to the ways in which educators view the others, concerns the nature of intelligence, and why the perceptions of both students and teachers are important. Professional conversations frequently reveal differences in how different educators regard intelligence (whether it is a fixed commodity, for example, or whether it can be developed); such differences have implications for classroom practice.

Important research has focused on different ways in which both students and teachers view intelligence; recent findings indicate that these beliefs have a powerful impact on students' willingness to work hard and their academic success. This research has been described by, among others, Carol Dweck (2000), a social psychologist at Columbia University. She has conducted a series of important studies investigating the different attitudes students (and their teachers) hold about intelligence, and why it's important.

The foundation of Dweck's (2000) work has been her identification of two fundamentally different views of intelligence: fixed and malleable. Those with a fixed view of intelligence regard it as something one is born with, the hand one has been dealt. There is not much a person can do about how smart a person is, in this view. On the other hand, some people hold a view of intelligence profoundly different: In the malleable view of intelligence, smart is not something you *are* but something you *become* through application and hard work. When a student says, "I'm just not good at math," he or she is reflecting a fixed view of intelligence.

The consequences for students of these different views of intelligence are profound. The first deals with students' willingness to work hard. Students with a fixed view of their intelligence seek validation of their self-concept through success in school tasks. They tend to avoid activities that might challenge this view; therefore, when confronted with a choice between an easy task and a more difficult one, they will select the easy task. Students with a malleable view of their intelligence, on the other hand, tend to prefer challenging tasks; they see them as more fun. Furthermore, and paradoxically, students with a fixed view of intelligence are unwilling to work hard or be seen to be working hard. Their reasoning is particularly revealing. "If I were really smart, I wouldn't have to work hard at this. In fact, if I have to work hard, it must mean that I am not very smart."

The second, and in some ways even more important consequence of different views of intelligence concerns students' responses when they encounter the inevitable difficulties in learning complex material. Those with a fixed view of their intelligence become helpless, in effect giving up. Students with a malleable view of intelligence, on the other hand, are far more resilient; when they encounter difficulty, they take it as a challenge to be overcome. Dweck (2000) calls the response of these students to difficulties mastery oriented.

Dweck (2000) is careful to point out that people who hold a malleable view of intelligence don't deny that there are differences among individuals in how much they know at any given time or how quickly they can master new material. "It's just that they focus on the idea that everyone, with effort and guidance, can increase their intellectual abilities" (p. 3).

The implications for students of these different views are enormous. In an important study, Dweck (2006), in her research with colleagues, measured students' mindsets as they made the transition to junior high school—did they believe their intelligence was a fixed trait or something they could develop? They then followed them for the next two years. For many students, the transition to junior high school is hard (it is less personalized, their grades go down, etc.). But in their sample, only those students with a fixed mindset had those difficulties—the students' grades with the growth mindset actually went up. "In the fixed mindset, adolescence is one big test. 'Am I smart or dumb? Am I good-looking or ugly? Am I cool or nerdy? Am I a winner or a loser?' . . . It's no wonder that many adolescents mobilize their resources, not for learning, but to protect their egos. And one of the main ways they do this . . . is by not trying" (p. 58).

Because of these implications, it's important for the adults (parents and teachers) in children's lives to help them cultivate a malleable view of intelligence. Paradoxically, praising students for their intelligence is counterproductive. Dweck (2006) summarizes her research succinctly.

> After seven experiments with hundreds of children, we had some of the clearest findings I've ever seen: Praising children's intelligence harms their motivation and it harms their performance. How can that be? Don't children love to be praised? Yes, children love praise. And they especially love to be praised for their intelligence and their talent. It really does give them a boost, a special glow—but only for the moment. The minute they hit a snag, their confidence goes out the window and their motivation hits rock bottom. If success means they're smart, the failure means they're dumb. That's the fixed mindset. (p. 170)

And she follows with this observation: When we say to children, 'Wow, you did that so quickly!' or 'Look, you didn't make any mistakes!' what message are we sending? We are telling them that what we prize are speed and perfection. Speed and perfection are the enemy of difficult learning" (Dweck, 2006, p. 173). Instead of praising intelligence, Dweck suggests, teachers should praise perseverance and strategy: "You have tried lots of different methods to solve this problem, and it looks like you have done it!" (p. 173).

Haim Ginnott (1969), during his life's work with children, came to a similar conclusion. "Praise should deal, not with the child's personality attributes, but with his efforts and achievements" (p. 57). And Alfie Kohn (1993) has concluded that praise can undermine children's intrinsic motivation. When children are praised, he argues, the praise, rather than the work itself, becomes the motivation for future effort.

The fourth big idea addresses the impact of different views of intelligence, the impact of these different concepts on student commitment to hard work, and their resilience when confronted with challenges in learning. The classroom implications of these findings suggest the following:

- Students are well served by the acquisition of a malleable view of intelligence.
- Teachers (and parents) can assist in students' development of such a view and of healthy attitudes about their own power in shaping their learning by praising student perseverance and use of strategy in their learning.

Students' and teachers' views of intelligence are reflected constantly in interactions in the classroom; observations of classroom events can supply rich raw material for conversations about this important area of practice. In particular, in their professional conversations, educators can explore the ways in which teachers encourage students' effort and learning strategies and how they convince students to persevere even in the face of temporary setbacks.

THE MERGING OF ALL THESE IDEAS

These big ideas offer an important vision for education, a vision that is at odds with prevailing practice in many schools. They serve as the foundation for conversations between teachers and administrators, and among other teachers. They also serve as the important ideas around which educational leaders (both teachers and administrators), working together, must develop understanding that results in action.

The concepts described in this chapter reinforce one another and have essential implications for practice. In essence, they all suggest that educators must heed this research when they design learning experiences for students that engage them actively in developing conceptual understanding. The consequences of this shift in thinking are profound: Although we have tended to describe teaching in terms of the tasks of teaching as in, for example, *Enhancing Professional Practice: A Framework for Teaching* (Danielson, 2007), we must shift our focus to school as an experience *for students.*

The merging of these big ideas about student learning and motivation, about the nature of intelligence, and about what is worth learning provide much material for important conversations among educators. These conversations get at the heart of what is important for schools to incorporate into their practices, but until there is professional consensus about them, each individual is likely to be working alone, in isolation from colleagues.

The big ideas suggest the following implications, any of which provides a great foundation for meaningful conversations between teachers and administrators and between other teachers:

- What is the teacher's purpose in any learning activity? Does that purpose reflect important learning and a view of content as conceptual understanding rather than rote repetition of facts and procedures?
- What are the students actually doing? What is the level of intellectual rigor? What choices do they have? What are their opportunities for reflection and closure on their learning?
- To what extent has the teacher succeeded in creating a learning community in the class? To what degree do students assume responsibility for their learning?

SUMMARY

Professional conversations in schools take place, as was noted in Chapter 2, within the web of relationships among teachers and administrators; those relationships are influenced by the varying degrees of power and positional authority wielded by different individuals. To yield educational practices that result in high levels of student learning, however, the professional interactions among individuals in the school must be governed by powerful big ideas that reflect learning and, indeed, what is worth learning in the 21st century.

A critical application of positional authority, then, is to forge consensus, among all members of a school's faculty, on the big ideas described in this chapter. These concepts provide the foundation for how teachers design learning experiences for students and the specific topics for ongoing dialogue. The specific implications of these big ideas and suggestions for engaging in important professional conversations are the subjects of the following chapters.