from the ERS Supporting Good Teaching Series

Effective Teaching

Envision a classroom in which all of the students are working productively. Quiet tones of engaged conversation can be heard as students in small groups discuss various aspects of their work. In this classroom, students are actively engaged in learning, and discipline problems are nearly nonexistent.

This productive environment has not happened accidentally. The teacher continually calls on his or her repertoire of skills to structure the classroom so that students focus on learning. Clearly, teacher behaviors are key to this success story.

This issue in the *Supporting Good Teaching* series takes a look at what research tells us about the behaviors of effective teachers. Included are an overview of research findings and "how-to" tips related to these findings.

Identifying Characteristics of Effective Teachers

In recent years, numerous studies and research summaries have addressed the question, *What are the characteristics of effective teachers?* For example, the Knox County School District in Tennessee analyzed assessment data to identify teachers that had the greatest positive impact on student learning over a school year—and then observed these teachers. Bratton describes the profile of the most effective teachers, as identified by the district's analysis. These teachers have:

> high energy and the ability to help all students learn—the low achievers, the average achievers, and the high achievers. They tend to be hard workers who are willing to share their expertise and resources with each other. They keep themselves and their students on task . . . . Interestingly, they frequently are described as having a good sense of humor (1998, 32).

In Bratton's view, "there are no big surprises here. The profile sounds like a description of an excellent teacher. The . . . data simply support that" (1998, 32).

Good teachers make a difference. Their classrooms seem to hum with productive activity. Students are actively engaged in learning, and discipline problems are almost nonexistent.

Issues in the ***Supporting Good Teaching Series*** are designed to help teachers successfully address challenges present in every classroom. Each of the issues includes a synthesis of research, best practice, and questions intended to encourage teacher self-reflection as well as discussion among school staff members.

What Does the Research Say?

Approximately a decade ago, Wang, Haertel, and Walberg asked the question "what helps children learn?" To address it, they analyzed the content of 179 chapters and reviews from books about educational inputs and outputs, compiled 91 research syntheses, and surveyed 61 educational researchers. In order to summarize their results in a way that would be helpful to educators, they developed a 28-category framework of variables that might have an influence on learning and then grouped these into six general "types of influence," two of which were student aptitude and classroom instruction and climate.

What the researchers found highlights the importance of good teaching. Averaged together, the variables making up classroom instruction and climate had almost as much impact on student learning as student aptitude. In fact, one of the teacher-related factors—classroom management—had the most impact of all 28 factors. The researchers defined classroom management as including—"group alerting, learner accountability, smooth transitions, and teacher "with-it-ness" (1993/94, 76), and went on to say "effective classroom management increases student engagement, decreases disruptive behaviors, and makes good use of instructional time" (1993/94, 76).

With the massive amount of research conducted in education, research such as this that analyzes and summarizes other research can be especially valuable to busy educators, especially if the researchers are explicit in what the lessons learned mean for everyday educational practice. Work from three such research projects is summarized briefly in this article.

The research studies summarized vary in the instructional strategies they identify as important to student learning since different studies were analyzed and different research approaches used. However, there is some overlap among the strategies found to be effective. For example, Walberg and Paik as well as Brophy identify the positive impact of strategy instruction on student learning.

Effective General Practices (Walberg and Paik)

In the *Handbook of Research on Improving Student Achievement* (2004), Walberg and Paik identify nine instructionally-related practices that "can be applied widely to the academic subject matter of kindergarten through 12th grade . . . [and that] show powerful and consistent effects for students in widely varying circumstances" (2003, 25). The researchers emphasize the importance of the teacher in implementing these practices since "as with all educational practices . . . they can be effectively or ineffectively planned and conducted, and the results will vary accordingly" (2003, 25).

