

BRINGING POWERFUL TEACHING *to the Small School*

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As a pre-service teacher, I had a vision. I pictured a classroom (mine) filled with students engaged in active learning. I imagined a school (mine) filled with projects, research, manipulatives, higher-order thinking skills, cooperation, creative thinking, and intelligent use of the textbook. I imagined a teacher (me) who knew exactly how to teach each lesson. I even dreamed of a classroom (mine) where the students were so involved in learning that they asked the teacher for extra lessons. In my dreamland, the students sometimes chose to work on class projects during recess.

After 10 years of teaching, I gave my dream a name: “Instructional empowerment.” Forget being a teacher who could use one method to teach all lessons. I wanted a whole toolbox of teaching strategies. I wanted “instructional power.” Training in techniques from *Models of Teaching*¹ has added eight specific teaching methods to my repertoire, or toolbox. Let me share

Payday in the author's Burton Bucks, Inc. classroom simulation.

with you some glimpses of my real classroom now.

A New Beginning

Because I was starting a new school year in a new school using new methods, I wanted to make the first day memorable. I planned to teach at least one lesson using each of the eight models of teaching I knew. After worship, I gave my traditional rules of the classroom presentation with one improvement. I used cooperative-learning techniques and had students construct *T-charts** for each rule. The only problem encountered was shyness. The students were too quiet during group discussion. Can you imagine that? We had to revisit the T-charts after a few days of class to expand them (see box at right).

As a spinoff from the discussion of class rules, I launched my first complete models of teaching lessons. I presented a problem-based *Synectics** lesson. The problem? "What should we do when students do not complete assignments?" The lesson started slowly, but by the time we reached phase four (compressed conflicts), the class was in full gear. Every hand was up, and everyone was eager to respond! The students were functioning on the upper levels of Bloom's Taxonomy and enjoying it. When we reached the end of the lesson and revisited the original problem to discuss solutions, the students appeared to hit a wall. An eighth grader shared one possible solution, but the rest of the students sat with blank expressions on their faces. I shared another possible solution, but it didn't help. They were stuck. They needed more prac-

tice to apply creative thought to problem solution.

I told them we would move on to an *inquiry training lesson** and come back to our synectics problem later. I chose a lesson that used the social-sciences inquiry approach of yes/no questioning. The discrepant event was this:

"Although it is not very heavy, no one can hold it for more than a few minutes."** All of the children appeared to enjoy this model. In 15 minutes they solved the problem and were hooked. They begged for another, so we did one more. Was this my real classroom or one from dreamland?

I followed inquiry training with a *concept attainment lesson** using the concept of "teddy bear." The data set consisted of

* Terms marked with an asterisk are defined in the Glossary.

** Answer: Your breath.

T-charts*

A T-chart, according to David and Roger Johnson,[†] can be used to teach social skills. The teacher should list the skills he or she wishes students to master. There are dozens of possibilities, such as encouraging other group members, taking turns, sharing materials, criticizing ideas rather than people, and so forth. The Johnsons suggest the following steps to construct a T-chart:

1. Write the name of the skill to be learned and practiced and draw a large T underneath.
2. Title the left side of the T "Looks Like" and the right side of the T "Sounds Like."
3. On the left side, write a number of behaviors that illustrate the skill. On the right side, write a number of phrases that put the skill into practice.
4. Have all students practice "Looks Like" and "Sounds Like" several times before the lesson is conducted.

A T-chart for teaching social skills might look like this:

| Encouraging | |
|--------------------------|--|
| <i>Looks Like</i> | <i>Sounds Like</i> |
| Thumbs up Pat on back | "What is your idea?" "I had not thought of that." |
| Shake hands | "Good idea!" "That helps." "That's interesting." |

[†] David W. Johnson, R. Johnson, and Edythe Johnson Halubec, *Circles of Learning: Cooperation in the Classroom* (Edina, Minn.: Interaction Book Co., 1990), p. 55.

stuffed animals that I had asked the students to bring to school. When I asked students to list attributes of the positive exemplars, the first characteristic suggested was "They are all bears." I said nothing and wrote this on the chalkboard. I presented more exemplars and asked students to test the list of attributes. One by one each attribute was eliminated, until only the original attribute remained. To help clarify the nature of attributes, I presented an animal that some students identified as a bear and others identified as a kitten. We returned to the list of attributes, and I asked, "What makes a stuffed animal a bear and not something else?" Now the students had no trouble listing the specific characteristics of a "teddy bear." But when I asked students to analyze their

thinking processes, they had trouble. The lesson had been so simple that no one had changed his or her thinking during the lesson.

