

group(s) to make sure that all students are engaged and the level of learning is appropriate for each learner. In a recent study by Glass, he concluded that mixed or heterogeneous ability or achievement groups offer several advantages: less able pupils are at reduced risk of being stigmatized and exposed to a “dumbed-down” curriculum; teachers’ expectations for all pupils are maintained at higher levels; and opportunities for more able students to assist less able peers in learning can be actualized. He also acknowledges that teachers wanting to use heterogeneous grouping will require more training, materials, and support, and that this support is largely lacking in schools. (G. Glass, “Grouping Students for Instruction,” School Reform Proposals: The Research Evidence, Education Policy Studies Laboratory, Arizona State University, 2005 retrieved on February 21, 2006 at [www.asu.edu/educ/eps/EPRU/documents/EPRU%202002-101/Chapter%2005-Glass-Final.htm](http://www.asu.edu/educ/eps/EPRU/documents/EPRU%202002-101/Chapter%2005-Glass-Final.htm)). Heterogeneous grouping strengthens instruction only when it allows a variety of learning opportunities in various contexts for each student.

### Real Life Learning

Today much of students’ learning is abstract—removed from their daily activities. It leaves many students wondering why they must learn a particular concept and what relevance it has to their lives. Many educators feel that this disconnect between learning and relevance to real life is a major factor in students’ disengagement from school. Educators also realize that they are also responsible for showing that students are learning, that the achievement gap is narrowing and that standards are being met. To have equity and excellence, the prevailing thought is that all students must meet the same standards in the same way and at the same level.

In Elliott Washor and Charles Mojkowski’s commentary in Education Week, September 14, 2005, they assert that “standards of quality cannot be standardized, and that they must be connected to the real world in which the performance is relevant. It is in the variations of a standard—not its standardization—that real world learning takes place...” They argue that having every student meet the same standards regardless of his/her life experiences and ability is not advantageous to the standards movement or in helping student re-connect to school. They offer the following standards variations for helping all student learn and achieve at high levels. They are:

1. Allow students to create their own portfolio of standards which includes requirements on literacy, numeracy, work-readiness, community and personal development.
2. Encourage variations in the problem or task allowing each student to bring his/her interests and decisions into the learning and work.
3. Allow variation in the context or setting by providing opportunities for students to obtain a feel for a standard in the real world.

4. Allow for the variation in time for achieving the standards— learning time and time for sequencing and scheduling tasks.
5. Allow for variation in the mastery of a standard—standards have a bandwidth of performance and not a bar.
6. Allow for variation in student performance profiles by using multiple assessments so that each student’s strengths and limitations are documented and can be reviewed for additional learning. [www.bigpicture.org/publications/2005archives/EdWeek05.htm0](http://www.bigpicture.org/publications/2005archives/EdWeek05.htm0).

Standards are important in helping teachers know what students must know and be able to do. Standards do not necessarily connect a student and learning to the real world. When standards are connected to real life, instruction is strengthened, the student is engaged and the energy of the engagement propels school reform.

### Metacognition and Higher Order Thinking Strategies

The ultimate goal of instruction is to teach students how to learn. The more likely goal of classroom instruction is to promote learning in the students’ everyday skills set, to enhance the conceptualization of basic ideas that form the learning framework and to challenge the brain to create new patterns and new associations that can be applied to new situations, challenges or problems albeit this is not always present in learning.

Raths says that teachers must seek to move away from the three traditional academic types of knowledge —factual, conceptual and procedural—taught in today classrooms. To Raths and many other educators, a major way of strengthening instruction is to use metacognition and higher order thinking strategies. J. Raths, “Improving Instruction,” Theory Into Practice, Autumn, 2002 retrieved on February 16, 2006 at [www.findarticles.com/p/articles/mi\\_m0NQM/is\\_4\\_41/ai\\_94872710/print](http://www.findarticles.com/p/articles/mi_m0NQM/is_4_41/ai_94872710/print)

Metacognition is usually been defined as “thinking about thinking.” It consists of using the higher order thinking skills as well as using a personal internal regulatory method to govern time, frustration level, and other obstacles to learning, e.g., a student, whose forte is not science, but has developed metacognition skills, knows it will require more focus and a longer time to read his/her biology assignment than the economics assignment.

The continued developments in brain research and the continuing efforts to explain how and why learning occurs has resulted in a more refined identification of higher order thinking skills than developed by Benjamin Bloom decades ago. A more detailed look at higher order thinking skills is presented.

