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STUDENT BEHAVIORAL CHANGE THROUGH TEACHER BEHAVIORAL CHANGE

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INTRODUCTION

Traditional learning theory argues that active participation by students in the learning process increases the likelihood that learning will in fact occur [16, pp. 53-51; 1, pp. 12]. One type of participation is the spoken interact ion that takes place between the student and the professor in the classroom. This includes questions asked by the professor in the classroom. This includes questions asked by the student and student responses to questions posed by the professor. Eliciting such participation is always an item of concern for the faculty member, and this concern is heightened in certain types of classroom environments. For example, high enrollment classes are inherently inhibitive to faculty-student classroom interactions, regardless of the subject matter under consideration. The time constraint and the physical setting work against it, and the professor is less likely to be aware of the motivational sets of individual students [12].

The purpose of this experiment was to develop a process that would increase the amount of student questions and responses in a high enrollment class held in a large auditorium-type room and embodying essentially a "lecture" format, with some "discussion" element attempted. Specifically, the class was a beginning level business law course, required of all students majoring within the School of Business. Typically, 80-85 students are enrolled in each section of this course. In an attempt to overcome some of the existing barriers to student participation in this setting, a behavior modification experiment was undertaken.[1]

METHODOLOGY

The problem that generated the experiment was the professor's desire to secure an increased amount of student participation in the class. A target of a 50 percent increase in participation was established, It was felt that (a) this amount of increase vas possible, and (b) this amount of increase was unlikely to be spurious and this could be attributed to the intervention process. To establish a baseline data base, external observers were assigned the task of recording the existing level of participation over a two-week period prior to the initiation of the intervention activity. Six 50-minute classes (three per week) were observed, with an average of 39 oral responses per period noted.[2]

In addition to collecting base line data on a number of responses, the observers also noted the professor's teaching techniques and general demeanor and the overall classroom atmosphere as a basis for evaluating antecedents and consequences of student responses.

There were two sets of behaviors to be modified. Ultimately, it was the student behavior that was of interest. The intervention, however, included a modification of the behavior of the professor. From the observation period, it was determined that the students received little overt encouragement from the professor. The key to increasing student participation, then, was judged to be a change in the cues and rewards given by the professor. Basically, it was recommended that the professor attempt to create a more "personal" atmosphere in the class, and that questions be posed in a more precise manner. These changes, it was felt, would encourage increased participation. Further, a list of specific Items, or "encouragers" was developed:

(1) Maximize the use of the seating chart as a tool for personal identification of students giving voluntary responses.
(2) Paraphrase discussion questions from the text and ask specific questions, such as "Is the store liable for . . .?" instead of merely asking for "the answer to question 3?"
(3) Repeat student's correct answers for the entire class.
(4) Encourage appropriate responses with encouragers such as "good point", "good answer", "right", for correct answers and "good question" for relevant questions.
(5) Reinforce partially correct responses with comments such as "keep going", "you're on the right track", "yes, and what else?"
(6) Use encouragers such as "that's a good idea, but that's not right", instead of "no" or "not really" for incorrect or irrelevant responses to draw out students who need help in formulating their ideas without discouraging their participation.

The faculty member generally concurred that this intervention scheme seemed promising. The problem standing in the way of performance centered around implementation. Some of the "encouragers" were outside the professor's natural behavioral pattern. Work was required involving the guided rehearsals and practice necessary to perfect the desired behavioral change. Such rehearsals and practices are most effectively carried out in the actual work setting [11; 12, pp. 62]. One of the professor's sections of the business law class was selected as a "rehearsal" forum. The requisite behavioral changes were prescribed, and the professor attempted to employ those new behaviors - unobserved - in the non-threatening atmosphere of the "rehearsal" section of the course. Simulated classes were attempted, but the simulations fell sufficiently short of the true experience that they were discarded as unlikely to be effective.

After having an opportunity to rehearse the changes, the professor then attempted to utilize them in the experimental section of the course. There, the observers were once again present. They provided reinforcement for successful behavioral change. Initially, it was assumed that positive comments by the observers would provide sufficient reinforcement. It was also

[1] Throughout the remainder of the paper, the term "participation" will be intended to mean student questions asked and student oral responses to questions from the professor.

