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ABSTRACT

Described are 10 stages involved in guiding teachers through the development and implementation of behavior modification projects. The first stage addresses the development of a positive attitude. Additional steps involve introduction of such specific skills as observing and recording behavior, selecting the target behavior, setting goals and objectives, and planning the intervention strategy. (CL)

55th Annual International C.E.C. Convention

HOW CAN THE TEACHER MANAGE THE SYSTEM, RATHER THAN THE SYSTEM MANAGE THE TEACHER?

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Abstract

Description of the ten stages teachers are taken through in developing and implementing behavioral projects, in an attempt to make manageable the technical problems which arise.

The first stage begins with the recognition that the teacher's performance will be jointly determined by knowing how to and wanting to, and addresses the development of a positive attitude.

Specific skills are introduced one by one, and teachers implement them one by one, dealing with and overcoming the technical aspects one by one. First, observing behaviors systematically in the university classroom, then in the naturalistic environment, selecting one behavior to work with and operationalizing it. Sixthly, baseline, recording of levels of the behavior over time; setting objectives for what the child will do after intervention; and, the most difficult: studying, investigating and planning the intervention strategy. And finally, implementing and then evaluating the intervention plan.

The completed project is shaped, step by step, to minimize the technical aspects of implementation and to maximize the effect of the intervention.

Considering all the demands that are placed upon the classroom teacher, it's amazing that so many beginning behavior modification projects succeed.

He/she is equipped with new knowledges, skills, and behavioral patterns for initiating and responding to student behavior. Yet, these new behaviors are superimposed on an old situation - it's the same teacher, the same children, in the same setting, interacting in similar tasks with similar schedules and BOTH with preexisting expectancies and response patterns. How comfortable it would be to lapse into the familiar patterns, rather than break in the new ones; the teacher at least knows what to expect from the old. No wonder there are frequent problems.

One way to look at the technical problems aspect, then, is how can the teacher manage the system, rather than the system managing the teacher?

More simply put: how can we help the teacher so that he/she is not overwhelmed by the requirements of the methodology? How can we help prepare a teacher so that the technical problems of implementing the new system are paced and spaced. By that I mean rather than inundating the teacher with implementing, observing, charting, pinpointing, intervening, and so on all at once, we introduce one objective, one skill at a time until it is sufficiently mastered.

On one hand the teacher systematically observes and records Jill's out-of-seat or Tom's hand-raising behaviors, while operationalizing, defining and delineating what he means by Tom's

hand raising or Jill's out-of-seatness, while trying to decide if prior observations and recording of Jill's out-of-seat behaviors coincide with what he means by it now, while watching where and when this happens, and trying to identify those events which immediately precede and follow it and if there is a pattern to it, and while trying to decide how best to deal with it, and dealing with it.

This might not be overwhelming if our particular teacher's focus would simply be this; but it isn't. This is in addition to the on-going and regular demands on his attention and skills.

The teacher who is so preoccupied with deciding whether the behavior was appropriate or not, whether or not it's time to reinforce, remembering to be near for reinforcement may neglect other children in the class. This may lead to increased problems with other pupils, even if the target child improves. This situation is not comfortable for the teacher, and is not likely to be reinforcing for the teacher.

If on the other hand, the teacher practices each behavior, for example, observing or describing until he/she feels comfortable and at ease and in control, then the task is less likely to be aversive and more likely to be reinforcing. If the teacher continues encountering problems, we try to pinpoint the problem area: the definition, the observation technique, the choice of the setting, the length or scheduling of the observation period. And the most likely alternative is modified.

The teacher counts Jill's out-of-seatness or Tom's calling out until he finds he can do it without being distracted from

the other activities. Then he has mastered observation and can move on to the next skill. The situation is simplified in a sense that the teacher copes with one problem and practices each skill in a cumulative sequence. The methodology I use for introducing the behavioral approach to teachers attempts to pace the technical problems in this way. One component is dealt with first in the university class, and then implemented in their classroom. The second component is introduced in the university class, and when ready the teacher implements it in his classroom. The methodology is approached as the mastery of discrete skills, one by one.

