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ABSTRACT

The same techniques of behavior modification that can be used by teachers to manage student behavior in the classroom can also be used by supervisors to alter the behavior of teachers. In both cases, it is necessary for the supervisors and teachers to focus primarily on the individual's behavior itself, rather than on what causes that behavior. To modify behavior, the teachers and supervisors must determine what response or type of behavior they wish to reinforce in the individual. The two types of response conditioning used to produce behavior modification are respondent conditioning and operant conditioning. Operant conditioning examines the relationship between an individual's behavior and his environment and attempts to understand the behavior through knowledge of the factors that modify the behavior. Both positive and negative reinforcement are used in operant conditioning to produce the desired behavioral response. Two other methods that teachers and supervisors can apply are (1) shaping or successive approximation, which is used to create a behavior that does not exist or to strengthen one that is not apparent, and (2) contingency contracting, which requires the teacher or supervisor to make a contract with the student under which rewards are promised in return for desired learning behavior. (Besides numerous quotations in the text, from behavior modification literature, a substantial bibliography is provided at the end for further study.) (ELG)

A SUMMARY OF OPERANT CONDITIONING TECHNIQUES

FOR USE BY SUPERVISORS AND TEACHERS

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Introduction

The purpose of this paper is to identify some techniques of behavior modification, specifically operant conditioning techniques, with which a supervisor can use in changing teaching behavior or a teacher can use in managing the classroom learning situation and classroom behavior.

First, a short discussion on the general principles of behavior modification will be presented. The second section will be concerned with a discussion of respondent conditioning and operant conditioning. This section will also be concerned with a short discussion of reinforcement - positive and negative reinforcement. In the third section, some techniques of operant conditioning will be discussed with reference to supervisor use and teacher use in changing or modifying behavior. Specific techniques to be discussed are shaping or successive approximation and contingency contracting.

This paper will not attempt to discuss all the various techniques of behavior modification and operant conditioning, but will limit itself to two techniques the writer believes are the most vialiable for supervisor and teacher use. These discussions will be short summary discussions. However, the supervisor or teacher desiring to use these techniques should consult the references at the end of this paper for further study.

Most of the literature concerning the use of behavior modification techniques in education are directed toward the use of these techniques in the classroom learning situation. Little, if any, literature concerns supervisory use of these techniques in changing teaching behavior. However, generally, the principles are the same whether using these techniques for managing classroom learning or changing teaching behavior. The supervisor could well make use of these techniques not only for changing teaching behavior but also for preparing and training teachers in the use of these techniques in the classroom.

Some Principles of Behavior Modification

A supervisor or teacher, before attempting to alter behavior, whether teacher behavior or classroom behavior, must first determine what is meant by behavior or what constitutes behavior. The supervisor or teacher should also know what is meant by behavior therapy or modification. Schaefer and Martin (1969) give the following definition of behavior:

> Behavior is what an organism does including actions that take place inside the organisms body and therefore cannot be seen. But this definition is valid only if it is taken literally and not used to describe what an organism is. For example, the statement that a person is "depressed" says nothing about what the depressed person does, although one gets the idea that it is behavior which is being labeled (p. 3).

Skinner (1938) gives the following critical definition of behavior in his statement that:

> Behavior is what an organism is doing - or more accurately what it is observed by another organism to be doing. But to say that a given sample of activity falls within the field of behavior simply because it normally comes under observation would misrepresent the significance of this property. It is more to the point to say that behavior is that part of the functioning of an organism which is engaged in acting upon or having commerce with the outside world (p. 6).

In summary, Cyril Franks (1969) gives a concise definition of behavior in his statement that, "any response made by a person, whether it be motor movement or a verbal

statement, is behavior (p. 1)."

It must first be assured that the behavior to be altered or changed is a behavior an organism emitts and not a state of being that is described or labeled as behavior. As in the description by Schaefer and Martin above, the supervisor or teacher desiring to change or alter behavior which is described as being depressed would find it difficult using any technique to alter the depression.

According to Schaefer and Martin (1969), "therapy is any set of procedures which produce a beneficial change in a patient (p. 4)." If the supervisor or teacher is concerned with behavior modification or behavior therapy, they should have at least a working definition of behavior therapy. Schaefer and Martin (1969) state that:

> Behavioral therapy takes as its basic problem human action whether the action is an obnoxious way of eating, a habit of talking to voices no one else hears, or the practice of lying under a chair all day. Behavioral therapy can be distinguished from other therapies primarily in terms of its reliance upon principles of learning theory. Its basic method of procedure is to arrange contingencies between the patients behavior and the consequesces of that behavior. Consequences are events that closely follow an instance of behavior (p. 5).

