

OVERVIEW OF INSTRUCTIONAL METHODS

*To deal with
changing trends,
what should be
our focus?*

Are there compelling reasons to change what we do in schools?

I used to be asked fairly regularly in years past if I believed that children had changed. I am seldom asked that question anymore. I believe that the answer is apparent. Try this. What was different in society 10 years ago? How about 20 years ago? Thirty? Forty?

We recently asked a group of teachers to list some of these differences. You will doubtless recognize many of the elements they mentioned. We are experiencing greater violence and less respect for authority. We live in an increasingly technological society, at a time when information is rapidly expanding and changing. We face changes in families and perhaps in children

themselves because technology has changed learner characteristics. Sensory overload from constant media bombardment is one possible cause. Another is advances in medical technology, which allow babies to survive, many with precarious health, who would have died just a few years ago. Partly as a result of these changes, student achievement has suffered. Changes in society have affected what students need to know and do to get and keep jobs. Government authorities as well as business and industry have become more proactive and are demanding changes in schools.

Teaching

To deal with these changing trends, what should be our focus? Let me suggest that the core technology in schools is *teaching*. The interaction between the teacher

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and student is the most important part of education. What a teacher does makes a significant difference in what a student learns. Marketing schools, administering them, and providing financing, counseling services, buildings, buses, and curriculum materials are all important, but these exist to support teaching and student learning.

Technical Aspects of Teaching

Let's construct a framework of just what teachers need to know and what they must know how to do. Of course, even though the technical aspects of teaching are vitally important, they will not produce the results we desire unless we are healthy spiritually. Techniques must be embedded in the milieu of our moral, ethical, and spiritual lives.

We can organize into four categories the activities teachers do and the things they need to know to be successful: *management skills*, *instructional skills*, *content*, and *teaching strategies*. Each will be briefly explained below.

Effective teachers use good *management skills*. Management includes time, materials, schedules, and student behavior. When teachers have difficulty in classrooms, this often occurs in the area of management. Good instruction skills will take care of most behavior-management problems in schools. (See the Summer 1992 issue of the JOURNAL for suggestions).

Instructional skills are the dozens of skills teachers must possess in order to conduct their classes efficiently. These include writing goals and objectives, sequencing instructional tasks, writing lesson plans, conducting reviews and constructing tests, as well as many other skills.

Content includes both pedagogical and discipline-related skills and knowledge. Pedagogy, or the art and science of teaching, is a rapidly growing body of professional knowledge that has exploded in the

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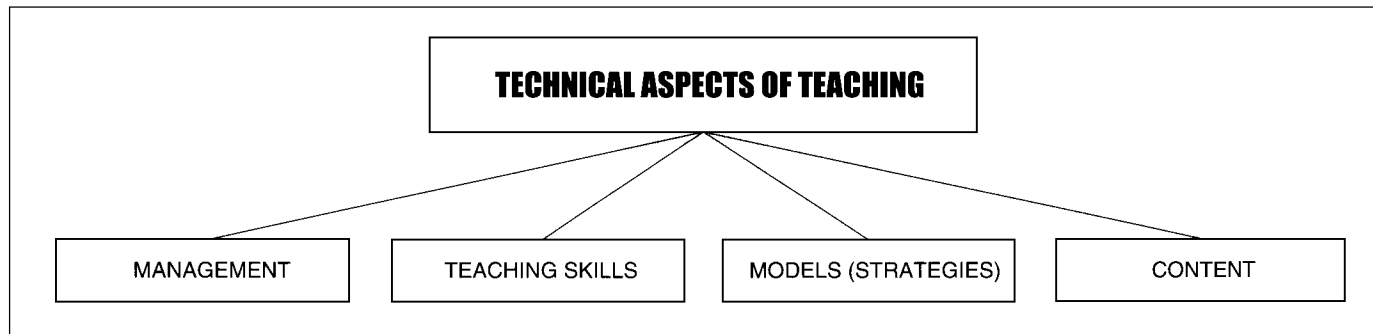
past 15 years.

Most educators recognize that there is a connection between knowledge of subject matter and effective teaching. Certainly, if one doesn't know the subject matter or the concepts and structure of the discipline, he or she will not be able to teach it well. The lack of knowledge in some disciplines has created a crisis of major proportions; a comparison of the math and science scores of U.S. students and those of other industrialized nations illustrates the result of such a crisis.¹

As noted earlier, instruction is the key

technology in schools. In the technical area of teaching, the most potent factor in student learning is the *strategies* that teachers use. A strategy is an organized system of instruction based upon theory or how scholars think in a particular discipline. Joyce, Weil, and Showers in their book *Models of Teaching*,² describe 21 major strategies or models of teaching, which they organize into four categories.