This approach does not overcome the technical problems - it merely makes them a bit more manageable because the system is implemented in stages, and the teachers participate in the decision of when to implement. It is a shaping procedure.

What I'd like to do now is describe in more detail the stages as they are developed, and how the teacher goes about applying them in her classroom.

By the way, this is a graduate course entitled Curriculum Practices in Special Education. About half the course is devoted to behavioral methodology, which many of the teachers do not expect.

The stages begin from a premise which has been well stated by Paul Siegel. I'd like to quote:

"Most behavior theorists recognize that performance is determined jointly by cognition (know how, habit or what has been learned) and motivation. Failure at the performance level, then,

can result from a weakness of cognition, motivation or a combination thereof." (1968, p. 19)*

Siegel's statement was directed at research which posited some cognitive difference between retarded and normal children before eliminating motivation as causal. The statement applies equally well to anyone's performance, and I'd like you to think of it in terms of teacher performance for a few minutes.

While the relationship between cognition and motivation in determining performance is more likely a continuum with degrees of know how and degrees of wanting to, let's dichotomize the two for a moment.

Dichotomization would give us four alternatives:

1) not knowing how and not wanting to

2) not knowing how but wanting to

3) knowing how but not wanting to

4) knowing how and wanting to

Clearly the last option would be our choice if we had our druthers. Most frequently though, one of the first two options exists. How do we work with that?

It has never been demonstrated detrimental for an educator to have an optimistic attitude about each and every child's ability to learn. Whether this attitude helps by making the teacher more sensitive to the child's needs or whether it is simply motivational (a la finding the way to make learning happen for this child) is not now our concern.

Our concern is with developing this attitude, this expectancy, the willingness to look until some satisfactory

* Siegel, P. Incentive motivation in the mental retardate. International Review of Research in Mental Retardation, Vol 3. (Ed., N. Ellis.) New York: Academic Press.

solution is arrived at. Similarly, our concern with teachers is not only the belief a child can learn, but also that applied behavior analysis can be a tremendously useful and powerful facilitator; that via this systematic methodology, they, the teachers, can increase a child's learning.

If the teacher wants to learn to use these techniques, then the motivation is adequate to start, and we can turn toward the cognitive components and the interaction between the two in Siegel's equation.

More often than not, the teachers are not positive about the method. Although they are not necessarily negative, they are unsure, and they tend to get caught up in the value issues associated with the application of behavior modification, such as: "Behavior modification is no good because the children learn to depend on M&M's"; "they think they'll get a reward for everything they should be doing"; "it makes robots out of them"; "it stifles creativity" and so on and on.

These understandable hesitations are not synonomous with a high motivational state. Arousal of interest and reduction of resistance is approached by three logical arguments.

Learning theory and behavior modification principles are there. Contemporary learning theorists did not invent the principles which influence behavior; they discovered them, as Newton discovered the principle of gravity. And analogously, because they are there and operating, you need to know about them, and understand them. Using the principles systematically or not using them is a personal decision to be made after

understanding them. We all function under reinforcement systems whether it be the regular paycheck and/or the satisfaction that comes from success. What about the child who does not get a pay off he wants from school work, nor success, nor satisfaction from his work?

Like gravity, the principles of behavior will not disappear simply by ignoring or rejecting them.

Secondly, issues of ethics and morality are of concern to teachers, and rightly so. But it is necessary to separate value issues, belief systems and ultimate goals from the techniques and methods of achieving these ends. Is the automobile good or bad? By using an anaolgy such as the auto, we can somewhat objectively sort out goodness and badness to an extent. It is a mobility aid of great value when operated properly, making many things accessible that would not otherwise be so, a source of pleasure in many ways. But it is also capable of danger, a weapon if operated improperly. It can pollute the air; it can limit physical exercise; it can usurp time and money that might be better used someplace else. The auto is a tool, literally and figuratively, a means, a vehicle. While the auto may have elicited many emotional reactions at the beginning of the century, today it can be addressed with more objectivity, provided there's no gas crisis. From the auto, we move through the use of aspirin, and then, heroin, a discussion of which seems tinged more by affect.