### Higher Order Thinking Skills with Definitions and Associated Cognitive Processes

Understand	Making connection(s) between new knowledge and prior knowledge <i>Interpreting, Exemplifying, Classifying, Summarizing, Inferring, Comparing, Explaining</i>
Apply	Using procedures to perform exercises or solve problems; closely linked with procedural knowledge <i>Executing, Implementing, Using</i>
Analyze	Breaking material into constituent parts and determining how parts are related to each other and the overall structure <i>Differentiating, Organizing, Attributing, Deconstructing</i>
Evaluate	Making judgments based on criteria or standards <i>Coordinating, Detecting, Monitoring, Testing, Critiquing, Judging</i>
Create	Reorganizing parts or elements into a new pattern or structure <i>Generating, Planning, Producing</i>

(R. Mayer, “Rote Versus Meaningful Learning,” Theory Into Practice, Autumn, 2002, retrieved on February 16, 2006 at [www.findarticles.com/p/articles/mi\\_m0NQM/is\\_4\\_1/ai\\_94872709/print](http://www.findarticles.com/p/articles/mi_m0NQM/is_4_1/ai_94872709/print); J. A. Livingston, “Metacognition: An Overview,” 1997, retrieved on February 24, 2006 at [www.gse.buffalo.edu/fas/shuell/CEP564/Metacog.htm](http://www.gse.buffalo.edu/fas/shuell/CEP564/Metacog.htm).)

Research shows all students, except those who are severely mentally challenged, possess some degree of metacognition. Those with greater metacognitive abilities tend to be more successful in school; therefore, it is imperative that teachers seek to strengthen classroom instruction by using higher order cognitive strategies.

### Collaborative Professionalism

Meyers and Rust feel that an element missing in strengthening instruction is teachers assessing their own work and its impact on the students they teach. These authors suggest an appropriate way to use assessment data is for the teacher to study the results for the purpose of discovering how he/she might modify his/her instruction. This can help teachers discover areas that need more instructional time or how a teacher needs to use different instructional techniques. (E. Meyers and F. O’Donnell Rust, “The Test Doesn’t Tell All: How Teachers Know That Their Students Are Learning.” Education Week, June 30, 2000, 34 & 37 retrieved on February 24, 2006 at [www.teachersnetwork.org/aboutus/edweek1.htm](http://www.teachersnetwork.org/aboutus/edweek1.htm).) The concept of teachers looking at the data from assessments and changing their

instructional strategies is not a familiar practice in most schools; however, teachers are in the best position to collect and use the data to assess their own work. Self-assessment and self-imposed improvement are powerful tools for improving instruction.

Teachers who assess their own instructional effectiveness are more likely to seek assistance from colleagues; thus the impetus for collaborative professionalism is born. It can be called a professional learning team, a professional learning community or given some other title, but the overall purpose is for a group of teachers to come together to help each other improve classroom instruction and students’ learning. The focus of a professional collaborative is to: (1) examine and analyze student achievement and classroom data; (2) investigate and research best practices; and (3) share personal practices and expertise through analyzing student work and observation of each other’s classroom practices. Even though a professional collaborative encourages, supports and celebrates its members, it must be objective and conscientious in the analysis and interpretation of the data. Only an objective and conscientious analysis and interpretation of data can strengthen instruction.

### Caring Teachers and Conducive Learning Environment

Teachers set the tone and the climate in the classroom. Caring teachers constantly interact with their students—challenging them to learn, providing assistance to overcome a learning block, inquiring about personal situations that may affect learning or following up on absenteeism or lack of homework.

Students sense that they are valued and cared for. A study conducted by the Center for Adolescent and Family Studies shows that students have very complex ideas about what makes a caring teacher. The attributes of a caring teacher included the basic response of “gives everybody a fair chance”, to the more sophisticated “takes time to talk to parents and tell them what I have to do to succeed.” Some other comments include: “Is on your back a lot—tells you what to do”; “tells you to straighten up”; “will notice when something is wrong with you”; and says “ ‘good job’ when you do well”. In short, students generally see teachers helping in the major two domains of their lives—personal and academics. K. Short, “Caring Teachers”, Teacher Talk, 2003, retrieved on February 24, 2006 at <http://education.indiana.edu/cas/tt/v1i1/caring.html>.

Even though students often complain about school rules, most acknowledge that school rules are necessary for order, discipline and learning in a school. The classroom is no

different; in fact, classroom rules must define the same. For learning to take place, students must know what is acceptable and non-acceptable behavior. There must be order so students will know what is happening and what the appropriate response is. Besides these obvious necessary rules, students must feel that they can share their ideas without criticism; they must feel that their ability, ethnicity and socio-cultural background make no difference to the teacher who is teaching them. Students want firm, but equitable treatment. They want to know the classroom is emotionally, psychologically, physically and academically a safe place to learn—to make mistakes as well as to succeed. A conducive learning environment strengthens instruction by focusing on what is to be learned and how it can best be taught to each student by a caring teacher.