We moved directly from this lesson into a *Taba inductive thinking lesson** using the stuffed animals. Students became actively engaged with the data, and quickly completed the first portion of the lesson, concept formation. During this phase of instruction, the students busily grouped and regrouped the data set and generated lists of common attributes for each group. They had little trouble with the process and maintained interest throughout the lesson.

The next models of teaching took place in math class. I used a variety of stuffed animals, manipulatives, and objects to teach a second concept attainment lesson on the

concept of “repeating patterns.” Students in grades one to four used manipulatives and paper to extend the lesson, while students in grades five to eight worked with me on symbolic (number) patterns. Each of the upper graders extended the lesson by creating his or her own pattern and completing a friend’s pattern.

After lunch, I led the students to a cooperative learning simulation. We did “Lost on the Moon” from *Cooperative Learning*.² First, the individual members of each team ranked 15 items according to their usefulness as tools for survival on the moon. Next, the teams developed a group ranking for each item. The groups stayed on task. After scoring the papers, we compared individual and group scores. By comparing the higher group score to the lower individual scores, the students had no trouble seeing the benefits of group interdependence. Team building had begun.

For science class, I used elements of cooperative learning and Taba’s inductive thinking model to help students develop an advance organizer for the field of science. Each cooperative group used the round-robin structure to develop a list of things that scientists do or study. Then, using the data from these lists, students once again used concept formation to group similar subjects and list their common attributes. Students used these groups as the branches of our advance organizer.

In social studies, I used another cooperative structure, *numbered heads*,* during a *mnemonic lesson** about the continents. After presenting the memory device and providing a two-minute practice session, I led a numbered-heads review of the continents’ names and locations. After a few more of these review sessions, the students had no trouble memorizing both names and locations of the continents.

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Students pose in front of the completed castle they built.

A Classroom Economy

The development of our simulated economy—*Burton Bucks, Inc.* took much of my time during the first four weeks of school. We used the *roundtable cooperative structure** to develop a list of classroom jobs. Next, the students applied for positions. Each student listed three jobs on a sheet of paper and stated why he or she was qualified for the job. After students began “working,” they were eager for payday, which occurred every two weeks.

Every four weeks students must pay such bills as tithe, rent, utilities, and taxes. Every third week students received “real life” cards that consisted of favorable and unfavorable circumstances that adults face from time to time, including making car repairs, paying speeding tickets, and receiving birthday presents. Every four to six weeks we held a town hall meeting to discuss necessary changes or improvements for our town. We have needed only one session of the Burtonopolis City Court. We operated our own police force and classroom mall. In

the mall, the students and I operated a variety of stores. The mall was open one day every two weeks. In addition, one student operated a classroom bank.

Because we were getting ready to plant a garden on the school grounds, we started the second semester of science and social studies with another cooperative simulation, *The Game of Farming*. Students formed “farm families” and ran a 40-acre family farm in the Ohio of the 1880s. The only complaints I heard were when we finished. *No one* wanted to stop after only “three years” of farming.

MOT* Meets Thematic Instruction

Perhaps the educational highlight of the fall semester was the *thematic unit** my students completed on the Middle Ages. When I announced that we would be studying the Middle Ages for the next month, I heard a chorus of moans. “I hate the Middle Ages,” groaned one child. I ignored the complaints and began the unit with a cooperative lesson using the *question matrix*³ *approach** to encourage student thinking and questioning at all levels of Bloom’s Taxonomy. I had the students construct “truly” questions, questions about the Middle Ages for which they truly did not know the answer. I used these questions to guide individual and group inquiry. When the time came to end this introduction to the Middle Ages, I heard complaining again, but this time the students were complaining about the *end* of the question matrix activity. “May we do this again?” one student asked. “This is *fun*!”

I used a book showing the construction of a medieval cathedral as the read-aloud beginning for the unit. Building off David Macauley’s *Cathedral: The Story of Its Construction*,⁴ I launched into concept-attainment lessons on polygons and symmetry, and taught Taba inductive lessons with types of angles and quadrilaterals. To

extend these lessons, students constructed mosaics by using geometric shapes cut from construction paper. After completing the mosaics, each group of students designed and constructed a medieval banner. Next the students designed and made “stained-glass” windows from waxed paper and crayons.

We finished our unit with the construction of a one-tenth-scale cardboard castle. In addition to the walls, towers, and portcullis, the students constructed a great hall and a chapel. The students installed their “stained-glass” windows in the chapel, then fitted the chapel with an internal light. The results were stunning.

