Research on Teaching

JANET EATON
AND PATRICIA NISCHAN

- ATMOSPHERE OF GENERAL MATH AND ALGEBRA CLASSES DIFFERS

Ninth-grade general mathematics is traditionally the last math class many students take, something to be endured rather than enjoyed. Why is it so different in this regard from ninth-grade algebra?

According to researchers at the Institute for Research on Teaching, the social organization of the classroom is the biggest difference. In each algebra class observed, a group of students responded to the teacher at strategic moments and helped keep the class in order and the discussion moving. No such cohesiveness existed in the general math classes.

Algebra students commonly joked with their teacher about sports, the weather, and other such things; the atmosphere was more formal in general math, where very little joking went on.

Teachers expected higher achievement and better behavior from algebra students, and seating arrangements and disciplinary measures reflected these expectations. In algebra classes, students received more direct instruction, content was outlined more specifically, and tests were scheduled and announced more regularly than in general math.

Students in the two types of class did not differ significantly in their attitudes toward mathematics, but the general math students thought less of themselves than did the algebra students, and felt more externally controlled.

IRT researchers and math teachers will use this and other information to help make general math class a better place. To learn more about the study, write to Perry Lanier, Institute for Research on Teaching, Michigan State University, East Lansing, MI 48824.

- PROBLEM BEHAVIOR NEED NOT CONTINUE

Problem behavior costs students valuable learning time and diverts teacher and student energies from constructive, successful experiences.

Jean Medick, a former IRT teacher-collaborator and currently a fifth-grade teacher, synthesized three inservice programs (Glasser’s Reality Therapy, Gordon’s Teacher Effectiveness Training, and Focus, a preventive mental health program) to develop effective classroom strategies for helping students whose behavior is hostile-aggressive, passive-aggressive, or withdrawn failure-image.

Her strategies include holding democratic classroom meetings to set up classroom rules; consistent enforcement of those rules; establishing friendly, caring relationships; and insisting that children “own” their own problems. For instance, she “inflicts no punishment on a child” with a behavior problem, but does not interfere with the natural consequences of misbehavior and works with the child until change comes about.

“All the strategies address children from the position of their strengths,” says Medick. “Helping them to learn to make good decisions regarding behavior, learning, and conflict resolution.”
The strategies are designed to help children see how they can take control of their own education. That’s the key to motivation.

Teaching cognitive skills is not enough. A child who can read, write, and do arithmetic but who is fearful and lonely, cannot resolve conflicts, is hostile or withdrawn, is not going to be able to cope with the world satisfactorily. Much less find fulfillment or happiness, says Medick.

The reward for her efforts—”I no longer find myself in win-lose power struggles with children to force compliance.”


THE TEACHER’S IDEAL TEACHER—AND STUDENT

What do teachers think a good teacher is like? To find out, Richard Prawat asked elementary teachers to describe an outstanding teacher they had had.

“Most teachers recalled a female teacher at either the upper elementary or high school level,” says Prawat. They most frequently characterized her as taking a warm and personal interest in students. Many described their outstanding teacher as a strict, demanding, task master with high academic standards.

Pooling teachers’ responses on another question, the profile of an ideal student emerged as one who is eager, excited, and anxious to learn; who is inquisitive, self-motivating, and challenging to the teacher; and who has good study skills, completes tasks neatly and promptly, and who challenges him/herself to do the very best,” says Prawat. The ideal student is also well-behaved and poses no discipline problem, although some teachers said the student shouldn’t be a little angel. These images of an ideal teacher and student are based on part of the data collected by Prawat and his colleagues for a research project on how teachers help students feel good about school, themselves, and each other. For more information on the Affective Outcomes Project, write to Richard Prawat, Institute for Research on Teaching, Michigan State University, East Lansing, MI 48824.

THE HIGH SCHOOL CURRICULUM MATTERS

“The more courses and time spent in a given curricular area, the better the resulting achievement in that area,” says William Schmidt, based on a study involving over 9,000 high school students. That seems obvious, but how pronounced are the effects?

Based on data from the National Center for Education Statistics as part of the National Longitudinal Study of the high school class of 1972, Schmidt found that one additional semester of mathematics resulted in a four-percentile achievement increase on the ACT test. If a student took two more years of mathematics after the first two years of high school that student’s mathematics achievement score should increase by 16 percentiles, says Schmidt.

Schmidt also found that the time spent on some subjects paid off for other subjects. For example, additional foreign languages and mathematics correlated with improved science achievement.

Schmidt also found that the amounts of science, foreign languages, English, and mathematics were all more important in predicting social studies achievement than the amount of social studies schooling. This suggests, notes Schmidt, that “what is being taught in high school social studies classes is not what is being tested, at least on the ACT.”

For a more complete report of these and other results, send for IRT Occasional Paper No. 47, The High School Curriculum: It Does Make a Difference, by W. H. Schmidt, $6. Ordering information follows.

CREATING MORE EFFECTIVE TEACHERS

Teacher training will be more effective than it is now, when educators study and analyze successful teachers in a particular context, then synthesize and convey those finding to future teachers, says Lawrence Lczotte, IRT researcher.

Lczotte suggests studying and analyzing teachers in urban schools to identify practices that are common to all teachers and those common to effective teachers only.

How can educators identify teacher success? By student achievement or lack thereof, says Lczotte. Since student achievement is measured by testing and since one measure of teacher and school success is provided by such tests, “we better accept that reality and proceed,” he says.

Once teacher educators know what makes teachers effective, they can teach that to future teachers.

An aspect of training deserving more consideration is student teachers’ field experience. Research shows that, good or bad, the student teaching experience is the most powerful training component. “Student teachers model their supervisors,” Lczotte says. “It seems only fitting and proper that they be placed in the presence of the best possible models of good teaching practice.”

For a complete report of the effective teacher training paper, send for Occasional Paper No. 49, Effective Teacher Training and Urban School Improvement, by Lawrence W. Lczotte. $2.50. Ordering information follows.

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