The argument procedes from the simple existence of the principles of behavior, through the principles themselves being

neither ethical nor unethical and culminates with a challenge to define the role of a special educator and his responsibility, or if you prefer, accountability, without including the obligation, not merely the right, to change student behavior. That obligation entails using whatever methodology may be most effective.

No matter how hard we try, no matter how much we ignore it, we cannot completely disassociate cognition from affect. So dealing with the technical problems of implementing the system includes dealing with arousing interest, or at the least, reducing resistance to trying out the methodology.

Shifting to the cognitive arena, skills are developed one by one with the intent of assuring success beginning with the teacher's first encounter.

Observational skills are tremendously important. While they can be rather boring to read about, they can be rather interesting to practice. An oft-asked question is why? Why do I need to observe so systematically, so rigidly, so dedicatedly, so regularly? To decrease those questions, we begin by talking about consequences of behavior: the principles of reinforcement and punishment.

After defining reinforcement as a consequence of a behavior which increases the likelihood that behavior will recur, and punishment as a consequence of a behavior which decreases the likelihood that behavior will recur, the following situation is presented: One class rule for group discussion is that the student will raise his hand and wait to be called on. The class is having a group discussion. Tom calls out without raising his hand. He calls out an answer to a question, and he interrupts other' narratives. I, the teacher,

yell at him whenever he does, and remind him to raise his hand the next time.

Is my behavior reinforcing or punishing? Sometimes a serious discussion of the merits of one or the other occurs, and sometimes someone asks what happens to the child's behavior. And so more information is given.

Right after I yell and yell, he calls out less and raises his hand more. But that's only for a short while. Soon he begins calling out again, and it seems like it happens a lot.

OR His calling out is becoming less and less often.

Thus both alternatives are developed: where Tom's behavior increases over time, and where it decreases over time.

At this point, hopefully, three things have been done:

a. a rationale and need for systematic and objective observation has been created - to determine the course of behavior over time;

b. the learning principles of reinforcement and punishment have been introduced, emphasizing the functional relationships between behaviors; and

c. one action of one person is capable of effecting an increase in one child's behavior, and/or a decrease in another child's behavior.

How do you know exactly what effect a behavior will have on a particular child? You know only if you systematically observe.

As can be anticipated, the initial reaction of the group is not unlike the adolescent reading on a primary level: sneering

and shunning a book as too babyish. How do you arouse interest and develop observational skills? We observe a film, and not a teacher training tape or film.

For example, there's a short film sequence of under ten minutes meant to illustrate good and poor classroom management. The class is divided up into two or three sections and each is assigned to observe a particular behavior; for example, a) whether one particular child is on or off task during observation intervals, and b) those positive things the teacher does toward the children. Simple numbers. Afterwards, we determine the lower, then the upper limits on the numbers and fill in the chart on the board. The numbers are, inevitably, devastating. Delving into why such variance occurs among observers, we often come up with the problem of interpretation and of an inadequate definition (in this case, positive things: are they verbal and/or nonverbal; must it be clearly complimentary; what if a nice thing is said but is contradicted nonverbally?). The emphasis is on observing and objectively counting, measuring, but we are also dealing with operationalizing and pinpointing behaviors.

At this point, the teachers are asked to implement this skill. They are to observe children in their classrooms, and select one child and observe him in particular. Observe him in a context, in many contexts, and find five behaviors he exhibits that need changing, and find five behaviors he exhibits that do not need changing. Looking at both positive and negative behaviors reminds ourselves that the child who may be constantly driving us up a wall does do something right.

And so the teachers look at behaviors, not underlying processes. Some just look and begin to describe; others count or measure in some way. The response the next week is often telling. For example, a teacher may list five negatives with lots of variations: (he fights, he's disrespectful, his appearance is sloppy, he's noisy, he's active, or he doesn't wait his turn); and may list five positives with little variation: (he comes on time, hangs his coat up where it should be; he puts his books away on time; lines up for recess appropriately).

This teacher's attitude is presently not positive toward this child. Is success likely? Possibly, if she selects the simplest possible behavior initially and expects no miracles. If not, perhaps she can select another child.

We discuss many of the behaviors the teachers have observed and try to operationalize what is intended:

a) What does out of seat mean? What if the child stays with his seat, but slides or moves it around the floor with him?

b) Is our real concern with Bill's excessive squirming and other motor movements? Or is it his low rate of correct answers? Will decreasing squirming necessarily lead to an increase in attention and/or to more correct answers?