### Conclusion

The diversity in today's classroom is challenging the instructional capabilities of today's teachers as never before. Tension is heightened by the federal requirement to achieve Adequate Yearly Progress (AYP). Disaggregation of data is certainly important in determining what content and instruction is needed for students, but once that has been determined, teachers must use their most powerful instructional strategies to address achievement needs. Some research-based strategies have been suggested, but the research is equally clear that for any strategy to be effective, the student must feel that he/she is being taught by a caring teacher in a conducive learning environment. ■

### Resources

In addition to the resources cited above, the reader may find these sources helpful.

Ball, D. L. and Cohen, D. K., "Challenges of Improving Instruction: A View From the Classroom," *Instruction, Capacity and Improvement*, Consortium for Policy Research in Education, CPRE Research Report No. RR-043, 1999. [www.cpre.org/Publications/rr43.pdf](http://www.cpre.org/Publications/rr43.pdf)

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Protheroe, N. "Improving Teaching and Learning with Data-Based Decisions: Asking the Right Questions and Acting on the Answers," *Educational Research Service Spectrum*, Summer, 2001, retrieved on February 16, 2006 at [www.ers.org/spectrum/sum01a.htm](http://www.ers.org/spectrum/sum01a.htm).

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# Issue Brief

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## Strengthening Instruction: The Bigger Picture

**M**uch has been written about disaggregating the data to improve the instruction of students. There is no disagreement that the disaggregation of data is essential to the improvement of instruction and the achievement of students; however, there are some other aspects of instruction that have not received as much attention in the professional literature, but must be addressed if classroom instruction is to be strengthened. Providing high quality, high engagement instruction is just as important as knowing what to teach to whom.

### Access, Equity and Excellence

Few educators have taken the time to disaggregate the concept and philosophy behind the mantra of "No Child Left Behind" or the slogan, "Every Child Can Learn." For most educators, it means that every child must improve their achievement usually on standardized tests. These words mean more than that. These words mean that every child must have access to high quality instruction and curriculum. Tomlinson and George state that high quality means "that it is at a high level, authentic, and meaningfully relevant to the learner." (C.A. Tomlinson and P. George, "Teaching High Ability Learners in an Authentic Middle School," *Middle School Journal*, 35, (5), May 2005, p. 8). If the instruction and curriculum reflect these attributes, then there is equity for students providing support is given to any student needing it to maximize his/her potential. Through helping each student develop to his/her fullest capacity, the standard for excellence has been met. According to Tomlinson and George, the barometer for determining excellence is not only in the assessment of students' knowledge, skills, and understanding, but in the gradual development and demonstration of emotional confidence or self-

efficacy that students must have to enter into adult life and work. Access, equity, and excellence must be part of any effort to strengthen instruction at any level—classroom, team, grade level, content areas, school or district.

### Differentiating Instruction

Differentiating instruction must be at the core of any reform movement to improve instruction. Differentiated instruction is a teacher's response to the learning diversity or variation in students' learning. To differentiate the teacher must vary the learning in the dimensions of content, process, products, and learning environment. The content is what the student must learn, the process is the activities in which the student must participate in order to learn the content, the products are the projects—report, speech, video, teacher-made tests—that the student must complete successfully, and the learning environment is the atmosphere and climate that exists in the classroom while the learning is taking place. (C. A. Tomlinson, *Differentiation of Instruction in the Elementary Grades*, ERIC Digest, retrieved on February 21, 2006 at [www.ericdigests.org/2001-2/elementary.html](http://www.ericdigests.org/2001-2/elementary.html).) It is not necessary to vary a student's learning in all four of the dimensions simultaneously.

The dimension that seems to be preventing the student from learning is the one that needs altering first. The standard to be applied in differentiating instruction is that each student's work is interesting and challenging, focused on essential knowledge and skills, and has merit for the learner regardless of his/her ability or level of achievement. Differentiating instruction is not "dumbing down the curriculum" or the lowering of student achievement expectations, but rather it is the providing of instruction at a level where success has a high probability of occurring.

### Grouping

Grouping students—having them learn from one another—is often touted as a way to strengthen instruction. Research does support heterogeneous grouping as valuable instructional strategy, but there are some important principles that must be observed for grouping to be beneficial to student achievement. Each person in the group must be valued and sense that he/she is valued. At the end of the group activity, each person must feel he/she has contributed to the process and the product. The teacher must monitor the

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