

**INCREASING ACADEMIC MOTIVATION IN
PRIMARY GRADES**

MICHAEL PRESSLEY

SARA DOLEZAL

LISA RAPHAEL

LINDSEY MOHAN

Michigan State University

ALYSIA ROEHRIG

University of Notre Dame

KRISTEN BOGNER

University of Minnesota

This review of research into motivation begins with the various approaches to increasing academic engagement that have been validated in studies, especially in the past quarter century. Two brief case studies of exceptionally engaging primary teachers, both working in Catholic schools, follow. General findings from qualitative studies of primary grade teaching affirm that engaging teachers fill their classrooms with instruction that promotes motivation and do little that undermines student motivation. This contrasts with less engaging teachers who do less that is motivating and more that undermines academic motivation. Thus, every minute of every day the engaging teachers do what the best educational motivation researchers have identified as effective. The review concludes by recognizing that such engaging instruction is consistent with Catholic philosophy of education.

One of the most critical issues in American education is that many students are not motivated by what happens in school. As a consequence, teachers want to know more about how to motivate them (O'Flahavan et al., 1992). The educational research community has responded, providing many insights about specific instructional approaches that work to increase academic motivation as well as teaching practices that can undermine motivation. In this light, this article first answers the question, "What should teachers do to motivate their students academically?" After reviewing the most important research about academic motivation in the past quarter century, the article

then examines the question, "What do engaging primary-grade teachers do to engage their students?" Then, the results of 3 years of observational study of engaging and not-so-engaging primary-grade teachers are briefly summarized. A list of engaging behaviors is included in the appendix.

WHAT SHOULD PRIMARY-GRADE TEACHERS DO TO MOTIVATE THEIR STUDENTS?: A QUARTER CENTURY OF RESEARCH INSIGHTS

Most researchers studying academic motivation have focused on one or a very few mechanisms. Hence, this literature review covers a number of individual motivational mechanisms. For the most part, researchers have studied academic motivation using traditional experimental and correlational research approaches, with much of this research appearing in the very best educational research outlets. The conclusions that follow are well respected by the research community and considered to be the products of excellent educational science.

The first two subsections cover two sets of findings that have received much attention from researchers: (a) classroom competition, which is universal in Western schooling, undermines student motivation; (b) teacher expectations can have dramatic effects on student motivation. A discussion about how to affect classroom motivation concludes the section.

HOW CLASSROOM COMPETITION UNDERMINES STUDENT MOTIVATION

Given American commitment to competition in the marketplace, competition in American schools makes intuitive sense to many. For example, traditional grading schemes provoke much competition in American schools (Nicholls, 1989). What does it mean to a child to receive As? The message is, "You're smart, smarter than others!" Conversely, for the child getting Cs, the message often is, "You're not so smart, and certainly not as smart as the A students." Years of such messages make a difference. Thus, by the end of the grade-school years, students who have struggled in school are convinced they have low ability (Jacobsen, Lowery, & Ducette, 1986; Pearl, 1982). Often these students have tried hard. Failing has been devastating for them, leading them to believe that there is nothing they can do to achieve now or in the future (Covington & Omelich, 1979a, 1979b). Once students embrace this belief, there is no motivation to try (Carr, Borkowski, & Maxwell, 1991; Dweck & Bempechat, 1983).

Trying hard and failing is painful, and in competitive classrooms relative failure is often a certainty for many students (Ames, 1984; Ames & Ames, 1981). For children who cannot possibly get the A, not trying can reduce the

pain in several ways. First, not trying means that the frustration associated with trying and doing poorly evaporates. Beyond that, however, when students fail after not trying, they can honestly say, "I didn't try," which feels a lot better than facing the reality that failure after trying was probably because of low ability. Thus, students can actually feel better about themselves by not trying than by trying and failing (Covington & Omelich, 1981, 1984; Nicholls, 1989).

Competitive grading undermines the motivation of the students getting the A grades. Some of these students probably could achieve at an even higher level, but why bother? All that counts is doing better than the other students. Doing academic work well is much less relevant (Ames & Felker, 1979; Barnett & Andrews, 1977; Johnson & Johnson, 1974; Levine, 1983).

Although competition is a good model for the American economic marketplace much of the time, it is not so for the academic marketplace.

TEACHER EXPECTATIONS AND STUDENT MOTIVATION

In a well-known study conducted by Rosenthal and Jacobson (1968), all children in a school were administered a standardized test that was represented as predicting which children would excel in the upcoming school year. The researchers presented the outcomes of the test to the teachers in the school, with 20% of the children identified as likely to blossom during the school year ahead. In fact, at the end of the school year, the 20% of children cited as likely to blossom did, in fact, bloom. They showed a lot of improvement on the standardized test over their fall performance. Did this demonstrate the power of the fall test to predict who could achieve? Hardly, for the 20% of students who were identified as likely to improve during the upcoming school year were selected at random. There was no basis for expecting them to improve any more than any of the other children in the school. Rosenthal and Jacobson (1968) argued that the teachers' expectations propelled these children to achieve highly during the year. Just as Pygmalion had been transformed by a teacher's expectations, so it was in Rosenthal and Jacobson's (1968) study.

In general, in replication studies, other researchers failed to obtain the dramatic outcomes in the initial study (Goldenberg, 1992). If there is any effect of teacher expectations alone on student achievement, it is small (Rosenthal, 1985). A student does not do well or poorly just because a teacher is told the child is going to do well or poorly, as was the case in Rosenthal and Jacobson's (1968) original research.

Teachers' expectations do matter a great deal, however, for teachers behave very differently toward students who show more versus less promise, as documented by Brophy and Good (1970, 1974) and Brophy (1985). They observed:

- Teachers do not wait as long for low-ability students to answer questions as they do for high-ability students.
- When low-ability students hesitate to answer a question, teachers are more likely to give them the answer or call on someone else.
- Low-ability students receive more teacher criticism, less praise, and less helpful feedback than high-ability students.
- Teachers pay less attention to and call less frequently on low- than high-ability students.
- Low-ability students are seated farther from the teacher than high-ability students.
- Teachers attempt to control the behaviors of low-ability students more than high-ability students.
- Teachers demand less academically from low-ability than high-ability students.
- With respect to grading, teachers are less likely to give the benefit of the doubt to low-ability compared to high-ability students.
- Teachers are less friendly with low-ability compared to high-ability students.
- Teachers do not respond as completely to questions posed by low- compared to high-ability students.

