Research on Modeling: Implications for Teacher Training Programs

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The importance of modeling as a method of learning is receiving increased emphasis (Bandura, 1969, 1971, 1977; Flanders, 1968; Staats, 1975). Several other terms in the psychological literature, such as "imitation," "vicarious learning," "identification," "social facilitation," "contagion," "observational learning," "vicarious reinforcement," and "the influence of examples" have approximately the same meaning as modeling. Theorists have attempted to distinguish among these various concepts in terms of antecedent, mediating, and behavioral variables, however Bandura (1969) has questioned the value of these arguments and has proposed that the same learning principles are involved in each. Central to each process is a learner, called an observer, viewing the performance of a model and then imitating the actions of this model.

"No trial learning," modeling is of great importance in learning new behaviors. In this regard, Bandura (1969) indicated that exposure to a model may have three different effects:

1. New response patterns not previously existing in the behavioral repertoire of the observer may be acquired (observational learning of modeling effect).

2. Inhibitory responses in the observer may be strengthened or weakened (inhibitory or disinhibitory effect).

3. Responses of others may serve as discriminative stimuli for the observer in facilitating the occurrence of previously learned responses in the same general class (response facilitation effect).

Much of the information on modeling emerges from research laboratories where the focal point is the modeling of minute and detailed behaviors. The subjects are usually children with the focus being on the modeling of aggressive behavior (Bandura, 1969, 1977). Typically the studies involve one of two designs. In the first, a subject observer sees the behavior of a model and a comparison of the subject's subsequent behavior is then made with that of subjects who have had no exposure to the model. Imitative behavior is assessed by judges' ratings of the degree of similarity between the observer's behavior and that of the model. In the second design, the tendency of subjects to emit the behavior in question is assessed and then experimental subjects are exposed to the model while control subjects are not. The change in frequency or amplitude of the subjects' responses serves as the dependent variable.

In psychology laboratories a great variety of response patterns differing in content and complexity have been examined. Individual studies in these rigidly controlled settings have indicated the modeling of distinctive modes of aggressive behavior, dramatic play patterns, pro-social frustration reactions, self-reinforcement and self-evaluation responses, conceptual behaviors, moral
judgmental orientations, self-imposed delay-of-gratification patterns, linguistic structure, and distinctive phonetic variations in verbal behavior (Bandura, 1969, 1977).

A few studies of modeling have also been completed in controlled educational settings. For example, Brody and Zimmerman (1975) demonstrated the effect of distant (five foot separation) and proximate (one foot separation) modeled teaching sessions on the size of personal space reported by pupils from open and regular classrooms. Examined by means of a written test, students exposed to the proximate modeled training session decreased their mean interfigure distance whereas children in the distant modeled training session exhibited little change in interfigure distances.

A few research studies in more natural educational settings have demonstrated the effectiveness of modeling to positively influence both academic performance and classroom behavior. For example, a teacher modeling technique was used to increase student performance in arithmetic (Smith & Lovitt, 1975) and peer models were used to modify inappropriate classroom behavior (Caspar, 1972). Appropriate twelfth grade models have also been shown to bring about desirable changes in the behavior of eighth grade students, including increased involvement in school activities, participation in sports, and attendance at athletic events (Matheny, Anderson & Blue, 1978).

Modeling studies have recently been initiated in physical education settings. Westcott (1978) examined the peer encouragement behavior of youth sport participants. He found that students from teams with high levels of teacher encouragement provided significantly more encouragement to teammates than students from teams that had low levels of teacher encouragement. Westcott (1978) also examined the peer encouragement behavior of students who observed or did not observe an encouraging instructor. In this study, each of 165 young boys and girls was asked to teach a specific sport skill to a teammate.

Half of the students interacted with an encouraging instructor shortly before teaching their peer, the other half did not. Students who observed the encouraging instructor provided significantly more encouragement to their teammate than their counterparts.

Roler (Note 1) also studied the effects of teacher modeling on the interactions of students in physical education settings. He examined the relative effectiveness of teacher modeling, instruction, and grade incentives on the frequency of supportive verbalization among peers in a university basketball class. Compared to the other two treatments, instruction had the smallest effect on increasing the rate of positive statements. Grade incentives were most effective, however modeling by the teacher had a marked effect on increasing positive interactions among students. Both of these studies demonstrated that student interactive behavior in physical activity settings could be significantly influenced by intentional teacher modeling.

Modeling occurs almost any time, whether the model wants it or not. In schools all that is necessary is that teachers or their products be observed. Most teachers are taught to use modeling principles when demonstrating motor skills but they may not be instructed on the powerful effects of unintentional modeling. A model for a great deal of incidental learning including socializing skills, rationality of thought, attitude and values, emotional maturity, politeness and good manners, personal respect logical thinking, sex-role and culture integration behaviors is provided by teacher (Good & Brophy, 1973; Williams & Anandam, 1973).

The importance of physical education being excellent models has been emphasized previously (Landers, 1978; Westcott, 1979). Landers (1978) reviewed the research on modeling variables that affect motor skill learning and made recommendations regarding how to intentionally use observational learning principles in teaching physical skills through demonstration