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Non-Traditional Intervention Strategies for Improving the Teaching Effectiveness of Graduate Teaching Assistants

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On campuses throughout the country, interest in improving college and university teaching abounds. Numerous national reports criticizing current undergraduate education (Boyer, 1987; NIE, 1984), increased demand for the use of qualified student opinion in faculty tenure and promotion decisions, and a growing number of publications addressing ways of improving teaching (Civikly, 1986; Eble & McKeachie, 1985; Furhrmann & Grasha, 1983; Katz, 1985; Lowman, 1984; Schön, 1983) all underscore the need to improve the quality of instruction, especially at the undergraduate level. Since graduate teaching assistants (TAs) play significant roles in the teaching of undergraduate courses, many research universities have increased their efforts to train graduate students to become more effective teachers. Bassett and Browning (1978) maintain that the future of departments depends upon high quality teaching by graduate teaching assistants. In 1986, Ohio State University brought together faculty, graduate deans, faculty developers and others to address these very issues at a national conference on "Institutional Responsibilities and Responses in the Employment and Education of Teaching Assistants."

How do we respond to the charge to improve the teaching effectiveness of graduate teaching assistants? Assuming that we can assess a graduate TA's teaching competence and identify target behaviors that need to be developed or changed, how

then do we go about intervening to produce the desired new behaviors?

Traditionally, there have been a number of different methods used to improve teaching. These have included course work, seminars, colloquy, workshops (O'Connell & Meeth, 1978), peer observation and critique (Centra, 1977), expert observation and critique (O'Connell & Meeth, 1978), team teaching (Eble, 1971), videotaping (Gibson, 1968; Popham, 1966), microteaching (Allen & Ryan, 1969; Johnson, 1976), and learning packets or resource materials. We, like others, have used many of these approaches to modify the behavior of TAs. Three of the methods—resource packets, collection and interpretation of student evaluations, and expert observation and critique—have become standard intervention strategies in our TA training programs at the University of Washington (Nyquist & Wulff, 1987; Staton-Spicer & Nyquist, 1979). Realizing, however, that no intervention strategy is applicable universally, we sought to expand our repertoire of useful strategies. We explored literature in various disciplines involved in modifying human behavior (e.g., social psychology, psychiatry, counseling) as well as education, and discovered three approaches which we believe can be developed to improve the teaching effectiveness of TAs.

The purpose of this article is to describe the three approaches, examine their previous uses, identify the advantages and disadvantages of each approach, and suggest appropriate applications for improving the teaching effectiveness of graduate TAs.

STANDARD-OTHER MODEL

Since many people believe that we “teach as we have been taught,” the idea of imitating teaching models is not new. The particular use of the approach, however, does provide a unique way of influencing teaching behaviors.

In the standard-other modeling technique, the learner attempts to match his or her behavior to that of another person, the model, whose behavior provides a standard to be imitated. The underlying assumption of this technique is that observation of others can result in changed behavior on the part of the observer without previous enactment or reinforcement of the

behaviors. Grounded in social learning theory, this strategy has been labeled "modeling," "imitation," "observational learning," and "vicarious learning" (Bandura, 1969).

Modeling assumes that an observer can imitate new behaviors that are demonstrated by another person. These behaviors may take the form of a unique combination of previously learned behaviors or the use of previously learned behaviors in response to new situations. Models can be used to increase or decrease the frequency of behaviors and to facilitate previously learned but seldom demonstrated behaviors.

The technique of standard-other model involves a five step procedure:

1. The individual assesses a segment of his or her performance and identifies the behaviors that need to be acquired, eliminated, or changed. This is normally videotaped to preserve for comparison purposes.

2. The individual selects specific behaviors as target behaviors to adopt or modify.

3. The individual views live or media demonstrations of a model performing the specified behaviors appropriately.

4. The individual rehearses the behaviors and attempts to perform them in a given situation. Typically, his or her efforts are videotaped.

5. The individual, frequently in consultation with an expert, assesses behavior change by comparing his or her performance to the baseline tape.

Previous uses. This approach to modifying behavior has been widely used for various purposes: modeling pre-schoolers' responses to aggressive acts through film, (Bandura, Ross & Ross, 1963) altering children's moral judgments (Bandura & McDonald, 1963), increasing decision-making behaviors among male and female high school students (Krumboltz & Schroeder, 1968; Meyer, Strowig, & Hosford, 1970), increasing interviewing skills (Krumboltz & Schroeder, 1965) improving counseling skills, (Thoresen, Hosefor, & Krumboltz, 1969), and treating homosexuals who wish to become heterosexuals (Hosford & Rifkin, 1974). Modeling procedures have also been used successfully to develop or reduce a variety of responses in many counseling problems: marital communication, sexual inadequacies, and vocational and personal decision making (Bandura, 1977; Krumboltz & Thoresen, 1976; Thoresen & Hosford, 1973).