In short, teachers often interact with students they perceive to be weaker students in ways that should undermine student motivation. What motivation is there to participate in class if the teacher does not wait for an answer, when criticism is common, praise seldom, and helpful feedback rare? Why try hard when the teacher ignores you or is not friendly to you in comparison to other students? There are, however, many ways that teachers can increase academic motivation.

MANY MEANS OF INCREASING ACADEMIC MOTIVATION

Researchers have identified many mechanisms that can affect students' reactions in classrooms. Even a brief review makes clear that there is much classroom teachers can do to affect student motivation.

REINFORCEMENT

Positive consequences for a behavior increase the likelihood of the behavior. Such positive consequences, referred to as reinforcements by psychologists, often increase motivation (Skinner, 1953). Nonetheless, sometimes providing reinforcements undermines motivation. Specifically, if a student is given a reward for doing something she or he would do in the absence of a reward (i.e., the behavior is intrinsically motivating to the student), the likelihood of doing the behavior in the future is reduced when no reward is available. Thus, if an avid reader suddenly begins to receive pizza certificates as rewards for reading books, the child's intrinsic motivation to read might actually decrease

(Lepper, Greene, & Nisbett, 1973; Lepper & Hoddell, 1989).

Although there is considerable debate about declines in intrinsic motivation due to rewards, there is substantial evidence that declines in intrinsic motivation sometimes are due to providing explicit rewards for previously intrinsically motivated behaviors (Cameron, 2001; Deci, Koestner, & Ryan, 2001a, 2001b; Lepper & Henderlong, 2000). Extrinsic rewards should be used with care, with the teacher alert to the possibility of negative consequences of rewarding children who are already intrinsically motivated.

Teachers should use rewards when students are not intrinsically motivated to do an important academic behavior (Bandura & Schunk, 1981; Lepper & Hoddell, 1989; Loveland & Olley, 1979; McLoyd, 1979). Providing pizza certificates to readers who would not otherwise read makes sense.

Rewards do not have to be tangible, however. One of the most powerful rewards that a teacher can use is praise, although it is critical that praise be used well if it is to be effective. Brophy (1981; Henderlong & Lepper, 2002) provided definitive guidance about how to do so:

- Like any reinforcement, praise should be delivered as soon as possible after the student does something that is praiseworthy.
- In delivering the praise, the teacher should identify the behavior that was praiseworthy. Students should be told that they are competent and what they are doing is valuable.
- Praise should be sincere and should reflect that the teacher knows what the student is accomplishing.
- The teacher should let the student know that she or he can be successful in the future by continuing to exert appropriate effort.
- The teacher should remind the student about how enjoyable it is to expend the praiseworthy effort (e.g., "I know you really enjoyed learning about the rain forest as we read this book").

Praise is reinforcement that is richly informative to students. It is not easy for teachers to praise effectively, however (Brophy, 1981). Some teachers simply praise anything a student does, which can make the classroom atmosphere seem positive but does not provide students with critical information about what they should be doing. Other teachers simply do not expend the effort to praise at all.

In summary, a clear concept found in the motivation literature is to reward behaviors that should be strengthened. Providing rewards often increases student motivation, although rewards can undermine intrinsically motivated behaviors. Perhaps most critical, rewards need not be tangible to be effective, with teacher praise a very powerful reward.

COOPERATIVE LEARNING

Cooperative learning, which involves several students working together rather than working alone, consistently produces at least small learning benefits and sometimes quite large learning benefits. David W. and Roger T. Johnson (Johnson & Johnson, 1975, 1979) have greatly increased understanding about when and how cooperative learning is effective. For there to be cooperative learning, learning has to be interdependent. Students have to be given tasks that are large enough that they can only be accomplished by students working together. The Johnsons have produced considerable evidence that small groups work better than large groups, that constructive and engaging interactions over academic tasks are more likely with three to four children interacting face-to-face than an entire class confronting a task.

What is absolutely essential, however, is that there be individual accountability. The groups and tasks cannot be structured so that everyone is rewarded if only one or two students work. What works especially well is when there are both group and individual rewards (Slavin, 1985a, 1985b). Thus, perhaps a small group of students works on some type of arithmetic problems for the first 4 days of the school week. On day five, there is a test with students' grades determined not only by their own performance on the test, but also by the performance of group mates. Thus, a student getting 80% on the test would get a higher grade if her or his group's average was 85% versus 70%.

Cooperative learning is a very flexible mechanism that can be incorporated into a variety of content areas, used in kindergarten through college, and be applied with diverse children. For example, it is the main mechanism in some urban education reform efforts that are very effective in improving the academic achievements of inner-city students (Fantuzzo, King, & Heller, 1992).

MAKING ACADEMIC TASKS MORE INTERESTING

Student academic motivation can increase when content is intriguing or matched to student interests or illustrated with examples that are exciting to students (Hidi, 1990; Renninger, 1990; Renninger & Wozniak, 1985; Shiefele, 1991). There is a catch, however: Not all efforts to make content more interesting are going to increase student learning. For example, sometimes teachers or textbook writers include captivating anecdotes or seductive details (Garner, 1992; Wade, Schraw, Buxton, & Hayes, 1993) not essential to understanding the content. For example, the fact that George Bush enjoys baseball is mentioned in a lesson about the American presidency. Such intriguing details can distract attention from much more important facts about the presidency. A replicated finding is that adding seductive details to a text reduces learning and memory of more important information in the text

(Garner, Alexander, Gillingham, Kulikowich, & Brown, 1991; Wade & Adams, 1990).

Educational software also often suffers from distractions that can reduce attention to the material being taught by the software (Lepper & Malone, 1987; Malone & Lepper, 1987). For example, a math drill program set up as an arcade game can be filled with many flashing lights, bells, and whistles. If the game is programmed to end once the student has mastered the skills and content covered in the game, some students may intentionally generate incorrect answers so that they can continue playing.

BELIEFS ABOUT ACHIEVEMENT AND INTELLIGENCE

What people believe about their achievement and intelligence can go far in affecting their motivation. A number of researchers have provided theory and research substantiating that beliefs affect motivation.