- Graded homework. Students learn more when they complete homework that is graded, commented upon, and discussed by their teachers. The role of the teacher in providing feedback—in reinforcing what has been done correctly and in reteaching what has not—is key to maximizing the positive impact of homework.
- Aligned time on task. Students who are actively focused on educational goals do best in mastering the subject matter. The teacher's skillful classroom management, by taking into account what is to be learned and identifying the most efficient ways to present it, increases effective study time. Students who are actively engaged in activities focused on specific instructional goals make more progress toward these goals.
- Direct teaching. This process emphasizes systematic sequencing of lessons, presentation of new content and skills, guided student practice, the use of feedback, and independent practice by students. The traits of teachers employing effective direct instruction include clarity, task orientation, enthusiasm, and flexibility. These teachers also clearly organize their presentations.
- Advance organizers. Showing students the relationships between past and present learning increases the depth and breadth of student learning. When teachers explain how new ideas in the current lesson relate to ideas in previous lessons and other prior learning, students can connect the old with the new, which helps them to better remember and understand. Similarly, alerting them to key points to be learned allows them to concentrate their attention on the most crucial parts of the lesson.
- Teaching of learning strategies. Delegating some control to students for learning goals and the

monitoring of personal progress in achieving them yields learning gains. Some students have been found to lack this self-awareness and must be taught the skills necessary to monitor and regulate their own learning. Many studies have demonstrated this can be done and that positive effects can accrue.

- Tutoring. Teaching one student or a small number with the same abilities and instructional needs can be remarkably effective. If well-organized, peer tutoring (tutoring of slower or younger students by more advanced students) is also an effective practice. Significantly, peer tutoring promotes effective learning in tutors as well as tutees. The need to organize one's thoughts to impart them intelligibly to others, to become conscious of the value of time, and to learn managerial and social skills are probably the main reasons for benefits to the tutor.
- Mastery learning. When there is subject matter to be learned in a sequence, thorough mastery of each step is optimal. Because of its emphasis on outcomes and careful monitoring of progress, mastery learning can save learners' time. It allows more time and remediation for students who need it. It also enables faster learners to skip material they already know.
- Cooperative learning. Students in small, self-instructing groups can support and increase each other's learning. Learning, as shown by more than 50 studies, proceeds more effectively than usual when exchanges among teachers and learners are frequent and specifically directed toward students' problems and interests. When students work in groups of two to four, each group member can participate extensively, individual problems are more likely to become clear and to be remedied (sometimes with the teacher's assistance), and learning can accelerate.
- Adaptive education. Adaptive education is an integrated diagnostic-prescriptive process combining several preceding practices—tutoring, mastery and cooperative learning, and instruction in learning strategies—into a classroom management system to tailor instruction to individual and small-group needs. Its focus on the individual student requires that barriers to learning first be diagnosed and then a plan be developed to address those needs. It requires planning, time allocation, task delegation to aides and students, and quality control. It is a comprehensive program for the whole school day rather than a single method requiring simple integration into one subject.

Teaching (Brophy)

In *Teaching*, Brophy stresses that "no single teaching method (e.g., direct instruction, social construction of meaning) can be the method of choice for all occasions. An optimal program will feature a mixture of instructional methods and learning activities" (1999, 6). He then goes on to describe his work as a:

> synthesis of principles of effective teaching that have emerged from research in classrooms. It addresses generic aspects of curriculum, instruction, and assessment, as well as classroom organization and management practices that support effective instruction. It focuses on learning outcomes but with recognition of the need for a supportive classroom climate and positive student attitudes towards schooling, teachers, and classmates (1999, 6).

Brophy includes what he describes as principles of effective teaching in his summary of research:

- A supportive classroom climate. Students learn best within cohesive and caring learning communities.
- Opportunity to learn. Students learn more when most of the available time is allocated to curriculum-related activities and the classroom management system emphasizes maintaining student engagement in those activities.
- Curricular alignment. All components of the curriculum are aligned to create a cohesive program for accomplishing instructional purposes and goals.
- Establishing learning orientations. Teachers prepare students for learning by providing an initial structure to clarify intended outcomes and cue desired learning strategies.
- Coherent content. To facilitate meaningful learning and retention, content is explained clearly and developed with emphasis on its structure and connections.