Finally, the standard-other model has already shown potential for improving teaching effectiveness. Hosford and Brown (1976) reported significant results for five TAs who improved specific teaching behaviors using the technique.

Advantages. There are several advantages of the standard-other model over other techniques. For instance, the method does not require that the person initially be able to approximate the target behavior. In addition, the use of the standard-other model can facilitate skill acquisition as well as the elimination of a variety of emotional responses (Bandura, 1969; Krumboltz & Thoresen, 1969; Thoresen & Hosford, 1973). Modeling or observational learning also seems to have the capacity to shorten the learning process (Bandura, 1969; Bandura & Huston, 1961). Finally, the technique is not as costly as other types of behavioral intervention since the investment of time comes primarily from the individual desiring the behavior change rather than counselors, consultants, and/or other experts.

Disadvantages. Despite its strengths, the use of the standard-other model does have certain disadvantages. First, acquiring an effective model for imitation may be difficult. Since each individual is working on specific, individualized behaviors, it is sometimes impossible to find live or videotaped models performing a particular behavior adequately and with sufficient frequency so that the behavior can be identified, selected from the total behaviors, and imitated.

Second, observation does not necessarily insure imitation. A variety of factors may enhance or hinder the imitative process. A model's social characteristics may influence the observer's ability to imitate the behaviors more than his or her willingness and ability to perform the behaviors (Grusec & Mischel, 1966). Such variables as the model's prestige (Krumboltz, Varenhorst & Thoresen, 1967), status (Lefkowitz, Blake & Mouton, 1955), power (Mischel & Grusec, 1966), and similarity to the observer (Hosford & de Visser, 1974) may affect the imitative process in positive ways. Or as indicated in some studies, observing another can produce negative reactions (McDonald, 1973). Perhaps viewing a person who is more competent than oneself on particular behaviors serves as a reminder of one's own inadequacies which may create anxiety and hinder subsequent learning (Thoresen, Hosford, & Krumboltz, 1969).

Such experiences seem to cause some individuals to devalue their own efforts (Bandura, 1977; Graham & Aidells, 1972) and thus work against behavior change. The personality characteristics of the observer can also affect the predisposition to participate in observational learning. For example, differences in behavior change can be attributed to differences in observers' authoritarianism (Epstein, 1966), dependency (Ross, 1966), and physiological arousal (Bandura & Rosenthal, 1966).

Application for teaching assistants. Given the success of the standard-other model in a variety of non-instructional settings, we believe it to be a promising intervention strategy for improving the teaching effectiveness of TAs. To utilize the model for changing teaching behaviors, the TA would assess his or her own performance in the classroom, usually with videotape to determine any deficiencies and to identify desired behavioral changes. The next step is to locate a tape or actual live demonstration of another person executing appropriately the specific behaviors the TA needs to acquire. The TA would then observe repeatedly the effective demonstration of the behaviors to be initiated. This could be followed by rehearsal of the specific teaching behaviors. Having the TAs view the videotape of their performances at this point is extremely useful. The next step would be for the TA to try to reproduce the target behaviors with his or her own class. The final step would include assessment of the attempted behavioral changes.

The use of the standard-other model as an intervention strategy for improving teaching effectiveness appears to be most appropriate when the TA is attempting to acquire new teaching behaviors, since, in that case, modeling by another person is essential. For example, such skills as organizing a lecture, providing specific examples, asking particular types of questions, giving directions clearly, and providing verbal reinforcement are skills that can be imitated if an effective model is provided. In addition to these behaviors, TAs at the University of Washington have used the standard-other model for improving preciseness of delivery, drawing students into class discussion, responding in depth to student comments, and encouraging students to respond to one another.

SELF-AS-MODEL

The self-as-model intervention technique evolved from the use of the standard-other model and shares the same basic assumptions: observation can result in adding behaviors not previously in the observer's repertoire, and models can be used to increase or decrease the frequency of behaviors. In addition, advocates of the self-as-model technique believe that a model's characteristics influence the extent to which an observer can imitate the model; thus, a model of oneself would be the easiest to imitate.

The steps in the procedure include the following.