Attribution theorists have documented that students explain their successes and failures in a variety of ways (Weiner, 1979). Students can attribute their performances to ability or to the difficulty of tasks. Sometimes students think that luck accounts for their performances. The problem with all of these explanations is that the students are attributing outcomes to factors that are out of their control.

Alternatively, students can attribute their performances to a factor which is under their control: personal effort. Attributing outcomes to effort gives those who succeeded an incentive to exert such effort in the future. This is why Brophy (1981) urged that in praising students, teachers remind them of their efforts exerted to deserve such praise. Attributing failure to lack of effort motivates the student to do more in the future in order to avoid failure.

Often students are taught strategies that require effort to implement. Students are more likely to use the strategies taught if the teacher explains to them that the strategies they are learning are worth the effort to use them, for their use permits task accomplishment (Carr & Borkowski, 1989). Once the student is successful, praising the success and reminding the student about how use of the strategy resulted in the success can enhance commitment to strategy use by strengthening the belief that performance depends on the intelligent use of appropriate strategies (Deshler & Schumaker, 1988; Graham & Harris, 1996).

As a general point, when people believe they can control their outcomes, there is greater motivation to try (deCharms, 1968; Martin & Martin, 1983). This perspective is explicit in Weiner's (1979) attribution theory, but it is also present in other theories that specify the importance of learner beliefs in academic motivation.

Some people believe that they inherit a fixed level of intelligence, which determines how well they will achieve academically. Others perceive that

their intelligence can increase with rich academic experiences and decrease if they do not work hard. Dweck and her associates (Dweck & Leggett, 1988; Elliott & Dweck, 1988; Henderson & Dweck, 1990) and others (Meece, Blumenfeld, & Hoyle, 1988; Wood & Bandura, 1989) have provided substantial evidence that believing intelligence is changeable by one's intellectual efforts and experiences motivates academic efforts, especially when students experience failure. Following failure, students who believe intelligence is God-given are more at risk of giving up, believing there is nothing they can do to improve. Students who believe that intelligence can increase with effort are more likely to keep trying following failure.

Success motivates, often by increasing student self-efficacy or strengthening a student's belief that she or he can do important academic tasks, such as reading (Bandura, 1977, 1986; Schunk, 1990, 1991; Zimmerman, 1989a, 1989b, 1990a, 1990b). Believing one can read, in turn, motivates reading of more books and trips to the library (Marsh, 1990; Zimmerman, Bandura, & Martinez-Pons, 1992).

It also helps to be surrounded by others who are able to do tasks. Thus, if other students in the class are figuring out how to do the problems covered in math lessons, students are more likely to believe they can learn how to do the same math problems (Schunk, 1990, 1991).

One approach to increasing success might be to give students only easy tasks. In fact, that does not increase self-efficacy and student motivation as much as giving students tasks that are moderately challenging (Harter, 1978; White, 1959). In addition, rather than leaving students to flounder when confronted with a task they cannot do, teachers can scaffold the students (Wood, Bruner, & Ross, 1976), providing enough support so that students can begin to make progress. The teacher does not do the task for the student, but rather provides hints, prompts, and enough instruction so that students can forge ahead. Students can have success with moderately difficult tasks with sufficient support, allowing them to see that they can solve challenging problems and understand challenging material.

Encouragement from significant others also can increase students' self-efficacy. If teachers tell students they can do math or be readers, the students are more likely to believe it (Schunk, 1990, 1991).

Just as success motivates, failure undermines motivation, especially when there are persistent and salient failures. For example, students who experience difficulties in reading during the first few years of school typically are not motivated to exert academic effort in the middle grades. They have come to believe they are stupid, and there is nothing they can do to increase the likelihood of academic success (Jacobsen et al., 1986; Pearl, 1982). Those struggling learners who can hold on to the belief that they can do better if they try hard are more likely to make academic progress than students who have come to believe that there is nothing they can do to affect positively their

achievements (Kistner, Osborne, & LeVerrier, 1988). Unfortunately, years of failure and the hurt feelings accompanying failure more typically produce feelings of personal incapacity and learned helplessness (Covington, 1987). The result is that such children often would prefer to do nothing academically rather than try and fail again (Covington & Omelich, 1981, 1984). Teachers who want to motivate their students do all they can to assure success for their students by making certain that students do not get caught up in a pattern of persistent and consistent failure.

Even though a student may be confident of doing well in math, math might not receive much effort if the student does not see the point of math. In fact, both self-efficacy with respect to academic content and valuing of the content are necessary for high achievement (Berndt & Miller, 1990). Thus, an important motivational element of teaching is to provide students with understanding that what they are learning is valuable now and in the future.

In summary, student beliefs can either motivate academic efforts or undermine them, both in the short term and long term. The message from this body of theory and research is that teachers should encourage students to believe that they can produce success through effort, and if they do so, they will become smarter and be successful in school and in the world beyond. Much good comes from success (including increased understanding that one is capable of doing the tasks; i.e., self-efficacy), especially success with tasks that are a bit challenging. Teachers can do much to encourage motivationally healthy beliefs, from scaffolding students when they are struggling to pointing out the many benefits of literacy, numeracy, and content knowledge.

PEDAGOGICAL CARING

Noddings (1984) heightened awareness of the role of teacher caring in student motivation and performance. The caring teacher is motivated to work hard with students, to teach them well. The goal of the caring teacher is not to lord over students and control them, but to help students be able to do educational tasks, to encourage students to feel they can accomplish academic tasks in a self-regulated fashion. Noddings sees teacher caring as a centerpiece of teaching that produces competent, motivated students.

This selective review of the recent educational motivational research makes clear that much can be done by teachers to increase academic motivation. All too often, however, the findings of educational researchers are far removed from the reality of classrooms. A major point in what follows is that at least some teachers seem to teach as motivational researchers believe they should teach, overseeing classrooms where students are happily involved in academic work. Thus, the remainder of this article examines the research that has convinced us that the many motivational mechanisms identified by researchers can be used in classrooms—or at least in primary classrooms, the focus of our research.