- Thoughtful discourse. Questions are planned to engage students in sustained discussion structured around powerful ideas.
- Practice and application activities. Students are provided with sufficient opportunities to practice and apply what they are learning, and to receive improvement-oriented feedback.
- Scaffolding students' task engagement. The teacher provides whatever assistance students need to enable them to engage in learning activities productively.
- Strategy instruction. The teacher models and instructs students in learning and self-regulation strategies.
- Cooperative learning. Students often benefit from working in pairs or small groups to construct understandings or help one another master skills.
- Goal-oriented assessment. The teacher uses a variety of formal and informal assessment methods to monitor progress towards learning goals.
- Achievement expectations. The teacher establishes and follows through on appropriate expectations for learning outcomes.

What Works in Classroom Instruction (Marzano, Gaddy, and Dean)

Marzano, Gaddy, and Dean used a research technique referred to as "meta-analysis, a strategy that combines results from a number of studies to determine the net effect of an intervention" (2000, 2). These researchers identify the following instructional approaches that "work well with all types of subject matter knowledge" (2000, 135) and demonstrate a positive impact on student learning:

- Identifying similarities and differences. This category of instructional strategies requires "students to analyze two or more elements in terms of their similarities and differences on one or more characteristics" (2000, 9) and includes approaches such as comparing, classifying, creating metaphors, and creating analogies.
- Summarizing and note taking. Both require students to "mentally sift through and synthesize information" (2000, 27).
- Reinforcing effort and providing recognition. These strategies "deal with students' attitudes and beliefs and, thus, are likely to affect students' level of engagement in cognitive processes" (2000, 49).
- Homework and practice. These strategies provide students with opportunities to deepen their proficiency and understanding.
- Nonlinguistic representations. "Generating mental pictures of information enhances recall and understanding" (2000, 69). Examples include graphic organizers, pictures and pictographs, mental pictures, concrete representations, and kinesthetic activity.
- Cooperative learning. The researchers stress that cooperative learning needs to be carefully structured (for example, including the element of positive interdependence) and not overused.
- Setting goals and providing feedback. "Goal setting is defined as the process of establishing direction and purpose" (2000, 98)—a metacognitive strategy. Feedback about students' progress is "one of the most generalizable strategies a teacher can use" (2000, 98) and a tool to enhance learning.
- Generating and testing a hypothesis. This approach involves applying knowledge, a key step in ensuring that students both understand and retain material learned.
- Activating prior knowledge. These strategies help students retrieve what they already know and include approaches such as "cues and questions, as well as advance organizers" (2000, 123).

Implications for the Classroom

Although each of the research findings about effective teaching provides important imformation, it also is helpful to focus on particularly significant elements. The broad base of research on teaching converges to identify three major areas of effective behavior, specifically:

- effective classroom management;
- use of instructional approaches that actively engage students; and
- efficient use of instructional time.

Effective Classroom Management

Classroom management is more than dealing with disruption. It is proactively organizing all elements of the classroom so that students are unlikely to misbehave. Most important, it is recognizing that instruction and management must be woven together to build a powerful learning environment.

Tanner, Bottoms, Feagin, and Bearman expand on the implications of this for teachers:

> Well-managed classrooms are organized to support the learning environment. Managing a classroom is much more than maintaining discipline; it is a complex task that involves the interaction of teachers and students and the organization of materials and space (n.d., 35).

Lindberg and Swick (2002) emphasize another aspect of classroom management: the importance of consistency for smooth transitions between subjects, classrooms, and learning activities. Effective teachers explain their rules and procedures on the first day and then adhere to these throughout the school year. These smooth transitions also contribute to another key component of good teaching—the effective use of time.