1. The individual learns how to observe and record his or her own behavior.
2. The individual identifies a variety of behaviors that are in need of change.
3. The individual selects a specific behavior to change, determines the desired level of performance, then takes base rates from previous tapings.
4. A consultant edits the previous tapings to create a positive model in which the individual is shown performing the behaviors in an appropriate manner. If there are no instances of the desired behaviors, a model tape is constructed from role-playing situations.
5. The model is observed repeatedly.
6. The individual monitors and records his or her own progress in achieving the desired behavior in actual situations (Hosford & Polly, 1975).

Previous uses. The self-as-model as an intervention strategy has already been widely used with a variety of problems. Psychologists using the procedure claim effective behavior change in cases of depression (Seitz, 1970), marital problems (Edelson & Seidman, 1975), sexual inadequacies (Hosford, 1975; Serber, 1974), and prison behavior of inmates (Hosford, Moss & Morrell, 1976). The technique has also been used for purposes of counselor training (Hosford, 1975) and micro-counseling (Ivey, 1975; Ivey & Authier, 1978). Application in teacher training (Hosford & Brown, 1975) and student anxiety reduction (Hosford, 1974) lends support to the model's effectiveness in changing instructional behaviors.

Advantages. The self-as-model is consistent with research findings which suggest that greater sensory arousal occurs

when an individual observes himself or herself (Fuller & Manning, 1973). Several studies suggest that imitative learning is enhanced when an observer's perceived similarity to the model increases (Baron, 1970; Kazdin, 1974; Kornhaber & Schroeder, 1975). Thus, the observer is likely to attend more carefully to the model when that model is himself or herself. A further advantage is that the individual can become self-sufficient in the use of the process and systematically work on changing many behaviors, from the elimination of simple distracting personal mannerisms to high level cognitive functions. The process is straightforward, does not require a consultant once the technique is mastered, and fosters self motivation when the individual can see behavior change over time. An additional benefit to the participant, according to Braucht, is improved self concept (1970).

Disadvantages. Although self observation typically results in positive outcomes, some individuals may experience problems undergoing self confrontation. In certain instances self observation may reinforce negative views a person already holds (Schaefer, Sobel & Mills, 1971; Walz & Johnston, 1963) or may result in a person denying the behaviors he or she observes (Danet, 1968; Nielsen, 1964). In fact, for some individuals, the anxiety experienced during self confrontation seems to result in diminished subsequent performance.

To avoid such responses in the self-as-model procedure, individuals should not view instances of inappropriate behavior. The goal is to enable them to view themselves only when performing the behavior effectively. This requires an experienced editor to analyze the tape and edit the successful instances to construct a model tape. The process is extremely time consuming and eliminates one of the procedure's strengths, the possibility for complete self reliance in modifying behavior.

Application for teaching assistants. Even considering these drawbacks, however, the self-as-model procedure appears promising for modifying teaching behaviors. To implement this strategy, TAs must observe and record their own teaching behaviors, identify behaviors that need changing, select a teaching behavior on which to focus, construct an edited tape which provides instances of effective performance of the target behavior, view the tape repeatedly, and assess subsequent progress.

The process could be particularly useful for the extinction

of dysfunctional, idiosyncratic mannerisms such as verbalized pauses or inappropriate bodily movement or gesture. Such behaviors can be distracting to students and need to be eliminated.

A second appropriate use of the self-as-model occurs when a TA is attempting to increase the frequency of behaviors which exist in his or her repertoire but are seldom used. Such behaviors as higher order questions, providing more complete summaries during lecture, eliciting student responses, providing positive verbal reinforcements, and perception checking fall into this category.

VIDEO COACHING

A third non-traditional intervention strategy, video coaching, is a process of behavior modification induced by verbal prompting via a small transistorized ear plug (Nyquist & Wulff, 1982). The procedure requires special equipment whereby a prompter located away from the interaction situation can view the episode via videotape and simultaneously direct the person who is wearing the device to demonstrate specified behaviors.

The basic assumptions underlying video coaching are that verbal messages can enable individuals to adapt or modify their behavior instantaneously, that intervention in the midst of an interaction is preferred to intervention after the fact, and that individuals can attend to two sets of verbal stimuli in rapid succession. Video coaching requires a high trust level between the individual being coached and the person giving instructions. Such a system also presupposes a tolerance of and willingness to use technology as an aid in changing behavior.

The process itself is not complex and includes six steps for the individual desiring to change his or her behavior:

1. The individual meets with a consultant to set up behavioral goals for a particular interaction segment. These behaviors are normally based on a prior assessment of the individual's behavior in a similar situation.

2. The individual selects cues to be used by the prompter to enable the individual to reach the behavioral goals agreed upon.

3. The individual places a tiny, almost invisible, transistorized receiver behind the ear through which the prompter's voice can be heard.