Clarizio and Yelon (1969) provide a more simplified definition in their statement that behavior therapy is, "a theraputic process in which the primary goal is to change overt behavior rather than to re-structure an individual's personality makeup (p. 266)."

Consequently, a supervisor or teacher attempting to use behavior modification techniques in managing the

classroom learning situation or in changing teacher behavior must be primarily concerned with an individual's behavior rather than what causes that behavior. Clarizio and Yelon give specific reasons why a teacher should focus primarily on behavior. These techniques also hold for the supervisor and why he should focus primarily on the teacher's behavior. Clarizio and Yelon give these reasons:

1. First, teachers by virture of their orientation are not trained to prob the causes of behavior that even mental hygiene specialists often consider obscure and uncertain. Hence, is it really helpful to ask the teacher to understand the causes underlying children's distrubed behavior?

2. Teachers in any case are rarely in a position wherein they can directly manipulate the causes so as to modify their influence on the child's classroom adjustment. For example, if the problem lies in the parent-child relations or in a brain lesion, there are few if any constructive intervention techniques that the teacher can employ. Yet the troublesome behavior persists and must be handled as effectively as possible when it occurs in the classroom.

3. Even in such occasional cases where the causes can be identified and manipulated directly, the maladaptive behaviors may persist. Thus, despite the discovery and correction of the contributing role of poor vision and faulty child-rearing practices in a reading disability case, a pupil may continue to experience difficulty with his reading until attention is specifically devoted to his reading behavior, and unless he can experience success in this specific area, his mental health will continue to be impaired.

4. Behaviors or symptoms or habits may in their own right be incapacitating and disturbing, and current persisting symptoms may themselves be producing emotional disturbances above and beyond the core disturbance from which the child is suffering.

5. There is little substantial evidence to indicate that if the teacher assists the child in modifying

his behavior or symptoms, other undesirable behaviors will inevitably take their place in the manner of symptom substitution.

6. Finally, and most importantly as already implied, the teacher most commonly has no resort other than to deal with the pupil's behavior as it appears in the here and now (Clarizio and Yelon, 1969, p. 265-266).

It should be remembered, however, that according to Schaefer and Martin (1969), "there is rarely a one-to-one relationship between a given stimulus and a given response. The same stimulus may well elicit different responses in different people, or it may elicit different responses in the same person under different conditions and at different times (p. 19)." The supervisor or teacher must determine what response is to be reinforced with each individual and what stimulus will reinforce that particular response. Reinforcement being that stimulus which increases the rate of the response it follows.

Conditioning and Reinforcement

It is important for the person using behavior modification techniques to understand the two types of response conditioning. Respondent or classical conditioning credited to Pavlov and Skinnerian operant or instrumental conditioning are the two basic classes of response conditioning. Concomitantly, responses are separated into two classes; one is called respondent or reflex responses, and the other is called operant or instrumental responses. These responses are called respondents and operants.

Behavior which is catagorized as responses emitted is also classified as operant or reflexive (respondent). According to Ferster and Perrott (1968):

> Operant behavior and reflex behavior are functionally very different. The operant repertoire is determined almost entirely by the animal's experience as it interacts with the environment (ontogenetic) while the reflex is almost entirely determined by its inherited (phylogenetic) history. In the operant repertoire, the animal acts on the environment and alters it. In the reflex, the environment acts on the animal and alters the internal state through various physiological processes (p. 74).

Operant conditioning is concerned with the relationship between the behavior of an organism or animal and its environment. It attempts to understand the behavior through the knowledge of the factors that modify the behavior. According to Reynolds (1968), "operant conditioning is an

experimental science of behavior. Strictly speaking, the term operant conditioning refers to a process in which the frequency of occurrence of a bit of behavior is modified by the consequences of the behavior (p. 1)." According to Skinner (1969):

> An operant is a class, of which a response is an instance or member. . . . Strictly speaking, it is always instances which are counted in determining frequency, and from that frequency the probability of a response inferred. The probability is frequently taken, however, as the measure of the strength of an operant. Strength has no meaning except as a property of an instance, such as its force or speed. It is always a response upon which a given reinforcement is contingent, but it is contingent upon properties which define membership in an operant. Thus a set of contingencies defines an operant. (p. 131).