Use of Instructional Approaches that Actively Engage Students

Research consistently finds that the degree to which students are actively engaged in learning has a strong impact on the levels of student achievement (see, for example, Center on English Learning and Achievement 2000; Haberman 1995). Characteristics of classrooms identified as increasing student engagement include:

- A positive and caring learning climate, in which constructive student/teacher interactions take place. In these classrooms, students and teachers share common interests and values and emphasize cooperative goals (Wang, Haertel, and Walberg 1993/94; Brophy n.d.).
- Effective presentation of material and questioning. Effective teachers prepare students for learning by providing an initial structure to clarify intended outcomes and cue desired learning strategies. They provide students with a broad outline of the lesson before instruction begins, explain content clearly, and develop information with emphasis on structure and connections. They plan questions to engage students in discussion structured around powerful ideas (Brophy n.d.).

Stronge describes the effective teacher as one who "facilitates the classroom like a symphony conductor who brings out the best performance from each musician to make a beautiful sound" (2002, 83). Some "positive qualities" that characterize these effective teachers, as well as some "red flags of ineffective teaching" are provided below:

Positive Qualities

- uses student questions to guide the lesson
- uses pre-assessments to guide instruction
- uses established routines to capture more class time (e.g., students have roles to play, such as passing out materials so the teacher need not stop the momentum of the lesson)
- incorporates higher-order thinking strategies
- uses a variety of activities and strategies to engage students
- monitors student engagement
- has high numbers of students actively involved in the class continuously
- adjusts the delivery and pacing of the lesson in response to student cues
- effectively uses the entire classroom (e.g., teacher movement throughout the classroom)
- provides feedback (verbal, nonverbal, and written)
- designs and bases assignments on objectives
- assists students in planning for homework assignments

Red Flags of Ineffective Teaching

- gives vague instructions for seatwork, projects, and activities
- is unresponsive to student cues that the delivery of instruction is ineffective
- lacks variety in instructional methods used
- has difficulty individualizing instruction
- uses outdated material or terminology
- fails to implement needed changes pointed out by peers or supervisors
- transitions slowly between activities or lessons (Excerpted from Stronge 2002, 83–84)

- Sufficient opportunities for students to practice and apply what they are learning and to receive improvement-oriented feedback (Brophy n.d.).
- Attention to individual students' learning needs. The teacher provides whatever assistance students need to enable them to engage in learning activities productively (Brophy n.d.). One way in which effective teachers accomplish this is through "coaching/scaffolding," in which the teacher supports/prompts/coaches the child, providing just as much assistance as the child needs to perform a task (Taylor et al. 1999).
- Use of a variety of groupings for instruction. Students often benefit from working in pairs or small groups to construct understanding or help one another master skills (Brophy n.d.). The small groups, if ability-based, should be flexible, with periodic assessments used to review the placement of individual children.

Tanner, et al. suggest that another important aspect of ensuring that students are actively engaged in learning—while they learn required knowledge and skills—is a balance between teacher-directed instruction and student-centered learning. They provide an example:

> A teacher may work with students to design a community project that requires them to collect, plot, and analyze data. Before the project begins, the teacher decides whether the students have all the skills needed to perform the task. He or she determines whether [they] need direct instruction in survey techniques and particular mathematical skills and monitors students' progress throughout the activity, providing support and additional instruction as needed (n.d., 5).

Efficient Use of Time

A third important teacher skill that research has linked to high levels of student learning is the effective and efficient use of instructional time. Teachers can make efficient use of time through the following strategies.

Quality and pacing of instruction. In their review of research focusing on teacher behavior and student achievement, Brophy and Good state that "the most consistently replicated findings link achievement to the quality and pacing of instruction" (1986, 360). Effective teachers structure instruction so that "students are engaged in activities that are appropriate in difficulty level and otherwise suited to their current achievement levels and needs . . . . [They are] effective in diagnosing and prescribing appropriate activities" (Brophy and Good 1986, 360). Smith, Lee, and Newmann (2001) found that too much review—in essence, slower pacing—resulted in lower levels of student learning, apparently because it limits the time available for the presentation of new material.