[2] These data actually were based on five observations. One class period had what was judged to be an aberrant set of conditions; viz, the typical flurry of student questions that occur in the period immediately preceding an examination.

thought that negative reinforcement in the form of avoiding embarrassment for failure to perform as instructed would be occurring. These two assumptions were quickly disproved.

Even though the professor's demeanor appeared to be more positive, she generally avoided the use of the word "good" as an encourager. The observers were convinced that an increase in the use of such phrases as "good point" and "good question" would have a positive effect on the student response rate. It was evident that a specific reinforcement schedule should be implemented. A payoff was negotiated between the professor and the observers whereby 10 encouraging comments by the professor could be exchanged for one hour of an observer's time to be used to help grade students' papers. As the number of verbal positive reinforcers used by the teacher for her "reward" increased, the student responses also increased. The payoff scheme provided the additional incentive for the professor's change, and the professor's new behavior began to become more naturally encouraging.

RESULTS

The initial observation period included five class sessions from March 12, 1982 through March 31, 1982. Ignoring the aberrant results from the March 11 class, the mean response rate was 39 (see Table 1).

TABLE 1

DATE*	RESPONSES
3/12	41
3/15	38
3/17	(69)
3/19	(0)
3/29	21
3/31	36

*The 12-day interval between *3/17* and *3/29* occurred because of spring vacation period.

Data from the intervention period shows that the target of a 50 percent increase was reached and exceeded within the first week (see Table 2).

TABLE 2

DATE	RESPONSES	TEACHER "GOODS"
4/ 2	58	----
4/5	52	----
4/ 7	14	----
4/ 9	68	(10)*
4/12	57	(7)*
4/14	79	(12)*
4/16	94	28**
4/19	85	24**
4/21	71	14**

*Unrewarded; **Rewarded.

Indeed, immediately upon the introduction of the intervention program (April 12), the responses per class began to increase. Then, when the program to reinforce the professor's behavior began (April 16), the rate of increase in responses displayed a generally sharp upward move. The line graph in Figure 1 illustrates the general improvement of the response rate throughout the intervention period. During the period from April 2 through 21 (the intervention period), the average response rate per class session was 71. This is an improvement of 81%.

DISCUSSION

Several explanatory notes regarding the experiment warrant mention here. Occasionally, several students responded in chorus. No means were available to determine the number of simultaneous participants so only one tally was recorded. Similarly, when several students volunteered to answer a particular question by a show of hands, only one tally was recorded for the student who actually answered the question. This, of course, needs to be remembered in interpreting the results, as it tends to understate the positive outcome of the experiment.

Another point to consider might be the level at which the teaching is impaired by too much discussion. If this situation had presented itself, the professor could easily have said, "Let's go on now"- In fact, the increased pace of the discussion facilitated moving on to new material faster and the professor soon found this class to be ahead of the other class. Whether this is a direct result of the increased student participation is not clear. Two possible explanations cone to mind. Perhaps the students came to class more prepared because they anticipated an active rather than a passive involvement in the class. it is also possible that the pace of the class was speeded up due to increased interaction, less repetition of material by the teacher, and less time spent waiting for students to volunteer answers.

The intervention experiment clearly increased student participation in the class. After the baseline data were gathered and the intervention period begun, however, it was realized that an increased number of student responses may not have been the sole issue. It might have been more beneficial to chart the response time between professor-posed questions and student responses and the number of different students participating. The baseline data do not differentiate between voluntary and teacher-elicited responses, nor do they specify which respondents were called upon when no voluntary responses were available.

Since the baseline data were not gathered until the middle of the semester, they do not reflect the activity level of the class at the beginning of the semester when the situation was clearly identified as being (subjectively) disconcerting the professor. By the time the data collection was completed, the class had become more involved in response to the professor's generally encouraging manner. The extent of the increase in the student response rate due to other factors which normally occur as the semester progresses was not addressed in this study. Nonetheless, the high target of 50 percent increase in responses should be sufficient to accommodate the time-related effects. It appeared that the class atmosphere was improving continually throughout the semester and that the comfort level between the professor and the class increased. This type of environmental change would seem to rule out the possibility that the increased participation occurred because of student's need to avoid negative sanctions.