Each of these models is available for teachers to use, and each produces useful results. If one desires certain specific learning outcomes—for example, inductive reasoning, metaphoric thought, or the ability to memorize—certain models of teaching are more effective and efficient than others. Each of these models has a substantial research base demonstrating its effects on learners.



What You See Is What You Get

Just what kinds of techniques do teachers use in the classroom? Let's take a simulated trip to schools all over the United States to see what teachers and students are doing, then report what we see. What do you think the major activities would be? John Goodlad and his colleagues actually did this in 1982. His research team visited hundreds of K-12 classrooms across the country to analyze what teachers and students were doing.

Sirotnik (part of Goodlad's team) reported that three activities predominated.³ These were what he called *lecture, recitation* (speaking to repeat what the teacher had already said or filling out workbook pages to repeat in writing what the textbook had said), and *management*. In fact, he reported that these three activities accounted for more than 92 percent of the time in the classrooms that they visited. Obviously, this left little time for other methods of teaching.

What kinds of learning outcomes result when lecture/recitation predominates as the teaching methodology? We can gain insight into this by using Bloom's Taxonomy of cognitive development as a lens. At what level of his taxonomy are we teaching when lecture/recitation predominates?

The answer is obvious. The lowest two levels are being emphasized.

The higher-order thinking skills, the very ones our students need in order to be successful in a complex society, are often largely left to chance. Since we are made in the image of God, with the power to think and to do, and since God thinks in wonderfully powerful ways, we are under a moral imperative to teach higher-order thinking skills.

A statement attributed to Robert Mager, of behavioral objectives fame, sums it up elegantly, "If teaching were the same as telling, we'd all be so smart we couldn't

Bloom's Taxonomy of the Cognitive Domain

Six basic objectives are listed in Bloom's taxonomy of the thinking or cognitive domain.⁴

1. *Knowledge*: Remembering or recognizing something without necessarily understanding, using, or changing it.

2. *Comprehension*: Understanding the material being communicated without necessarily relating it to anything else.

3. *Application*: Using a general concept to solve a particular problem.

4. *Analysis*: Breaking something down into parts.

5. *Synthesis*: Creating something new by combining different ideas.

6. *Evaluation*: Judging the value of materials or methods as they might be applied in a particular situation.

What a teacher does makes a significant difference in what a student learns.

stand ourselves." Telling as a method of teaching, particularly in today's society, simply does not work as well as it once did, nor does it produce the desired student outcomes.

The good news is that there are teaching strategies available to help students become powerful self-directed learners. And

that's not all. We know how to teach these methods to teachers. Further, some Seventh-day Adventist teachers have used these techniques to transform their classrooms. The articles that follow testify to the ability of our teachers to change their teaching and, as a result, the learning of their students. But first, a brief overview of the four categories of teaching models mentioned earlier.

Teaching Strategies

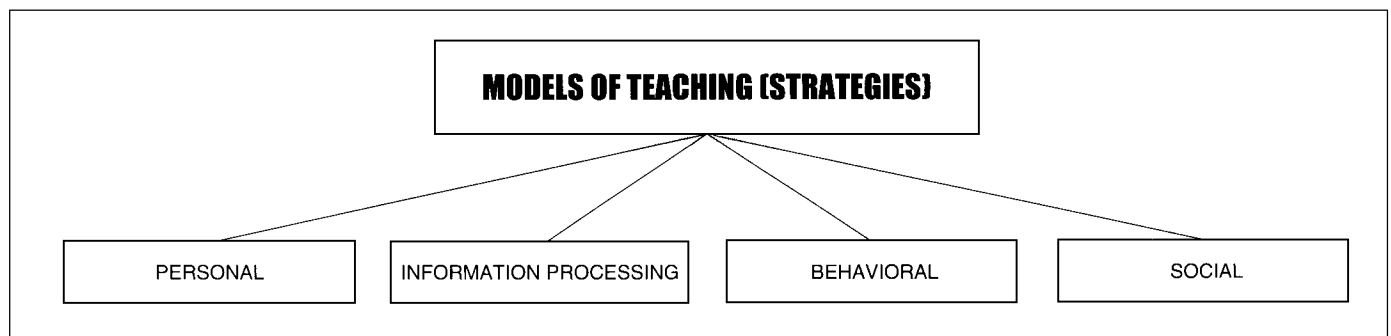
Each of the four categories contains a number of models. Each model fits a particular category, based upon its predicted learning outcomes. For illustration purposes we will be dealing with the models presented in Joyce and Weil's book *Models of Teaching*. There are, of course, other models available. I have not included some promising recent developments because they lack a substantial research base on results with students.