It should also be mentioned that with operant conditioning or behavior as contrasted with respondent behavior, according to Reynolds (1968):

> There is no environmental eliciting stimulus for operant behavior; it simply occurs. In the terminology of operant conditioning, operants are emitted by the organism. . . . In each case, the behavior occurs without any specific eliciting stimulus. The inital cause of operant behavior is within the organism itself. The organism simply uses its inherited muscular and skeletal structure in relation to the environment in which it finds itself. It is in the biological nature of organisms to emit operant behavior (p. 8).

Ferster and Perrott (1968) state that, "reinforcement is the fundamental principles of operant behavior. It describes the procedure by which the frequency of an operant performance is increased and also concerns the conditioning of reflexes (p. 1)." The emphasis in operant conditioning

is placed on the probability that a behavior will occur. Therefore, according to Reynolds (1968), "in order to increase the rate of occurrence of a response already in the animals repertoire, it is only necessary to follow occurrences of the responses with a reinforcing stimulus (p. 26)." However, as Skinner (1969) states, "it is not enough to say that an operant is defined by its consequences. The consequences must have had the effect of making a condition of deprivation or aversive stimulation a current variable (p. 127)." In other words, an individual desiring to change behavior or increase the frequency of occurrence of a behavior by the use of reinforcement must be sure that the reinforcing stimulus is not readily accessable.

The supervisor or teacher using operant conditioning techniques should be familiar with some assumptions about behavior and its environment. These assumptions are:

1. A set of definitions which can be used in the objective, scientific description of behavior and its environment.
2. A group of techniques and procedures for the experimental study of behavior in the laboratory.
3. A large body of facts and principles which have been demonstrated by experiment (Reynolds, 1968, P. 1).

As previously stated, in operant conditioning, the emphasis is on the probability that behavior will occur. The probability of a behavior occurring or reoccurring is dependent on the reinforcement and the strength of the reinforcement. This reinforcement can be either positive or negative in nature. Reynolds (1968) gives an excellent

comparaison of positive and negative reinforcement. He states that:

> If the appearance of a stimulus as a consequence of a response results in an increased probability that the response will reoccur in the future, the stimulus is called a positive reinforcing stimulus, or positive reinforcer. If the disappearance of a stimulus as a consequence of a response results in an increased probability that the response will reoccur in the future, the stimulus is called an aversive stimulus, or negative reinforcer (Reynolds, 1968, p. 9).

In operant conditioning, then, positive reinforcement is the technique of rewarding the response made by an individual, and negative reinforcement is the removal of an unpleasant stimulus when a response is made. Negative reinforcement should not be confused with punishment. Ferster and Perrott (1968) state that, "the possibility of punishment may arise when we condition a performance already in the individual's repertoire, perhaps because of positive reinforcement (p. 104)." Therefore, a teacher should be aware of the reasons for not using punishment to alter classroom behavior. Clarizio and Yelon (1969) list the following reasons for not using punishment:

1. Punishment does not eliminate the response; it merely slows down the rate at which the troublesome behaviors are emitted.
2. This technique serves notice to stop certain negative behaviors; it does not indicate what behaviors are appropriate in the situation.
3. Aggressive behaviors on the teacher's part may provide an undesirable model for the pupil.
4. The emotional side effects of punishment, such as fear, tenseness and withdrawal are maladaptive.

5. Punishment serves as a source of frustration which is apt to elicit additional maladaptive behaviors (Clarizio and Yelon, 1969, p. 269).

Ferster and Perrott (1968) list some alternatives to the use of punishment in classroom management which are:

1. Emphasis on techniques which make the child more successful in the educational process so that the study itself becomes more rewarding.

2. Arrangement of other positive consequences such as early dismissal from class, or access to activities such as music instruction, driving class, and recess or shop work, which would reinforce successful completion of a study task (p. 134).

These suggestions are directed toward the teacher in the classroom but they, with some alteration, can be useful to the supervisor in dealing with teacher behavior.