Is there more than one way of considering potential target behaviors? Is it that we want to decrease calling out in a group discussion? Or is it to increase hand raising and waiting to be called on? Is there a difference between the two?

And so we get into comparing increasing some positive behavior versus decreasing something negative. In the latter,

the teacher has not planned what he should substitute in its place, just that the target behavior be reduced or eliminated.

We discuss which observational technique is more appropriate for which behavior. That Bill pouts twice a day is not as relevant as that it endures for 20 minutes at a time. What does the statement that Jane put three toys away during free time tell us? How many did she take out? Here a rate, a proportion would provide the most relevant information. For the behaviors are not only child specific, they occur in a context; they are context specific. Sue's messy desk: with paper scraps, pens, crayons and paste on it. Sue's messy desk is inappropriate during reading time, but may not be inappropriate during art or free time. Behaviors are appropriate or not in a context, and should be observed in a consistent context (or contexts).

The teachers are again sent back to their classrooms and asked to refine and define the behaviors initially identified. In addition, if they feel ready, they are to look at what immediately follows the behavior in time - the consequence maintaining the behavior. They are asked to select one of these behaviors, preferably a simple but relevant one, as their target behavior. Consulting with or having the child himself participate in the decision is often beneficial.

After selecting a target behavior, the teacher is to answer the question "why" - the basis for the decision on this particular behavior. The teacher is to identify those critical behavioral and environmental events by observing what immediately precedes and follows the target behavior; the context in which it

occurs, who else is involved and any other information that might help pinpointing and planning the project.

Some proceed with baseline observations at this time, charting their measurements and including one reliability check.

Here we are, half way into our introduction to applied behavior analysis, and where are we? Still observing and identifying. No intervention has been implemented; no intervention has even been planned yet. We are still in our diagnostic, or assessment phase.

Once we have an idea of where we are, we can plan where to go; we can set some objectives. This, unfortunately, causes some problems. Teachers know rather well where they want to lead a child, but understandably they don't know how much they can do in five or six treatment sessions. And so the teachers' terminal objectives are rarely met because they have planned in longer terms than this project asks or allows.

Once we know where we are and where we are going, then we can consider the different alternatives for getting there. This part of the planning phase includes a task analysis, or estimating, isolating the steps or subtasks leading to the terminal objective specifically for the child to be worked with. This includes identifying potential reinforcers as well as working out other details of intervention (which we will return to shortly.)

Except for the initial brief encounter with the principles of reinforcement and punishment, emphasis has been on practicality and observation, and tentative problem solving. It is at this point now that emphasis is reshifted to the principles operating

and the functional analysis of behavior so that the teacher will be equipped to analyze, understand and control behavior.

Principles and processes, such as reinforcement, punishment, extinction, contingency, immediacy, categories of reinforcers, and their scheduling, among others, are defined and illustrated. A variety of specific techniques based on these principles and processes are introduced and discussed.

This is intellectually the most demanding phase. It is culminated with a presentation of a number of different plans which could be implemented for attaining the same terminal objective: Tom will raise his hand and wait to be called on in a class discussion 90% of the time.

A few of the possible implementation procedures are:

1) Teacher will scold Tom when he calls out, because he is disturbing the class. (If this procedure works, illustrates the principle of positive punishment, because something is added after the behavior occurs which is intended to decrease it.)

An easier example to analyze:

2) Teacher ignores Tom's calling out. (Extinction, if it works.)

Both of these alternatives may eliminate the behavior of calling out, but Tom does not necessarily raise his hand; thus, it is not consistent with the behavioral objective as stated. It is also likely that Tom may no longer call out, or call out less, but may also not participate.

Some other possible alternatives:

3) a. Teacher will state the class rule: In a group discussion everyone will raise his hand and wait to be called on.

b. Teacher praises everyone by name who is raising his hand, and will recognize only a pupil who has raised his hand. (Teacher states rule = cue; praise = positive reinforcement of appropriate behavior; recognizing only a pupil with a raised hand = consistency, contingency.)