The behavior of the professor is an important ingredient in any class. Even without a specific behavior change program, the professor's expectations of success may have had a significant influence on her behavior and as a result, on the behavior of the students [15, pp. 178-179, 216].

SUMMARY

The data collected in this study indicate a positive relationship between teaching style and student responsiveness in class. Posing specific questions, repeating responses, calling on volunteers by name, and encouraging students with positive comments had the desired effect of increasing total participation in the

class.

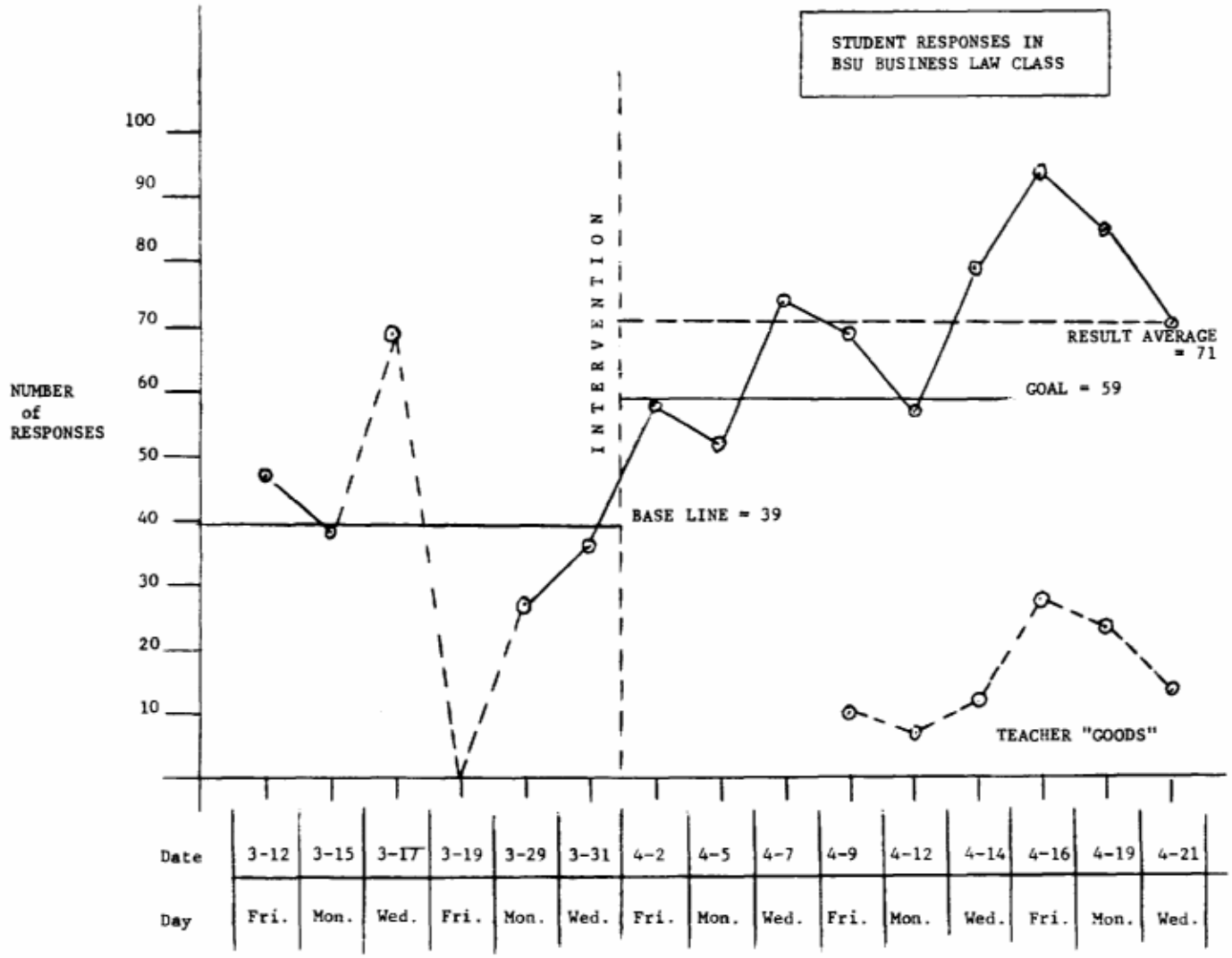
It is likely that the techniques employed by the professor for this class will be continually improved upon in subsequent teaching situations. The long-term effect of behavior change on the students is not assured. On one occasion the regular professor conducted the class as usual, but no positive feedback was given for desirable student responses. This time the responses totaled 64, only slightly lower than the intervention average. This seems to indicate that the intervention strategy had changed the student's behavior, but it is not known whether this change would continue if the reinforcement were to be withheld for an extended period of time.