WHAT WE HAVE LEARNED FROM HIGHLY ENGAGING PRIMARY-GRADE TEACHERS

One of the best ways to inform teachers about how to motivate students is to showcase some very motivating teachers, documenting how they do what they do. We have searched for engaging teachers and found some, documenting in considerable detail what they do to motivate students (Bogner, Raphael, & Pressley, 2002; Dolezal, Welsh, Pressley, & Vincent, 2003; Pressley, Dolezal, Raphael, Welsh, & Bogner, in press).

We conducted this research informally by visiting many classrooms, observing whether students were engaged and the instruction that occurred. About 20% of the time, we saw very high engagement, invariably accompanied by indications of high achievement by students (e.g., impressive writing, reading of more advanced books than in same-grade classes that were not so impressive). We visited and observed such classrooms for as long as necessary in order to understand how the teachers produced such high engagement, continuing to visit, observe, and study the classrooms until no new insights were emerging in our work. We similarly observed classrooms that were less engaging. By the end of 3 years of study, we came to some definitive conclusions about how engaging primary teachers do what they do so well. What we found was that they did much that is consistent with instructional practices documented as effective by motivational researchers in the past quarter century.

We found some extraordinary teachers during this 3-year research journey, including two excellent primary-grade teachers serving in Catholic schools in South Bend, IN. Their teaching and that of other engaging primary teachers permitted some general conclusions: (a) Engaging primary-level teachers saturate their instruction with explicit efforts to motivate their students; (b) Such motivational instruction is in the context of generally good teaching, including use of diverse instructional approaches, coverage of content in interesting ways, and excellent classroom management.

Although the briefness of the two vignettes of teaching that follow understate the impressiveness of the teaching, they provide a peek into very motivating primary-grade classrooms. These case studies also concretize the general conclusions of our research, making clear that there are primary-grade teachers who do much to motivate their students.

NAOMI MICHAELS

Naomi Michaels teaches first grade in an urban Catholic school, serving socio-economically diverse families. Naomi's students always are motivated and eager to learn. Misbehavior does not seem to occur in her classroom, with reprimands the rare exception rather than a daily routine. Students always seem to know what they should be doing and do it. Transitions between tasks

are very smooth. The students mix well together, so well that the casual observer could not pick out the two students who receive free or reduced-price lunch. The students know each other well, in part, because they so often cooperate as part of doing their academic work, reading together, helping each other revise writing. Although Naomi's class is predominantly Caucasian, the Hispanic and African American children are treated by their peers as part of the gang, a gang that is obviously interested in school.

For example, they are attentive during story time. In other classes observed in our research, often story time was just a way to pass the time during snack. Story time in Naomi's class, however, is full of excitement and challenge, with a strong emphasis on good literature (e.g., *Black Beauty*, *A Christmas Carol*, *Charlie and the Chocolate Factory*, *The Call of the Wild*, *A Tale of Two Cities*). The students eagerly participate in discussions of these stories, enchanted by the stories themselves, but also by Naomi's enthusiastic and expressive rendering of them. During a very expressive reading of *Pumpkin Pumpkin*, Naomi proposed questions such as, "What do you think this story is about?" "How do you know?" "What do we know about ladybugs?" Naomi increased the excitement about the stories by revealing her personal feelings about them. She also increases interest in stories being read by relating them to upcoming class activities, such as when she related the upcoming science project involving growing carrots to the *Pumpkin Pumpkin* story.

Naomi's classroom is energetic and upbeat. There are new units every week or so, new big books being composed all the time, and new projects under construction. For example, in February, "Tiny Town," a student constructed representation of a working community, dominated the middle of the classroom. Tiny Town supported a writing workshop activity, with writing often in reaction to stories and books about community. A memorable display was the slab of concrete made by the students and a builder who had visited the class, with the builder connecting his work to the growth of the local community. In Naomi's classroom, there are strong connections across reading, writing, and content instruction.

In Naomi's school, the ethical development of students is a major issue. Naomi skillfully connected content learning to issues of moral and ethical development. For example, during Black History Month, Naomi read *The Story of Ruby Bridges* to the class. During the story, Naomi explained why she felt sympathy with the characters of the story and for African Americans who were affected by the Jim Crow laws. Later, during a discussion of the Black History Month book reports written by students, Naomi explained civil disobedience and contrasted it with some rules of society that should not be broken.

Naomi also related ethics to literature during the reading of *A Christmas Carol*. Naomi engaged the class in discussions about the author's background

and how Dickens' experiences shaped his writing. In addition, Naomi linked ethics to the story by explaining why Scrooge should not be hated, with students expressing sympathy for Ebenezer in subsequent commentaries.

For the story *Franklin and the Tooth Fairy*, Naomi reminded the students of a previous lesson on good hygiene. She also crafted an ethical lesson about celebrating the differences among people, prompting the students to think about, "What would this world be like if everyone was the same?" When the class read *My River*, Naomi praised her class for picking up the trash on the ground during the previous day's field trip, reflecting with her students about how they understood better than many adults their responsibility to care for the earth.

We observed a great deal of direct instruction in Naomi's class. For example, Naomi modeled sounding out of words as thinking and problem-solving processes. She actively predicted as she read stories aloud, demonstrating for the class how good readers anticipate what might be in a story. She made clear to her students that understanding what they read would be part of reading for the rest of their lives. During one visit, Naomi provided her class with a detailed explanation of her goals in reading. Before doing so, she praised her students for the goals they had achieved in the first half of the school year, such as learning to sound out words. Then, she urged her students to strive for new goals during the second half of the school year, in particular, focusing on learning to read with expression.

Throughout the day, Naomi taught her students to use strategies and tactics for accomplishing the tasks of first grade, always sending the message that by expending effort to use the strategies employed by smart people, her students could achieve at high levels. Indeed, Naomi always urged her students to try hard and do their best in every activity. Effort was emphasized above all else. Thus, when the students received their report cards, Naomi reassured them that their most important grade was for effort.

Naomi's classroom was a supportive environment. She frequently praised her students, acknowledging that they were doing a good job. Students were well scaffolded as they attempted challenging tasks. For example, during a test, Naomi reminded students of the connection between a story on the test and their current science project.

In summary, we observed much engagement in Naomi's classroom, but also, much that Naomi did to motivate engagement. In fact, the observers documented 47 different mechanisms (praise, making effort attributions, choosing interesting material) that Naomi used to motivate students, with most of these mechanisms used every day. Just as important, Naomi simply did nothing that could undermine student motivation.

