



Learning and the "Marzano 9"

Researchers at the Mid-continent Research for Educational Learning, led by Dr. Robert Marzano, have identified nine instructional strategies that are most likely to improve student achievement. As you read the description of a classroom assignment and assessment on the following two pages, consider how the nine strategies are integrated into practical use by a teacher and students using Thinking Maps.

1. Identifying similarities and differences: Students systematically compare Native American tribes using the Tree Map and, later, the Double Bubble Map.
2. Summarizing and note taking: Students are notemaking, abstracting and summarizing the information from the text using the Tree Map.
3. Reinforcing Effort: Students experience the direct linkage between effort and achievement because the Thinking Maps are used as the center of assessment developed by the teacher.
4. Homework and practice: Students have become fluent with Thinking Maps (over multiple years using whole school implementation) through practice so there is automaticity in the use of the tools for school and home.
5. Nonlinguistic representations: Students are using Thinking Maps as visual tools for transforming linguistic information into conceptual form for deeper understandings and for explicitly showing performance.
6. Cooperative learning: Unlike isolated and static graphic organizers, students are using a common language of thinking and maps for effectively and efficiently working together to construct knowledge.
7. Setting objectives and providing feedback: Students have clear objectives and feedback based on thinking skills/maps questions given by teacher.
8. Generating and testing hypotheses: Students answer higher order synthesis questions about the different tribes because they have created the patterned information using maps, from which they can make generalizations.
9. Cues, questions, and advance organizers: Students already have eight interrelated maps, each reflecting both essential questions and immediately useable tools for thinking... all "advanced" well before the assignment is given.

Peek into Norm Schuman's 6th grade social studies classroom in Jackson, Mississippi, and you will see groups of students huddled over books, working together. They are sketching out a picture of information, drawing to the surface essential knowledge that was once bound by text. The students' writings and accompanying maps hang on string that spans the room. The writings and maps also are pinned to display boards in the classroom and hallway, and they are tucked into portfolios in an accessible corner.

Norm Schuman is a highly energetic man, quick with a smile or an idea. Norm might seem to be the kind of teacher who motivates students to learn by his sheer will and endless positive energy. But the truth is, he gives his students assignments that move him quickly to the background. Students have the tools for achieving what he assigns. They are in the foreground, and Norm is the patient sidelines coach.

Today, each of six cooperative learning groups has been asked to read a passage from well-worn texts on a different Native American tribe. Their task is to identify critical information about each group: customs and celebrations, habitats, foods, gender roles and relationships among members, and spiritual beliefs. Norm emphasizes finding details about each of these topics, along with the fact that he will create the final test questions from the information each group presents.

All groups use a common visual tool--a hierarchical structure based in a Tree Map--to collect, analyze, and synthesize the text into a clearly defined picture of a tribe. Each group will then share this picture in an oral presentation, using the map as a visual guide on the overhead projector.

Norm methodically moves around the room and looks down at the developing maps, guiding here, scanning there, nodding quietly in agreement at another table. Students' eyes focus intently on their group maps. The groups redraft these maps several times during two periods of instruction until only the most essential ideas have been distilled and organized from the text. In each group, a member takes a colored pen and copies the agreed-upon version onto a transparency page while the other members discuss the rotation they will use for the presentation.

The following day, oral presentations begin. Each group moves to the front of the room, placing a colorful transparency on the overhead. Then each group member speaks about a key point of interest from one area on the map. Their peers are busy at their seats, listening, sketching out the map, and making notes and comparisons to their own work.

Norm is in the back of the room, occasionally reinforcing a certain idea or, when necessary, offering a clarification or correction. But most of the time, Norm asks questions of a higher order. His queries are complex in that each requires students to make inferences from data they have woven together. He asks questions that involve comparisons between tribes. Synthesizing questions require students to construct generalizations; interpretive and predictive queries explore how certain tribes might have reacted to interventions from outside forces. He encourages students in the classroom to ask questions. As each group presents its work, however, Norm jots down new questions he had not thought of in previous years, questions sparked by these student presentations.

Days after the presentations are over, Norm gives the students a test. It includes questions based on text information they presented and questions that require them to have linked information from several of the Tree Maps. He also asks questions that involve the use of other visual tools, such as those for comparing tribes, showing the development of a culture, or explaining the causes and effects of outside interventions. Students are ready for such questions because these tools have become a common way of communicating.

When asked about this process and, especially, about the level of his questions (answered by students who have come into his classroom as supposed "underachievers" from low socioeconomic neighborhoods), Norm responds: "I could never have asked these questions of my previous students, most of whom came into my class several years behind in grade-level reading. I didn't give them the tools to make inferences like this. They didn't have the organizational abilities to work with so much information."

Norm adds without hesitation that his current students now score higher on his exams than any previous class. Norm smiles, his eyes aglow with a sense of accomplishment: "And I am asking much more complex questions!"