Information-Processing Models

The *information-processing category* contains the largest number of models and is the most familiar and comfortable for most teachers. Models in this category are designed to do just what the title suggests—help students process information. And how do we want students to process information? In lots of complex ways—from memorizing to thinking inductively. Some of these are teacher-focused and -directed, where others are student-focused.

Behavioral Models

The models in the *behavioral category* are based upon the idea that humans learn through naturally occurring feedback mechanisms, and that reinforcement is basic to learning. A number of these models also include the idea of mastery. They work well for material that is easily broken into small steps that can be sequenced, are logi-



THE FOUR FAMILIES OF TEACHING MODELS AND SELECTED ASSOCIATED MODELS OF TEACHERS

Type/Name	Proponents	Learning Objectives
PERSONAL MODELS - Individual problem solving and creativity		
Non-Directive Teaching	Carl Rogers	Personal learning capacity
Awareness Training	Perls & Schutz	Interpersonal awareness
Synectics	William Gordon	Personal creativity
INFORMATION-PROCESSING - Concepts, principles, generalizations, thinking skills		
Inquiry Training	Richard Suchman	Reasoning from effect to cause
Inductive	Hilda Taba	Inductive mental processes and thinking skills
Concept Attainment	Jerome Bruner	Inductive reasoning-analysis
Advance Organizer	David Ausubel	Absorbing and relating knowledge
Memory Model	Jerry Lucas	Capacity to memorize
BEHAVIORAL - Facts, basic skills and concepts		
Programmed Instruction	B. F. Skinner	Facts, concepts, skills
Simulation	Link; Guetzkow	Concepts, decision making
Mastery Learning and Instruction	Benjamin Bloom & John B. Carrol	Behavior patterns, skills
SOCIAL - Group problem solving, group responsibility		
Group Investigation	Herbert Thelen & John Dewey	Group skills, academic skills, social problem solving, academic inquiry
Social Inquiry	Massialis & Cox	Social problem solving
Role Playing	Fannie & George Shaftel	Personal and social values

Adapted from *Models of Teaching* by Bruce Joyce and Marsha Weil, 1986.

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cal, and need to be learned well, often to the point of automaticity. They emphasize the deductive learning process.

Personal Models

The *personal category* contains models designed to increase student learning about self and, as such, emphasize intrapersonal knowledge. Some use methods that develop self-awareness and self-esteem; others promote personal creativity—thinking metaphorically and using analogies. Jesus in His teaching used a number of methods from this category. An example was His extensive use of the parable, a type of metaphor.

Social Models

One of the most popular methods of teaching today is cooperative learning. Cooperative learning belongs to the *social category* of models. There are a number of social models, some very simple, others quite complex. In general, the more complex the model, the greater the student growth. Student outcomes from these models include personal and academic development as well as social growth.

Conclusion

One definition of an effective teacher is a person who possesses a wide repertoire of teaching strategies chosen from personal, information processing, behavioral, and social categories and uses them appropriately. Using them appropriately means, at a minimum, making a match between the instructional/learning goals, the subject matter being taught, and the developmental level of the students.

Are there compelling reasons to change what we do in schools? Yes! And if we are

to change, empowering teachers with a repertoire of proven methods that increase their students' capacity to learn is where we ought to begin, and where most of our efforts should be centered. ✍

Resources

Every other year, an intensive training session, which includes working with children, is available at Andrews University. The fifth biennial session, Quality Education, Now! will meet June 11 to July 6, 1995. Dimensions of Learning, Models of Teaching, coaching, study groups, and curriculum design are among the themes. Write for a brochure:
Andrews University
School of Education
Department of Teaching and Learning
Berrien Springs, MI 49104 U.S.A.

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NOTES AND REFERENCES

1. "Careers in Teaching Handbook." Written and edited by David Haselkorn and Andrew Calkins. Published and distributed as a public service for Recruiting New Teachers, Inc., Belmont, Massachusetts, 1993.
2. Bruce Joyce, Marsha Weil, and Beverly Showers, *Models of Teaching* (Boston: Allyn and Bacon, 1992).
3. Kenneth A. Sirotnik, "What You See Is What You Get: Consistency, Persistency, and Mediocrity in Classrooms," *Harvard Educational Review* 53:1 (February 1983), pp. 16-31.
4. Benjamin S. Bloom, et al, *Taxonomy of Educational Objectives. Handbook 1: Cognitive Domain* (New York: David K. McKay Co., Inc., 1956).