CATHERINE NELSON

Catherine Nelson teaches third grade in an advantaged Catholic school. One certainty in our research is that teaching children from well-to-do families does not guarantee engagement. Indeed, during this research and related work, we observed many classrooms serving socio-economically advantaged populations in which engagement was anything but certain. Not so in Catherine's classroom, where every minute, every day, every child is caught up in challenging academic work.

A centerpiece of her teaching is math and science instruction, involving many hands-on, manipulative experiences and multiple ways of comprehending the same phenomenon. For example, during one math lesson Catherine taught the students how to fold a piece of paper to make a magic multiplier, which the students used to practice math facts. On the day we observed, the multiples of 4 were being practiced. Catherine complemented the use of the magic multiplier to practice the multiples of 4 with a taped song with lyrics including multiples of 4 equalities. In addition, Catherine provided both flash cards on the multiples of 4 and a homework page. Catherine also took advantage of unexpected opportunities to re-explain various relationships or representations. For example, when discussing that one-half of 10 was 5, Catherine showed the students the equation $10/2 = 5$. When mentioning the number 1,000, Catherine reflected that it was the same as ten 100s. When discussing 0.8, Catherine pointed out that this was equivalent to $8/10$ and that 80 cents was 0.8 of a dollar. On a subsequent visit, Catherine reminded the students about decimal fractions while they did a science experiment, connecting the curriculum with students' experiences.

The students loved doing work with manipulatives. During an exercise on ordered series, Catherine had them predict the weights of objects using their hands before they weighed the objects on a scale, with students placing the weights in a descending order from predicted heaviest to lightest. To make this exercise even more interesting, Catherine had the students bring their favorite toys as some of the objects to be weighed. As the students did their work, Catherine led them to believe more fun was coming ("This is not even the fun part of the lesson, yet"). As an introduction to fractions, Catherine had the students make a Fractional Person, which included having the students create a self-portrait using equal squares of different colors. When the picture was completed, the students listed the colors and the fraction of the picture represented. The students then had to show that when all the different colored parts were added together, it equaled one whole person. By the end of the lesson the students seemed to understand the concept of fractions.

A hallmark of Catherine's teaching was scaffolding. For example, when Catherine observed several students struggling in the same way, she offered a mini-lesson or hints to the entire group, such as during a dictionary exer-

cise: "Sometimes we need to look for the base or root word." "What does *fid-* get begin with?" "Look at the first few letters....Is it before or after the h?...Look at the guidewords."

When students were off task, Catherine quickly moved to get them back on task, typically by letting them know that the work assigned was challenging but possible, and then, perhaps, providing a hint to help them get started. She was also effective at adjusting tasks as students performed them to make them a bit challenging but not overwhelming.

This was an exceptionally positive classroom. For example, Catherine fostered excitement in students. At the end of the lesson on decimals, she previewed that the next day's lesson would teach students how she calculated the percentages marked on their tests, describing this knowledge as "cool." It was obvious after this introduction that students were looking forward to the lesson. In addition, Catherine frequently praised her students. After the class made hand cream as part of a science demonstration, Catherine pointed out to classroom visitors this accomplishment: "You'll have to try the hand cream we made in science." The day was filled with comments like, "I love the way Nick is waiting patiently for me," "Good independent thinking. You're doing a great job," and "Good idea—getting books out and reading while you're waiting." The walls were also filled with student work, sending the message to visitors that the students in this classroom did much that should be displayed.

There were very high expectations. Catherine was always sending the message that she expected students to do well. She made very clear what was to be mastered and when. So, when students were working on the multiples of 4, she made certain the students knew when the test would be given. And, the emphasis on effort could not be missed. When a student knew all the math facts that had been assigned as homework, Catherine remarked, "Did you practice last night? See what happens!"

Catherine encouraged her students to think on their own. She encouraged them to think critically and to use the thinking skills and strategies they had been taught; and she encouraged students to be intellectual risk takers, but always with an emphasis on working together cooperatively. The encouragement to think well and work hard, however, was never oppressive but, rather, consistently playful, consistently positively toned. Catherine Nelson's classroom is a very positive place.

HOW ENGAGING TEACHERS MOTIVATED THEIR STUDENTS

Across the 3 years of study (one year at grade 1, one at grade 2, and one at grade 3), the most engaging teachers always did much to motivate their students to work hard and do well. The appendix contains a summary of the

approaches to motivation that we saw consistently in the most engaging classrooms.

One reaction to the summary might be that it lists quite a few more mechanisms than are covered in this article. Our selective review could only focus on some of the most important motivational mechanisms that have been validated. Virtually every practice listed in the summary can be mapped to research that validates it as positively affecting student motivation (Pintrich & Schunk, 2001).

Teachers like Naomi Michaels and Catherine Nelson are clear examples that highly engaging instruction is possible in the primary grades. It must be emphasized that 80% of the primary teachers we observed were not so motivating, and, hence, not so engaging. Less engaging teachers use far fewer of the tactics in the appendix than Naomi and Catherine, and they do so less often. Importantly, less engaging teachers often behave in ways that actually undermine academic motivation of students and often:

- make ability attributions, that is, emphasize that achievement largely depends on the uncontrollable factor of innate ability. Just as bad, they sometimes make luck attributions for student successes and failures, with luck also out of student control.
- encourage competitiveness and discourage cooperation.
- discourage student curiosity (e.g., scold students who want to know what tomorrow's lesson is going to be about).
- provide tangible rewards when students are already intrinsically motivated.
- rarely scaffold, letting struggling students continue to struggle.
- provide ineffective, often negative, feedback.
- make few connections across the curriculum or across the school day.
- give students many easy tasks, with the pace of tasks and instruction often very slow.
- give students tasks that are much too difficult, perhaps accompanied by clear messages to the students that the tasks are over their heads.
- do not monitor which students need help and which students are easily completing assignments and should be given more challenging work.
- exercise poor or no lesson or unit planning.
- make grades public, increasing students' awareness when they have done worse than other students.
- scapegoat students.
- provide boring instruction and assignments.

Sadly, a nontrivial proportion of the less engaging classrooms we observed were dreary and negative classroom worlds, especially in contrast to the very positive classroom worlds created by Naomi Michaels, Catherine Nelson, and other engaging teachers we studied.