In planning this experiment, it was feared that the increased class discussion would hamper the covering of the necessary course material. It is interesting to note that this class covered more material during the intervention period than anticipated on the basis of past and present experience with other classes. Instead of slowing the class down, the increased participation appeared to speed things up.
This study did not attempt to correlate the performance on tests to the response rate, although it would be interesting to compare responsive and unresponsive class sections with test scores to determine the degree of improvement, if any, in the learning process. In the case of this class, the experimental group started with lower grades and ended up with grades somewhat higher than the other group. The difference was not statistically significant, however, The lack of a significant difference could, of course, be attributable to the fact that the "other" group had served as the "rehearsal" group and thus had had some of the same experience as the target group. The difference in learning may be the critical difference, and to attempt to ascertain the existence of such a difference the professor Is currently in the process of designing a follow-up study.

REFERENCES

[1] Etzel, Barbara C., et al., "Stimulus Control Procedures in the Education of Young Children," In Bijou, Sidney W. and Roberto Ruiz (Eds.), Behavior Modification Contributions to Education. Hills- dale, New Jersey: Erlbaum Associates, 1981, pp. 3-37

F I G U R E I



[2] Favell, Judith Elbert, The Power of Positive Reinforcement. (Springfield, Illinois: Charles C. Thomas Publisher, 1977).

[3] Fedor, Donald B. and Gerald R. Ferris, "Integrating 0.8. Mod with Cognitive Approaches to Motivation." Academy of Management Review, 6, 1 (January, 1981), pp. 115-126.

[4] Hobson, Charles J., Raymond M. Mendel, and Frederick W. Gibson, "Clarifying Performance Appraisal Criteria." Organizational Behavior and Human Performance, 20, 2(October 1981), pp. 164-187.

[5] Huseman, Richard C., Cal M. Logue, and Dwight L. Freshley (Eds.), Readings in Interpersonal and Organizational Communication. (Boston: Holbrook Press, 1973).

[6] Kazdin, Alan E., Behavior Modification In Applied Settings. (Homewood, Illinois: Dorsey Press, 1980)

[7] Lee, Calvin B. T., (Ed.), Improving College Teaching. (Washington, DC: American Council on Education, 1967).

[8] Luthans, Fred and Robert Kreitner, Organizational Behavior Modification. (Glenview, Illinois: Scott, Foresman and Company, 1975)

[9] Mann, Changing Human Behavior. (New York: Scribner's Sons, 1965)

[10] Mikulas, William L., Behavior Modification--An Overview. (New York: Harper & Row, 1972).

[11] Milbourn, Gene, and Richard Cuba, "O.D. Techniques and the Bottom Line." Personnel, 58, 3(May-June, 1981), pp. 34-42.

[12] Porras, Jerry I. and Brad Anderson, 'Improving Managerial Effectiveness through Modeling-based Training. Organizational Dynamics, 9 (Spring, 1981), pp. 60-77.

[13] Ribes, Emilio, 'Curriculum Design in Higher Education from a Behavioral Perspective: A Case Study," In Bijou, Sidney W. and Roberto Ruiz (Eds.), Behavior Modification Contributions to Education. Hillsdale, New Jersey: Erlbaum Associates, 1981, pp. 253-268.

[14] Schwartz, William, "Education In the Classroom" Journal of Higher Education, 51, 2(March, April 1980), pp. 235-254.

[15] Schwitzgebel, Ralph K. and David A. Kolb, Changing Human Behavior. (New York: McGraw Hill, 1974).

[16] Sidney, Elizabeth, et al., Skills with People: A Guide for Managers. (London: Hutchinson & Co., 1973).