Two Techniques of Operant Conditioning

One technique of operant conditioning that may be used is shaping or successive approximation. This method is used to strengthen a behavior that does not exist or is not apparent. Reynolds (1969) states that:

> Since we must wait for the occurrence of a response before reinforcing it, it may at first seem impossible to create new operant behavior. However, new operant behavior can be created by a process called shaping, which uses a combination of reinforcement and nonreinforcement to change existing simple responses into new and more complex responses (p. 26).

According to Schaefer and Martin (1969), there are some points that must be considered when using shaping techniques. These points are:

1. Both the initial behavior and the terminal behavior must be clearly defined.
2. There must be a chain of behavioral links between the initial and the terminal behavior.
3. The experimenter must be willing to quickly change his strategy if at one point he designed too large a step and the organism does not emit the desired behavior.
4. The reinforcer to be used must be available in small quanities; so that at a critical time the organism does not satiate.
5. There must be assurance that the response to be shaped can physically be emitted by the organism (p. 38).

Reynolds (1968) gives a short example or description of the shaping procedure in his statement:

> . . . we might begin reinforcing any movement which the organism nakes. Then, we may reinforce only walking, then only walking in one direction, and so forth. By continually narrowing our definition of the response required for reinforcement, we increasingly define and shape the organism's behavior (p. 29).

Another technique or method of operant conditioning that may be used is contingency contracting. Homme(1969) states that, "a teacher who uses contingency contracting makes an agreement or contract with his students under which he promises rewards in return for the desired learning behavior by the students (p. 1)." A similar contract could just as easily be made between a supervisor and a teacher or teachers. However, some principles of human behavior must first be accepted. Homme (1969) lists these principles as:

1. A desired kind of behavior is more likely to reccur if it is followed by some kind of reward each time it occurs.
2. Children can learn more willingly and satisfactorily if the framework within which learning takes place has been mutually agreed upon between teacher and student (p. 1).

Homme (1969) also lists ten basic rules of contingency contracting which are as follows:

1. The contract payoff (reward) should be immediate.
2. Initial contracts should call for and reward small approximations.
3. Reward frequently with small amounts.
4. The contract should call for and reward accomplishment rather than obedience.
5. Reward the performance after it occurs.
6. The contract must be fair.
7. The terms of the contract must be clear.

8. The contract must be honest.

9. The contract must be positive.

10. Contracting as a method must be used systematically (Homme, 1969, p. 18-21).

A teacher, as with most other methods of managing the learning situation, must first prepare materials before engaging in contingency contracting. Following are four steps that must be accomplished prior to the use of contracting:

1. Identify and describe the subject areas.

2. Break down the subject area objectives into daily task ubits.

3. Collect materials for subject areas.

4. Divide materials into task units (Homme, 1969, p. 71).

Following are some symptoms that when observed indicate a malfunction in the contract:

1. Unfinished assignments.

2. Complaining.

3. Excessive dawdling.

4. Talking and wasting time.

5. Looking at the clock excessively.

6. Inattention to instructions or details.

7. Failure to pass more than two progress checks in one subject area (Homme, 1969, p. 111).

When one or more of these symptoms is observed, the contract should be revised or altered.

The techniques discussed are directed primarily to the teacher's management of the learning situation. However,

these techniques have significant implications for the supervisor concerned with improving the instructional process. The supervisor may, with some alteration and innovation, make use of shaping and contingency contracting in an attempt to change or improve teaching behavior. In addition, the supervisor could plan to provide direction and leadership in experimenting with and implementing the use of these techniques in the classroom learning situation.

The techniques discussed are only described in summary form. The supervisor or teacher who desires to use one of these techniques should first make a study of the references listed at the end of this paper.

Although powerful techniques in the management of the learning situation and classroom behavior and in changing an individual's behavior, these techniques are not a "cure all;" however, they do have certain advantages. Clarizio and Yelon (1969) list the following advantages:

1. The fruitfulness of these techniques in modifying human behavior has been demonstrated in laboratory settings as well as in natural settings.

2. They are consistent with the teacher's role whereby she must reflect cultural expectations and set standards for her pupils' academic and social behavior.

3. Behavioral approaches offer specific and practical techniques for use in day-to-day classroom problems. While teachers already use some or all of these techniques, they frequently do so intuitively or inconsistently thereby reducing their efficacy.

4. These techniques enable the teacher to strive toward more realistic and obtainable goals relative to their pupils' mental health.

5. One of the most important attributes of these techniques is the fact that they can be taught to teachers (Clarizio & Yelon, 1969, p. 270-271).

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