CONCLUDING THOUGHTS

Primary teachers who are not now engaging need to pursue two general directions: (a) eliminate instructional practices that undermine academic motivation; (b) strengthen those teaching behaviors that increase motivation. Neither is easy.

Encouraging such motivating teaching is especially sensible in Catholic schools. Groome (1998) points out that Catholic education at its best should parallel what we have seen in the engaging classrooms we have studied, classrooms that are hopeful and positive, emphasizing community and deep caring for students. Engaging classrooms are inclusive places, where all students feel welcome and valued every minute of every day. Teachers such as Naomi Michaels and Catherine Nelson model how teachers act when they are deeply committed to serving children justly, consistent with Catholic social justice ideals of education. As Noddings (1984) pointed out, an intense pedagogical caring perspective can go far in motivating teachers to work hard as they construct an engaging and effective classroom world.

REFERENCES

- Ames, C. (1984). Competitive, cooperative, and individualistic goal structures: A motivational analysis. In R. Ames & C. Ames (Eds.), *Research on motivation in education* (Vol. 1, pp. 117-207). New York: Academic Press.
- Ames, C., & Ames, R. (1981). Competitive versus individualistic goal structures: The salience of past performance information for causal attributions and affect. *Journal of Educational Psychology, 73*, 411-418.
- Ames, C., & Felker, D. W. (1979). Effects of self-concept on children's causal attributions and self-reinforcement. *Journal of Educational Psychology, 71*, 613-619.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*, 191-215.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, A., & Schunk, D. H. (1981). Cultivating competence, self-efficacy, and intrinsic interest through proximal self-instruction. *Journal of Personality and Social Psychology, 41*, 586-598.
- Barnett, M., & Andrews, J. (1977). Sex differences in children's reward allocation under competitive and cooperative instructional sets. *Developmental Psychology, 13*, 85-86.
- Berndt, T. J., & Miller, K. E. (1990). Expectancies, values, and achievement in junior high school. *Journal of Educational Psychology, 82*, 319-326.
- Bogner, K., Raphael, L. M., & Pressley, M. (2002). How grade-1 teachers motivate literate activity by their students. *Scientific Studies of Reading, 6*, 135-165.
- Brophy, J. (1981). Teacher praise: A functional analysis. *Review of Educational Research, 51*, 5-32.
- Brophy, J. (1985). Teacher-student interaction. In J. B. Dusek (Ed.), *Teacher expectancies* (pp. 303-328). Hillsdale, NJ: Erlbaum & Associates.
- Brophy, J., & Good, T. (1970). Teachers' communication of differential expectations for children's classroom performance: Some behavioral data. *Journal of Educational Psychology, 61*, 365-374.

- Brophy, J., & Good, T. (1974). *Teacher-student relationships: Causes and consequences*. New York: Holt, Rinehart, & Winston.
- Cameron, J. (2001). Negative effects of reward on intrinsic motivation—A limited phenomenon: Comment on Deci, Koestner, and Ryan (2001). *Review of Educational Research, 71*, 29-42.
- Carr, M., & Borkowski, J. G. (1989). Attributional training and the generalization of reading strategies with underachieving children. *Learning and Individual Differences, 1*, 327-341.
- Carr, M., Borkowski, J. G., & Maxwell, S. E. (1991). Motivational components of underachievement. *Developmental Psychology, 27*, 108-118.
- Covington, M. V. (1987). Achievement motivation, self-attributions, and the exceptional learner. In J. D. Day & J. G. Borkowski (Eds.), *Intelligence and exceptionality* (pp. 355-389). Norwood, NJ: Ablex.
- Covington, M. V., & Omelich, C. L. (1979a). Effort: The double-edged sword in school achievement. *Journal of Educational Psychology, 71*, 169-182.
- Covington, M. V., & Omelich, C. L. (1979b). It's best to be able and virtuous too: Student and teacher evaluative responses to successful effort. *Journal of Educational Psychology, 71*, 688-700.
- Covington, M. V., & Omelich, C. L. (1981). As failures mount: Affective and cognitive consequences of ability demotion in the classroom. *Journal of Educational Psychology, 73*, 796-808.
- Covington, M. V., & Omelich, C. L. (1984). Task-oriented versus competitive learning structures: Motivational and performance consequences. *Journal of Educational Psychology, 6*, 1038-1050.
- deCharms, R. (1968). *Personal causation*. New York: Academic Press.
- Deci, E. L., Koestner, R., & Ryan, R. M. (2001a). Extrinsic rewards and intrinsic motivation in education: Reconsidered once again. *Review of Educational Research, 71*, 1-27.
- Deci, E. L., Koestner, R., & Ryan, R. M. (2001b). The pervasive negative effects of rewards on intrinsic motivation: Response to Cameron (2001). *Review of Educational Research, 71*, 43-51.
- Deshler, D. D., & Schumaker, J. B. (1988). An instructional model for teaching students how to learn. In J. L. Graden, J. E. Zins, & M. J. Curtis (Eds.), *Alternative educational delivery systems: Enhancing instructional options for all students* (pp. 391-411). Washington, DC: National Association of School Psychologists.
- Dolezal, S. E., Welsh, L. M., Pressley, M., & Vincent, M. (2003). How grade-3 teachers motivate academic engagement in students. *Elementary School Journal, 103*(3), 239-267.
- Dweck, C. S., & Bempechat, J. (1983). Children's theories of intelligence: Consequences for learning. In S. G. Paris, G. M. Olson, & H. W. Stevenson (Eds.), *Learning and motivation in the classroom* (pp. 239-256). Hillsdale, NJ: Lawrence Erlbaum.
- Dweck, C. S., & Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review, 95*, 256-273.
- Elliott, E. S., & Dweck, C. S. (1988). Goals: An approach to motivation and achievement. *Journal of Personality and Social Psychology, 54*, 5-12.
- Fantuzzo, J., King, J., & Heller, L. R. (1992). Effects of reciprocal peer tutoring on mathematics and school adjustment: A component analysis. *Journal of Educational Psychology, 84*, 331-339.
- Garner, R. (1992). Learning from school texts. *Educational Psychologist, 27*, 53-63.
- Garner, R., Alexander, P. A., Gillingham, M. G., Kulikowich, J. M., & Brown, R. (1991). Interest and learning from text. *American Educational Research Journal, 28*, 643-660.
- Goldenberg, C. (1992). The limits of expectations: A case for case knowledge about teacher expectancy effects. *American Educational Research Journal, 29*, 517-544.
- Graham, S., & Harris, K. (1996). Addressing problems in attention, memory, and executive functioning: An example of self-regulated strategy development. In G. R. Lyon & N. A. Krasnegor (Eds.), *Attention, memory and executive function* (pp. 349-365). Baltimore: Paul Brooks.