After we completed the castle, we invited parents and church members to an open house. Student work covered the walls and the tables all around the castle. When 30 people had arrived, I began a simulation called Medieval M & Ms™. Roles were assigned to children and adults by random selection. The youngest of my stu-

dents was crowned Queen Erin. She was served by a court of two nobles and three vassals. The rest of us became serfs. Children and adults gained insight into the social and economic structure of the medieval era and with the exception of Queen Erin and her court, I think most of us were glad to be living in the 20th century.

Summary

My pursuit for powerful teaching is far from over. I am still working to master my newfound teaching strategies. I am still searching for more “tools” to add to my teaching toolbox. And I am still struggling against the enormous time and curriculum demands of a one-teacher school. But the taste of success is sweet and I shall continue my quest.

Suggestions for Implementing MOT* in a One-Teacher School

Start small. Don't plan on implementing MOT in all subjects at the beginning. Start with the one or two subjects with which you are most comfortable, and grow

from there.

Make time. Start lesson development during the summer. Don't expect to have time during the school year to develop all the lessons that you will need. Depending on your teaching load, you may be able to develop only one lesson per week.

Develop a lesson library. Begin developing lessons during your initial training in MOT. During the summer and as you have time during the school year, continue to add to your collection of lessons. Work cooperatively with other teachers to share lessons.

Use your curriculum guide. Don't waste time trying to dream up lesson ideas. You will find a wealth of ideas in your curriculum guides.

Use your textbooks and workbooks. With minor adaptations, some portions of textbooks, workbooks, and related materials often can be developed into MOT lessons. The new SDA science textbooks contain many demonstrations and teaching suggestions that can easily be adapted to inquiry or inductive lessons.

GLOSSARY

Concept Attainment is a strategy to teach conceptual thinking by presenting positive and negative exemplars (examples). The students construct a list of characteristics and then a definition for a specific concept.

Inquiry Training develops cause-effect reasoning in students. The lesson begins with a discrepant event, a puzzling situation that “pulls” students into the lesson. Students then verify and experiment with data. This is sometimes done through yes/no questioning. After adequate information has been acquired and confirmed, the students formulate an explanation for the discrepant event.

Mnemonic lessons present material to be memorized, using research-based techniques to enhance retention rather than rote learning.

MOT is an abbreviation for Models of Teaching.

Numbered Heads is a cooperative technique to ensure individual mastery

of objectives. Students in each group are numbered, after which groups review material to ensure mastery by each group member. The teacher then randomly selects a number and each team member with that number must answer the question.

Question Matrix was developed by Charles Wiederhold. It is formed by using six questions beginning as follows: *What, Where/When, Which, Who, Why* and *How*, and six verbs: *is, did, can, would, will, and might*. These can be formed into 36 different combinations such as, *What is?, Which can?, and Why might?* Students use these as starters to create questions about assigned content material. For example, *Where did Peter walk on water? or Why did Judas want to be a disciple?*

Roundtable is a cooperative learning structure used to record individual responses within a group. A piece of paper is passed around the group and each member writes a response to the teacher's question. Round-robin is a similar technique in which responses are given orally.

Synectics is a model of teaching that emphasizes creative problem solving. The six phases of a synectics lesson are (1) description of the problem, (2) direct analogy, (3) personal analogy, (4) compressed conflict (oxymorons), (5) direct analogy, and (6) re-examination of the problem.

Taba Inductive Thinking is a teaching approach consisting of three separate strategies—concept formation, interpretation of data, and application of principles. In concept formation, students separate specific data (in this article, stuffed animals) into discrete categories, list the characteristics of each category, and identify or create a name for each grouping.

T-chart is a cooperative learning technique used to define and apply social skills and abstract concepts. (See box on page 11.)

Thematic Units organize tasks from all curriculum areas around a common theme, such as the Middle Ages.

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Classroom signs identify cooperative learning groups.

Students measure and cut paper for the portcullis in the castle.

Combine and Conquer. Group students across grade levels for as many lessons as possible. While this is easy to do with Bible, science, and social studies, it is possible in other subject areas as well. For example, I combine students in the first four grades to teach concept attainment lessons on “greater than” and “less than” in early September.

Use and Re-use. Keep all the lessons you make. The lesson you use for seventh- and eighth-grade math in September can be used for third- through sixth-grade math later in the year. ☞

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REFERENCES

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3. Charles Wiederhold, *Cooperative Learning and Critical Thinking: The Question Matrix* (San Juan Capistrano, Calif.: Resources for Teachers, 1993).
4. David Macauley, *Cathedral: The Story of Its Construction* (Boston: Houghton-Mifflin Co., 1973).

Students designed and made medieval banners.