4. The individual conducts a typical interview, counseling session, or classroom interaction modifying his or her behavior in response to the previously agreed upon cues from the prompter.

5. The prompter views the individual's performance through the live videotape and intervenes whenever appropriate with either short, prescriptive suggestions for behavior modification or positive reinforcement for behaviors assessed as effective.

6. The individual views the videotape of his or her behavior, including the verbal directions given by the prompter, to assess the degree of behavior change.

Previous uses. Video coaching has been employed as an intervention strategy in a variety of situations including the training of mental health professionals (Boylston & Tuma, 1972), teaching of parenting behaviors (Gordon & Kogan, 1975; Johnson & Brown, 1969), training of student clinical psychologists (Korner & Brown, 1952), teaching of behavior management skills to pedodontics students (Domoto, Weinstein & Getz, 1979), teaching of interviewing techniques (Ward, 1960), and the training of clinical psychologists, and university instructors (Nyquist & Wulff, 1982; Sanders, 1966).

Advantages. There are numerous advantages to video coaching. First, the technique provides intervention and/or reinforcement immediately following an individual's behavior. It eliminates the syndrome of "If you had only done it this way" that frequently accompanies the critique of performances after the event. This aspect of the strategy also allows the prompter to assess the impact and efficacy of his or her instructions to the individual. A second advantage is that the strategy guarantees the presence and resources of an experienced prompter. In therapy training, having a prompter or supervisor lowers the initial encounter anxiety level of inexperienced therapists and protects them from mishandling difficult situations (Boylston & Tuma, 1972). Initial studies with pedodontics students indicate that student dentists who received video coaching showed a greater increase in overall self-confidence than their peers who were not coached, although the change was not statistically significant (Domoto, Weinstein & Getz, 1979). A final advantage is that of student satisfaction with the procedure. In the two groups of pedodontics students, the video coached group identified its experience to be more positive

than the group who employed videotape critique following the students' performances. Eighty percent of the participants of video-coached groups reported they would recommend the experience to other students, while only thirty-three percent of the videotape critique group made similar recommendations (Domoto, Weinstein & Getz, 1979).

Disadvantages. Since the use of the strategy is limited and little data have been collected on its effectiveness in changing behavior, the known disadvantages are primarily technical ones. The demand for supervisor/consultant time is high, as the prompter must attend the entire session each time an individual is coached. Additional time must be invested in training prompters to intervene in specific ways (Gordon & Kogan, 1975). Equipment purchase and special videotape setups that allow the individual to move freely about the room also create problems for extensive use of the technique.

In addition, some individuals find the idea of being video coached offensive at first, and users must overcome initial resistance to the method. Establishment of a trust level between prompter and the person being coached is critical and takes some to develop. Two final disadvantages may exist: the process may create a dependency relationship between the individual and the prompter, and the trainee may have limited opportunity to develop his or her own style under such a system. These concerns need to be investigated before the effectiveness of the process can be fully assessed.

Application for teaching assistants. Even considering these disadvantages, however, video coaching offers possibilities for improving teaching effectiveness that other procedures do not. Intervening at critical times affords the opportunity of restatement and clarification. It also provides the TA with a second chance at many "teachable moments" which might not be recognized by a novice TA. TAs would need to set behavioral goals for improvement, identify specific teaching behaviors to increase or decrease, practice being coached until they could respond appropriately to the prompter's suggestions during the teaching act, teach a class session modifying their behavior on the basis of the prompter's cues, and assess the videotape for the desired behavioral changes.

The process seems particularly appropriate for improving highly interactive behaviors as in discussions when blocks of

instructor silence occur which allow for prompting cues. The pacing of such behaviors as asking higher order questions, eliciting student responses, and integrating student responses permits a prompter to cue a TA during moments of silences. The prompter can ask a TA to rephrase a question or response, provide a restatement for the TA to imitate, expand a question, or modify a recall question into an application question. The strategy appears to be most useful in instances where immediate intervention is critical. TAs using video coaching at the University of Washington have worked on such behaviors as interspersing lecture with questions, asking higher order (i.e., analysis, synthesis, evaluation) questions, increasing wait time when asking questions, and eliciting student questions for feedback purposes.

In this paper we have described three non-traditional intervention strategies, examined their previous uses, identified advantages and disadvantages of each approach, and suggested applications for TA training. While these techniques have been widely used for various purposes, they have not been used systematically or extensively for improving the teaching effectiveness of graduate TAs. We believe these approaches to be promising ones for changing specific teaching behaviors in the effort to enable graduate TAs to be highly effective in the classroom.

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