- Groome, T. H. (1998). *Educating for life: A spiritual vision for every teacher and parent*. Allen, TX: Thomas More Publishing.
- Harter, S. (1978). Effectance motivation reconsidered: Toward a developmental model. *Human Development, 21*, 34-64.
- Henderlong, J., & Lepper, M. R. (2002). The effects of praise on children's intrinsic motivation. *Psychological Bulletin, 128*, 774-795.
- Henderson, V. L., & Dweck, C. S. (1990). Motivation and achievement. In S. S. Feldman & G. R. Elliott (Eds.), *At the threshold: The developing adolescent* (pp. 308-329). Cambridge, MA: Harvard University Press.
- Hidi, S. (1990). Interest and its contribution as a mental resource for learning. *Review of Educational Research, 60*, 549-571.
- Jacobsen, B., Lowery, B., & Ducette, J. (1986). Attributions of learning disabled children. *Journal of Educational Psychology, 78*, 59-64.
- Johnson, D., & Johnson, R. (1974). Instructional goal structure: Cooperative versus competitive or individualistic. *Review of Educational Research, 44*, 213-40.
- Johnson, D. W., & Johnson, R. (1975). *Learning together and alone: Cooperation, competition, and individualization*. Englewood Cliffs, NJ: Prentice-Hall.
- Johnson, D. W., & Johnson, R. (1979). Conflict in the classroom: Controversy and learning. *Review of Educational Research, 49*, 51-70.
- Kistner, J. A., Osborne, M., & LeVerrier, L. (1988). Causal attributions of learning-disabled children: Developmental patterns and relation to academic progress. *Journal of Educational Psychology, 80*, 82-89.
- Lepper, M. R., Greene, D., & Nisbett, R. E. (1973). Undermining children's intrinsic interest with extrinsic rewards: A test of the "over-justification" hypothesis. *Journal of Personality and Social Psychology, 28*, 129-137.
- Lepper, M. R., & Henderlong, J. (2000). Turning "play" into "work" and "work" into "play": 25 years of research on intrinsic versus extrinsic motivation. In C. Sansone & J. M. Harackiewicz (Eds.), *Intrinsic and extrinsic motivation: The search for optimal motivation and performance* (pp. 257-307). San Diego, CA: Academic Press.
- Lepper, M. R., & Hoddell, M. (1989). Intrinsic motivation in the classroom. In C. Ames & R. Ames (Eds.), *Research on motivation in education* (Vol. 3, pp. 73-105). San Diego, CA: Academic Press.
- Lepper, M. R., & Malone, T. W. (1987). Intrinsic motivation and instructional effectiveness in computer-based education. In R. E. Snow & M. J. Farr (Eds.), *Aptitude, learning, and instruction* (Vol. 3, pp. 255-286). Hillsdale, NJ: Erlbaum & Associates.
- Levine, J. M. (1983). Social comparison and education. In J. M. Levine & M. C. Wang (Eds.), *Teacher and student perceptions: Implications for learning* (pp. 29-55). Hillsdale, NJ: Erlbaum.
- Loveland, K. K., & Olley, J. G. (1979). The effect of external reward on interest and quality of task performance in children of high and low intrinsic motivation. *Child Development, 50*, 1207-1210.
- Malone, T. W., & Lepper, M. R. (1987). Making learning fun: A taxonomy of intrinsic motivation for learning. In R. E. Snow & M. J. Farr (Eds.), *Aptitude, learning, and instruction* (Vol. 3, pp. 223-253). Hillsdale, NJ: Erlbaum.
- Marsh, H. W. (1990). Causal ordering of academic self-concept and academic achievement: A multiwave, longitudinal panel analysis. *Journal of Educational Psychology, 82*, 646-656.
- Martin, J., & Martin, W. (1983). *Personal development: Self-instruction for personal agency*. Calgary, Alberta, Canada: Detselig Enterprises.
- McLoyd, V. C. (1979). The effects of extrinsic rewards of differential value on high and low intrinsic interest. *Child Development, 50*, 1010-1019.
- Meece, J. L., Blumenfeld, P. C., & Hoyle, R. H. (1988). Students' goal orientations and cognitive engagement in classroom activities. *Journal of Educational Psychology, 80*, 514-523.
- Nicholls, J. G. (1989). *The competitive ethos and democratic education*. Cambridge, MA: Harvard University Press.

