

TEACHING METHODS

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Introduction

As school administrators it is our responsibility to provide guidelines and direction to our teachers. In order to do so we must keep current in regard to the materials and methods that are having the greatest effect in the classroom. The latest in educational technology, the curriculum best suited to meet the needs of our students, and the most effective teaching methods are areas that require our constant attention. While educational technology and appropriate curriculum are important, the primary focus in teaching centers on the way in which the material is presented.

Forness, Kavale, Blum, and Lloyd (1997) examined the effectiveness of 18 teaching interventions. A meta-analysis performed across these 18 areas found seven interventions to be highly effective when it came to student learning. Six methods were reported to show some promise, while the remaining five were reported to have little or no effect on learning at all. Listed in order of effectiveness are the seven interventions that proved to be most successful: (1) mnemonic strategies; (2) enhanced reading comprehension; (3) behavior modification; (4) direct instruction; (5) cognitive behavior modification; (6) formative evaluation; and (7) early intervention.

Direct instruction and early intervention are methods in and of themselves. The remaining five strategies are related to cognitive training. Because early intervention takes place prior to a child's formal academic program, the methods discussed in this article will focus on direct instruction and methods of cognitive training.

Direct Instruction

According to Sutton and Sutton (1997), direct instruction is a teaching method that can be used successfully to teach almost any subject in which the student is required to master certain academic skills. The subject areas include but are not limited to reading, mathematics, science, and social studies. With the help of a teaching script, the lessons are precisely sequenced and fast paced. They are taught to small groups with an emphasis on drill and practice and students are given immediate feedback as they participate. This method is similar to mastery learning, which also

requires frequent assessment and feedback regarding progress.

Lindsay (1998) in, *What the Data Really Show: "Old Fashioned" Teaching Really Works*, summarizes a review of research conducted on effective teaching methods. His findings on direct instruction include the following:

One form of Basic Skills education is Direct Instruction, wherein teachers explain directly what students need to learn and then teach and demonstrate those skills (active teaching with the goal of helping children learn the material). Technically, the term "Direct Instruction" refers to a specific and rigorously developed method for teaching. It might look like "old fashioned teaching," but there is significant structure and planning required, and some special training is needed to do it properly. While anything close to "old fashioned teaching" might do better than the new "teacher as facilitator" fad or "cooperative learning" or other methods in which little genuine instruction occurs, the carefully designed approach of true Direct Instruction has been shown to be vastly more effective in helping kids to learn ... (p.1).

One of the teaching methods that direct instruction challenges is process training. Process training is the training of psychological processes such as visual and auditory perception. In process training attempts are made to strengthen visual and auditory areas through the use of discrimination exercises. The exercises, however, are not performed within an academic context. If the visual and auditory areas are strengthened there is no transfer over to academic areas. Research indicates that this method has little or no effect on improving academics (Forness, Kavale, Blum, & Lloyd, 1997). Needless to say, direct instruction and process training are two mutually exclusive educational approaches.

Becker, Englemann, and Thomas (1975) (as cited in Sutton & Sutton, 1997, p.124) provide a model of the direct instruction procedure used to teach skills to students. The nine steps are as follows:

1. Attention Signal — The teacher secures the child's attention through a verbal cue.
2. Task Stimulus — The teacher presents (models) the task to be performed.
3. Stimulus-Direction — The teacher instructs the student to attend to the task by saying words like "Look here" or "Listen, please."
4. Stimulus-Prompt — The teacher maintains the student's attention to one or more specific characteristics about the task by describing, expanding or illustrating.
5. Response-Prompt — The teacher tells or shows the student exactly what she expects the student to know.
6. Response-Direction — The teacher questions the student about the skill that was taught and instructs the student to respond in a specific way (e.g., say, write, point, etc.).
7. Do-It Signal — The teacher gives the student a verbal ("Start, now.") or physical (hand drop) signal as to when to perform the specific task.
8. Task Response — The student performs the task as per the teacher's instructions.
9. Reinforcer — The teacher corrects or rewards the student and provides a word of encouragement.

Following the steps of direct instruction is very important. The lessons are precisely sequenced and fast paced. Because they are teacher directed and not student centered, rehearsing the lesson prior to teaching it, is highly recommended. Doing so should provide the flow and the pace necessary to maintain the student's focus and attention.

Cognitive Training

Cognitive training incorporates a variety of methods to accomplish its purpose. The overall goal of this intervention is to change the psychological processes of students with learning disabilities or attention deficit disorders. The psychological processes include one's ability to use spoken or written language. Problems in these areas are manifest in an individual's "imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations" (Federal Register, 1977, p. 65083).

Cognitive training, however, has proven to be successful in enhancing these abilities for two reasons: (1) it focuses on cognitive and metacognitive problems by providing special strategies for solving problems and (2) it stresses self-initiative and involving students in their own remediation (Hallahan & Kauffman, 1994).

Cognition is thinking. It is the ability to solve problems and to use strategies. Metacognition is thinking about thinking. It is the awareness of what strategies are needed to perform certain tasks along with the ability to use self-regulating or self-checking strategies. Planning one's moves, evaluating one's own effectiveness, and checking the outcomes of one's efforts is all part of metacognition (Hallahan & Kauffman, 1984).

