Research Based Strategies for the Classroom

Part #11 - Cues, Questions, and Advance Organizers

Introduction

Teachers set the stage for learning by finding out what students already know, then connect new ideas to students' existing knowledge base. Using a variety of instructional strategies, teachers guide students from the known to the unknown, from familiar territory to new concepts. Cues, questions, and advance organizers are among the tools and strategies that teachers use to set the stage for learning. These tools create a framework that helps students focus on what they are about to learn.

Asking questions and prompting students' replies with cues are strategies that come naturally to most teachers. In fact, some 80 percent of student-teacher interactions involve cues and questions (Marzano, Pickering, & Pollock, 2001). By fine-tuning questioning strategies with insights from research, teachers can become even more effective at guiding students' learning.

Like questions, advance organizers are also commonly used to help set the stage for instruction. Since David Ausubel (1960) first described advance organizers as a cognitive strategy to help students learn and retain information, teachers have developed a variety of forms for effectively organizing learning. The K-W-L chart, for example, lists what students know, what they want to find out, and what they have learned (Ogle, 1986). Graphic organizers show how new ideas or concepts relate, providing students with a visual framework for acquiring and organizing new information.

Key Research Findings

- Learning increases when teachers focus their questions on content that is most important, not what they think will be most interesting to students (Alexander, Kulikowich, & Schulze, 1994; Risner, Nicholson, & Webb, 1994).
- Higher-level questions that ask students to analyze information result in more learning than simply asking students to recall information. (Redfield & Rousseau, 1981). However, teachers are more apt to ask lower-order questions (Fillippone, 1998; Mueller, 1973).
- Advance organizers, including graphic ones, help students learn new concepts and vocabulary (Stone, 1983). Presenting information graphically as well as symbolically in an advance organizer reinforces vocabulary learning and supports reading skills. (Brookbank Grover, Kullberg, & Strawser, 1999; Moore & Readence 1984).

- Students learn more when they are presented information in several modes (Paivio, 1986).
- By increasing the amount of "wait time" after asking a question, teachers foster increased student discourse and more student-to-student interaction (Fowler, 1975).

Implementation

Teachers want the time spent planning and teaching to generate the most effective and sustained learning. By implementing the recommendations below focused on cues, questions, and advance organizers teachers can gain from research and maximize effort.

1. Pace yourself. Teachers commonly underestimate how often they ask questions in class. Use questions to help students focus on what is more important to learn. Remember to ask questions when you introduce new content, and not just at the end of a learning experience. Asking questions will not only tell you what students already know, but also whether they are starting with misunderstandings about a topic.

2. Ask higher-level questions. Think about how to phrase questions. By asking questions that require analysis, you prompt students to go beyond simple recall of information and help to develop their higher-order thinking skills.

3. Wait time matters. Give students time to think before jumping in with an answer to your own question. Pausing for just a few seconds is likely to generate better classroom discourse, including more conversation among students.

4. Preview the big picture. Help students see where you are going by giving them an overview of what a lesson or unit will cover.

5. Use multiple modes. Connect with diverse learning styles by presenting previews of information in multiple ways—visually with graphic organizers, verbally (aloud), and in writing.

Additional Resources

For more on **David Ausubel's theories** about meaningful learning and the use of advance organizers, see Dr. Jack Hassard Web site entitled The Art of Teaching Science. He is Emeritus Professor of Science Education at Georgia State University. http://scied.gsu.edu/Hassard/

The Northeast Texas Consortium provides a resource for developing advance organizers, especially for distance learning.
http://www.netnet.org/instructors/design/goalsobjectives/advance.htm

The North Central Regional Educational Laboratory publishes Pathways to School Improvement which include Critical Issues. Building on Prior Knowledge and Meaningful Student Contexts/Cultures is a resource discussing the use of advance organizers.
http://www.ncrel.org/sdrs/areas/issues/students/learning/lr100.htm

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