- Noddings, N. (1984). *Caring: A feminine approach to ethics and moral education*. Berkeley, CA: University of California Press.
- O'Flahavan, J., Gambrell, L. B., Guthrie, J., Stahl, S., Baumann, J., & Alverman, D. (1992). Poll results guide activities of research center. *Reading Today*, 10, 12.
- Pearl, R. (1982). LD children's attributions for success and failure: A replication with a labeled LD sample. *Learning Disability Quarterly*, 5, 173-176.
- Pintrich, P. R., & Schunk, D. H. (2001). *Motivation in education: Theory, research, and applications* (2nd ed.). Englewood Cliffs, NJ: Prentice-Hall.
- Pressley, M., Dolezal, S. E., Raphael, L. M., Welsh, L. M., & Bogner, K. (in press). *Engaging primary-grades teaching*. New York: Guilford.
- Renninger, K. A. (1990). Children's play interests, representation, and activity. In R. Fivush & J. Hudson (Eds.), *Knowing and remembering in young children* (pp. 127-165). Cambridge, MA: Cambridge University Press.
- Renninger, K. A., & Wozniak, R. H. (1985). Effect of interest on attentional shift, recognition, and recall in young children. *Developmental Psychology*, 21, 624-632.
- Rosenthal, R. (1985). From unconscious experimenter bias to teacher expectancy effects. In J. B. Dusek (Ed.), *Teacher expectancies* (pp. 37-65). Hillsdale, NJ: Erlbaum.
- Rosenthal, R., & Jacobson, L. (1968). *Pygmalion in the classroom: Teacher expectation and pupils' intellectual development*. New York: Holt, Rinehart, & Winston.
- Schunk, D. H. (1990). Goal setting and self-efficacy during self-regulated learning. *Educational Psychologist*, 25, 71-86.
- Schunk, D. H. (1991). Self-efficacy and academic motivation. *Educational Psychologist*, 26, 207-232.
- Shiefele, V. (1991). Interest, learning and motivation: Expanding the theoretical framework. *Educational Psychologist*, 26, 299-323.
- Skinner, B. F. (1953). *Science and human behavior*. New York: Free Press.
- Slavin, R. (1985a). An introduction to cooperative learning research. In R. Slavin, S. Sharan, S. Kagan, R. H. Lazarowitz, C. Webb, & R. Schmuck (Eds.), *Learning to cooperate, cooperating to learn* (pp. 5-15). New York: Plenum.
- Slavin, R. (1985b). Team-assisted individualization: Combining cooperative learning and individualized instruction in mathematics. In R. Slavin, S. Sharan, S. Kagan, R. H. Lazarowitz, C. Webb, & R. Schmuck (Eds.), *Learning to cooperate, cooperating to learn* (pp. 177-209). New York: Plenum.
- Wade, S. E., & Adams, R. B. (1990). Effects of importance and interest on recall of biographic text. *Journal of Reading Behavior*, 22, 331-353.
- Wade, S. E., Schraw, G., Buxton, W. M., & Hayes, M. T. (1993). Seduction of the strategic reader: Effects of interest on strategies and recall. *Reading Research Quarterly*, 28, 93-114.
- Weiner, B. (1979). A theory of motivation for some classroom experiences. *Journal of Educational Psychology*, 71, 3-25.
- White, R. W. (1959). Motivation reconsidered: The concept of competence. *Psychological Review*, 66, 297-333.
- Wood, R., & Bandura, A. (1989). Impact of conceptions of ability on self-regulatory mechanisms and complex decision-making. *Journal of Personality and Social Psychology*, 56, 407-415.
- Wood, S. S., Bruner, J. S., & Ross, G. (1976). The role of tutoring in problem solving. *Journal of Child Psychology and Psychiatry*, 17, 89-100.
- Zimmerman, B. J. (1989a). A social cognitive view of self-regulated academic learning. *Journal of Educational Psychology*, 81, 329-339.
- Zimmerman, B. J. (1989b). Models of self-regulated learning and academic achievement. In B. J. Zimmerman & D. H. Schunk (Eds.), *Self-regulated learning and academic achievement* (pp. 1-25). New York: Springer-Verlag.
- Zimmerman, B. J. (1990a). Self-regulated learning and academic achievement: An overview. *Educational Psychologist*, 25, 3-18.

- Zimmerman, B. J. (1990b). Self-regulating academic learning and achievement: The emergence of a social-cognitive perspective. *Educational Psychology Review*, 2, 173-201.
- Zimmerman, B. J., Bandura, A., & Martinez-Pons, M. (1992). Self-motivation for academic attainment: The role of self-efficacy beliefs and personal goal setting. *American Educational Research Journal*, 29, 663-676.

All of the authors were at the University of Notre Dame when the primary research that is the basis for this article was conducted. That research was supported by funds associated with the Notre Dame Professorship in Catholic Education, which author Pressley occupied while at Notre Dame. The writing of this article was supported by funds provided by Michigan State University.

Michael Pressley is a professor in the Department of Teacher Education at Michigan State University. Lisa Raphael is a doctoral student in educational psychology, Sara Dolezal is a doctoral student in teacher education, and Lindsey Mohan Welsh is a doctoral student in school psychology at Michigan State University. Alysia Roehrig is a doctoral student in developmental psychology at the University of Notre Dame, and Kristen Bogner is a doctoral student in school psychology at the University of Minnesota. Correspondence concerning this article should be addressed to Dr. Michael Pressley, 118A Erickson Hall, Department of Teacher Education, Michigan State University, East Lansing, MI 48824.

APPENDIX

MOTIVATING TEACHING BEHAVIORS IN ENGAGING PRIMARY-GRADE CLASSROOMS

- Positive expectations regarding learning and accountability
- Appropriate homework
- Appropriate pacing of lessons in relation to students' abilities
- Attention to work and its importance
- Effort attributions, acknowledging students' success as a result of their hard work
- Teacher encouragement of student understanding and reflection
- Classroom adult volunteers
- Welcoming classroom environment
- Clear expectations for student behavior and material to be learned
- Clear, precise, easy-to-follow directions
- Clear, realistic goals and objectives
- Cognitive conflict as an opportunity for learning
- Cooperation encouraged/competition downplayed
- Concrete activities
- Connections across the curriculum
- Cooperative learning
- Critical thinking
- Curiosity and suspense
- Students told they can do challenging tasks
- Coverage of topics in greater depth versus coverage of a large number of topics
- Drama (learning about and practicing the dramatic arts)

- Encouragement and praise used consistently
- Encouragement of a changeable concept of intelligence
- Encouragement of prosocial behavior
- Encouragement of risk taking
- Encouragement of independence
- Encouragement of persistence and perseverance
- Engaging, interesting content
- Explanation given for the rationale for the decisions regarding rules, activities, daily routines
- Extrinsic motivators as rewards for appropriate behaviors and activities
- Games, play, and fun are used to reinforce, review, and make learning more enjoyable
- Home-school connections
- Learning by doing
- Lessons well-planned and organized
- Manipulatives—concrete representatives
- Modeling interest and enthusiasm
- Monitoring
- Multiple representations of tasks
- Positive atmosphere
- Positive, effective classroom management
- Positive feedback
- Relevance of what is being learned to larger life
- Rewards that stimulate learning
- Routines, rules, procedures, and policies are diverse
- Scaffolding
- Self-regulation by students
- Self-reinforcement by students
- Stimulation of cognitive thought
- Stimulation of creative thought
- Strategy instruction
- Student choice of their own learning
- Student interest taken into consideration when assigning tasks
- Value of education emphasized
- Valuing of students

Copyright of *Catholic Education: A Journal of Inquiry & Practice* is the property of Catholic Education: A Journal of Inquiry & Practice and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.