4) Teacher models appropriate behavior, or reminds Tom	physical-visual cue/ model verbal
Teacher waits until Tom raises his hand (possibly even if he's calling out while raising)	shaping
and tells Tom how well he's doing because he's raising his hand	positive reinforcement and feedback
5) Teacher asks another child to demonstrate how it's done	using a peer model to cue
Teacher praises model	positive reinforcement of peer
Teacher praises Tom for watching model	positive reinforcement
6) Teacher ignores Tom and calls on another child, verbalizing what Jill was doing correctly.	combined extinction and positive reinforcement of peer model
7) Teacher sits down ahead of time and consults with Tom - contract for a contingency:	contingency contracting
e.g., if Tom remembers to raise his hand and wait 4/5 times, then he can:	Premack
(lead the line, pass out papers, go to lunch early, etc.)	

8) Whenever Tom raises his hand, give him a token, but say it's someone else's turn now	positive reinforcement of appropriate behavior, shaping waiting behavior
9) Teach Tom to observe himself, noting when he does and does not follow the rule	stimulus discrimination of own behavior, self-observation
Teacher reinforces for accuracy	positive reinforcement for accuracy

How does the teacher identify potential reinforcers? Consequences which may be reinforcing to one person may not be reinforcing to another. Sometimes we might logically propose what "should be" reinforcing for a child, and are surprised to find the child unresponsive.

Reinforcers can be identified by a number of means. We can identify reinforcers verbally: simply ask the child. We can identify reinforcers operantly: let him go and choose what he wants to do (as in free time). We can create a forced choice situation: would you prefer ten minutes to listen to the radio or look out the window? Or we can be more open ended: now that you've finished your work, and finished it well, what would you like?

By returning to the child's behaviors assessed initially as needing or not needing changing, the teacher can often identify contexts or activities where problems occur more or less frequently. By looking at the consequences identified as maintaining those behaviors, the teacher should get at least a good lead. Observing

a child in something he likes to do suggests potential reinforcers. Observing in the playground, during free time, sometimes music or art, gives clues. Observe the child himself: his appearance and the content and manner of his conversation or interaction with his peers. An answer to the question: what is he interested in or fond of? will provide reinforcers.

Identifying potential reinforcers for a child is not crucial, and may even be unnecessary if the teacher intends to use a token system. The teacher dispenses tokens contingent upon a child's appropriate behavior. The child can exchange the tokens at some later time for a variety of goods and/or privileges. Using a token system does not obviate the need for identifying reinforcers, but it does become unnecessary to identify effective reinforcers for each individual child so long as there are a variety of choices available in the exchange.

After selecting a reinforcer and the intervention procedure(s) the teacher must plan the details of their interface:

Is an existing behavior to be strengthened?

Or is a new behavior being developed (shaped)?

If the latter, then the teacher must decide on precisely what student responses will require and receive reinforcement, and for how long.

How will reinforcement be delivered when the behavior occurs at an acceptable level/rate?

When these questions are answered, the teacher is then ready to modify the child's behavior. The teacher is ready to implement his plan, his intervention, his strategy.

And finally, there is the evaluation of the project's effectiveness. In an overwhelming majority of the projects the child's behavior changes, and changes positively; although this is not always clearly attributable to the intervention. Nevertheless, most teachers evaluate their projects as successful, and seem to leave with some skills, and a more positive attitude toward the approach, and my recommendation that they take a semester course in behavior modification.

By way of summary, we started by recognizing that the teacher's performance with this methodology would be jointly determined by motivation and cognition, and began with developing a positive attitude. Then, one by one, we dealt with developing observational skills and applying them, selecting and operationalizing a behavior to be worked on, recording its levels over time, setting objectives, and investigating and planning the best possible intervention for this child in this context. All of this planning was then implemented and evaluated.

Much as we would like it, there is no single or simple set of materials or procedures that works in every case. There is no panacea. Behavior modification is not for each and every child; nor for each and every problem. But it is a powerful methodology, which focuses on the here and the now, which focuses on analyzing both teacher and student behavior. It may be somewhat demanding of your time and wits, but it is terribly comforting, terribly reinforcing, to know it's there for when common sense fails.