Curriculum alignment. In classrooms that produce high levels of learning, "All components of the curriculum are aligned to create a cohesive program for accomplishing instructional purposes and goals" (Brophy n.d., 13). The intended curriculum is taught, and materials, activities, and assessments all support this.

Effective use of assessment. Effective teachers are more likely to use a variety of formal and informal assessment methods to monitor progress towards learning goals (Brophy n.d.). They use the results of these assessments to adjust instruction for both the class as a whole and for individual students.

Observing Effective Teachers: What One Research Study Found

Pressley et al. (1998) observed 30 first-grade teachers and then identified teachers they characterized as effective on the basis of observed levels of student engagement and classroom literacy performance. These most effective teachers were found to spend

Tanner, et al. describe elements of teacher-directed instruction that encourage student engagement and learning. Teachers should:

- begin a lesson with a short review of pre-requisite material;
- provide a short statement of goals for the lesson;
- present new material in small steps, with student practice after each step;
- give clear, detailed instructions and explanations;
- provide a lot of active practice for all students;
- ask many questions and get answers from all students;
- guide students during initial practice;
- provide systematic feedback and correction; and
- provide explicit instruction, practice, and monitoring for seatwork exercises (n.d., 6).

significant amounts of time preparing materials for student use. Behavioral problems were less likely to occur because materials were well-organized for the next activity and transitions were short and smooth. These well-prepared lessons also increased the amount of academic time-on-task.

These teachers were characterized as being very "with-it"—they were constantly aware of what was taking place in the room and were therefore able to prevent disruptions before they interfered with learning. They were likely to move through the room as they taught, and they continually monitored the progress of students as they worked.

Well-established routines and procedures were also part of the most effective teachers' classrooms. Routines and procedures were typically posted in a prominent location. Students knew what to do and what was expected of them, and they were able to work independently. To facilitate this, effective teachers arranged the room so that the students had easy access to commonly used materials.

The effective teachers maintained a cooperative classroom environment, handling situations both positively and constructively. These teachers frequently praised their students, reinforcing desired actions and establishing a feeling of mutual respect between themselves and the students. Effective teachers did not identify winners and losers; instead, they urged each student to work to the best of his or her ability.

The effective teachers taught students at the instructional level appropriate for each of them, consistent with the theory that optimal learning occurs when students receive instruction one level above their independent level. These teachers engaged in frequent coaching and scaffolding of their students' learning as they monitored instruction to ensure that it was appropriately challenging.

These teachers also retaught skills to students if assessments revealed that the students were having difficulty with a topic. This typically took the form of presenting the skill in a new manner and providing coaching in strategies that could be used to implement it. The reteaching of skills often took place in a small-group format so that the students received individualized attention.

est amount of time on task and made the greatest gains in all subject areas with teachers who integrated reading and writing activities across the content areas. Effective teaching in this regard meant using science or social studies texts to teach reading and comprehensive skills, teaching reading and writing together as a joint process, and integrating writing into math lessons, to cite a few examples.

In Summary

The knowledge base about the components of effective teaching provides a powerful tool for teachers. Use it to assess your own teaching. Engage in conversations about effective teaching with fellow teachers. Assess opportunities for professional development available through your school and district from the perspective of skills you want to strengthen. By viewing yourself as another learner in your classroom, you can continuously expand your repertoire of teaching strategies—and both you and your students will benefit.

References

Bratton, S.E., Jr. (1998). How we're using value-added assessment. *The School Administrator* (December 1998), 30–32.

Brophy, J. (n.d.). *Teaching*. Geneva, Switzerland: International Academy of Education. Retrieved from http://www.ibe.unesco.org

Brophy, J., & Good, T.L. (1986). Teacher behavior and student achievement. In M. C. Wittrock (Ed.), *Handbook of Research on Teaching* (3rd ed.). New York: Macmillan.

Center on English Learning and Achievement. (2000, Winter). Engaging students in meaningful conversations leads to higher achievement. *Newsletter*. Retrieved from http://cela.albany.edu/newsletter.htm

Haberman, M. (1995). *Star teachers of children in poverty.* West Lafayette, IN: Kappa Delta Pi.