The difference between cognition and metacognition can be illustrated in the process one goes through in solving math word problems. At the cognitive level a student identifies the correct numbers involved in a problem, chooses the correct mathematical operation to solve the problem, calculates the problem, and arrives at the correct answer. He solves the problem by using a particular strategy, but he may not be able to provide an appropriate explanation as to why or how he arrived at the solution.

Metacognition goes several steps further. The correct numbers are chosen, a decision is made and an explanation is developed as to what operation needs to be performed and why, an estimate is determined before performing an exact calculation, the calculation is performed, then the student checks his answer for accuracy. If the answer is incorrect, he follows a procedure in which he retraces his steps, determines why the error occurred, and then corrects it.

The goal of cognitive training is to teach students how to logically talk themselves through problems or situations. The mnemonic keyword method, behavior modification, cognitive behavior modification and formative evaluation are all forms of cognitive training.

The mnemonic keyword method is a technique used to help students remember academic information. The abstract information initially presented to a student is transformed into concrete pictures that present the material in a more effective, more meaningful and memorable way.

According to Fulk (1994), the purpose of the keyword strategy is to help students remember any two or more pieces of information together. Fulk provides six steps that make up the mnemonic keyword strategy.

1. Identify the word or term (e.g., Charles Spurgeon).
2. Tell the definition or give the answer to the information (Prince of the circuit-riding preachers).

3. Find a keyword that sounds like the new word or word you need to remember (Spur for Spurgeon).
4. Imagine an interaction between spur and the fact that he was the prince of the circuit-riding preachers (There is a man on a horse with a crown on his head clutching a Bible in one hand. He has large spurs on his boots and is getting ready to goad the horse). Draw a picture of the strategy.
5. Think about the strategy (There is a man with a crown on his head. This reminds me of a prince. He is on a horse. This reminds me of a circuit rider. He has a Bible in his hand. This reminds me of a preacher. He is wearing large spurs. This reminds me of his name. This will help me to remember that Spurgeon was the prince of circuit-riding preachers).
6. Study the keyword; remember the action; evaluate the strategy; congratulate yourself.

As the teacher goes through this procedure with the students, she talks aloud so she can model the elements of clear thinking. This cognitive modeling provides students with the opportunity to observe the thought processes that one goes through in order to solve a problem. As a student realizes that others attempt to solve problems by talking things through, asking themselves questions, evaluating their own ideas, and encouraging themselves on a job well done, they will engage in these activities on a more frequent basis.

The mnemonic keyword method is somewhat similar to Fernald's multisensory VAKT method of instruction. The VAKT (visual, auditory, kinesthetic, and tactile) method incorporates four modalities into the learning process: seeing, hearing, movement, and touch. His active involvement in the learning process is what helps him to remember the facts or concepts being taught.

Behavior modification (Note: Behavior modification was the topic of the last newsletter and was dealt with extensively. Therefore, it will not be addressed in this newsletter.)

Formative evaluation deals with the fostering of communication between faculty and students for the purpose of improving instruction. Three models have been developed and demonstrate a significant capability for improving both teaching and learning (Travis, 1996). One model includes classroom assessment in which a selection from fifty assessment techniques are used to discover how students are learning and what instructional techniques work best for them.

A second model involves responding to inventories and questionnaires designed to elicit specific information from students and others involved in the learning process. The teacher evaluates the information and instruction is changed to better meet the needs of the students.

The third model is referred to as "small group diagnosis." In this model students are divided into small groups with an outside facilitator presiding over each group. The students are encouraged to share what they like and don't like about a particular class. They comment on the things that are working in the class and make suggestions as to how the class can be improved. The comments are gathered together, reviewed, and appropriate changes are put into effect (Travis, 1996).

Cognitive behavior modification "is a technique that teaches individuals to monitor their own behavior, pace, or performance and deliver self-reinforcement at established increments of time" (Quinn, Swaggart, & Myles, 1994, p.1). Cognitive behavior management includes **self-monitoring**, **self-instruction** and **metacognition**.

Self-monitoring is a technique that requires a student to keep track of his own behavior. He monitors himself and records whether or not he was on task when he receives a visual or auditory cue. One way to do this is for the student to use a tape recorder to play a tape containing a number of tones which sound at varying intervals. When the student hears a tone, he indicates on a separate sheet of paper whether or not he was working on the assigned activity at the time the tone was heard. As added reinforcement the student might also develop a graph that provides a visual representation of his behavior. This strategy is based on the idea that students can stay on task if they are reminded, visually or auditorily, to perform basic steps and are consistently awarded for performing those steps (Forness, Kavale, Blum, & Lloyd, 1997).

Self-instruction is a technique used to encourage a student to think about his behavior. The same self-talk discussed in the mnemonic keyword method related to academics is used to assist with appropriate behavioral changes. The student verbalizes his thoughts aloud until he demonstrates that he is using correct or logical thinking patterns. By requiring students to think about their behaviors more carefully they can better control their impulsive and inattentive behaviors. This procedure has been proven to be very effective in helping students with attention problems become more

aware of and in control of their problems (Hallahan & Kaufmann, 1994, p.186).

Conclusion

The key to successful teaching is the teacher. Good teachers will use a variety of methods to help a young person that is struggling. Determining which methods truly work is a challenge many teachers face. The interventions described in this article have been determined to be effective with children with learning difficulties. Good teachers will become better teachers and better teachers will become great teachers when they are aware of and when they incorporate teaching strategies that have been proven to be effective in the learning environment.

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