Lindberg, J.A., & Swick, A.M. (2002). *Common-sense classroom management: Surviving September and beyond in the elementary classroom.* Thousand Oaks, CA: Corwin.

Marzano, R.J., Gaddy, B.B., & Dean, C. (2000). *What Works in Classroom Instruction*. Aurora, CO: Mid-continent Research for Education and Learning.

Pressley, M., Wharton-McDonald, R., Allington, R., Block, C.C., & Morrow, L. (1998). *The nature of effective first-grade literacy instruction.* Albany, NY: SUNY Albany. Retrieved from http://cela.albany.edu/1stgradelit/literacy.html

Smith, J.B., Lee, V.E., & Newmann, F.M. (2001). *Instruction and achievement in Chicago elementary schools*. Chicago: Consortium on Chicago School Research. Retrieved from http://www.consortiumchicago.org/acrobat/InstructionReport.pdf

Stronge, J.H. (2002). *Qualities of effective teachers.* Alexandria, VA: Association for Supervision and Curriculum Development.

Tanner, B.M., Bottoms, G., Feagin, C., & Bearman, A. (n.d.). *Instructional strategies: How teachers teach matters.* Atlanta, GA: Southern Regional Education Board.

Taylor, B., Pearson, D., Clark, K., & Walpole, S. (1999). *Beating the odds in teaching all children to read.* Ann Arbor, MI: Center for the Improvement of Early Reading Achievement.

Wang, M.C., Haertel, G.D., & Walberg, H.J. (1993/1994). What helps students learn? *Educational Leadership* (December 1993/January 1994), 74–79.

Walberg, H.J., & Paik, S. (2004). Effective Practices. In G. Cawelti (ed.), *Handbook of Research for Improving Student Achievement* (3rd ed.). Arlington, VA: Educational Research Service.

Questions for Discussion and Reflection

- Review the "Positive Qualities" and "Red Flags of Ineffective Teaching" listed on page 5. Use this list as an occasional "self-check" of your teaching.
- The text lists quality and pacing of instruction, curriculum alignment, and effective use of assessment as ways that teachers can make efficient use of time. Brainstorm/discuss additional suggestions with fellow teachers.
- Use the components of effective teaching mentioned throughout the text as a mental checklist to evaluate your own instructional practices. What aspects of your teaching skills would you like to strengthen?

The following ERS *Info-Files* are related resources available from ERS. These resources provide an overview of research and information to give you a general understanding of a particular topic or concern in K-12 education. Each *Info-File* contains 70-100 pages of articles from professional journals, summaries of research studies and related literature, and an annotated bibliography that includes an ERIC-CIJE search. Base cost-recovery price per title: $40. Subscriber discounts are available.

Learning Styles/Teaching Styles (NT#-5177)

Focuses on learning styles, the particular modality in which a student learns best, and teaching styles, or the manner in which a teacher presents information to students. Examines ways to identify styles, models and methods for adapting to learning styles, matching learning/teaching styles, and research findings and critiques of the styles concept.

Teacher Expectations, Teacher Efficacy, and Student Achievement (#NT-5201)

Focuses on how teacher expectations and behaviors affect student achievement, how teachers treat students with various abilities and backgrounds, and how teachers can be encouraged to set high standards for all students. Also discusses teacher efficacy—a teacher's belief in his/her own ability to influence student learning.

Developmentally Appropriate Instruction (NT#-5111)

Discusses attuning programs and practices to needs of younger students regardless of chronological age. Covers appropriate criteria, assessments, policy, and academic demands for younger students.

For more information on effective teaching for high student achievement, see: *Handbook of Research on Improving Student Achievement.* This third edition of the *Handbook*, published in 2004, includes updated research on more than 100 successful K–12 teaching practices that have been shown to result in higher student achievement. These hands-on tools enable educators to learn to apply the most appropriate practice or technique for a specific goal or setting. Item #NT-538. Base price: $44.

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