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ABSTRACT

Professor and student classroom verbal behaviors, coded with Ober's RCS, were related to anonymous student ratings on a reliable and validated form. The classroom process, even at the college level, is manipulable by the professor, and should influence student ratings of the professor. Twenty-six classrooms of undergraduate courses in one department were observed on a typical day for one period, and subsequent ratings of the professor were collected, by students, from students. Student perceptions of a questionnaire dimension "motivation-stimulation" were strongly related to classroom interaction measures on the RCS. Other findings are reported, as are implications for practice. (MJM)

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Classroom Verbal Behavior and Student Perceptions of College Teaching*

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Silberman (1971) has pointed out that

One of the strangest and strongest traditions of American higher education is one that holds implicitly, if not explicitly, that those who teach students below the age of eighteen require special preparation for teaching, whereas those who teach students eighteen and older do not. The notion is patently absurd; nothing magical occurs at age eighteen to suggest or justify this kind of dichotomy (p. 509).

One of the recent trends in educational research has been renewed interest in what takes place in classrooms at the college level. There is something "magical" in graduate school which transforms the student into a competent college teacher, often with no preparation or training, and quite often, with no experience. Fortunately, perhaps, criteria for adequacy in college teaching are vague and somewhat distant from the actual behavior of the professor or the actual achievement of the student, making training of future professors a task with an ill-defined criterion. Reasons for concern about the process and product of college teaching are salient now that the glut of enrollments has abated, tax or tuition money is tight, there is an over-supply of Ph.D.s, and governing bodies think in terms of accountability.

College professors have been evaluated by how many students elect to take their courses, by how many outraged letters are filed in the chairman's "black-book" file, and by even more informal, reputational means. Some institutions have peer evaluation, yet few classroom visitations are made by senior professors evaluating their younger colleagues. In some fields, it is possible for a professor to evaluate the product of a course prerequisite to his, and gain some understanding of the adequacy of the professor (or student).

Most encouraging, yet puzzling, is the rise of student activism as evidenced by growing numbers of institutions where students use forms developed for professor evaluation. Howe (1967) reasons that student perceptions of professor effectiveness are important when he points out that

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We have the obvious fact that students do pay for the instruction that they receive; they are not simply a necessary evil to be tolerated as part of the educational endeavor, but are the purpose of it. The opinion of those who eat the pudding certainly ought to be considered if we wish to know how the pudding tastes (p. 260).

One way to assess student perceptions of effective teaching is to use objective-type instruments. The use of student evaluation has been supported by the research and study of many people, such as Miller (1972), Cook and Neville (1971), Deshpande, Webb and Marks (1970), and Schoenfeldt (1972).

The objective of this study was to uncover relationships between what verbal interaction took place in college classrooms and the ratings of the professors by their undergraduate students on a rating form. The form, derived from many such forms, but especially from the Deshpande, et al. (1970) work, measured classroom process along dimensions similar to Ryans' (1960). Ryans' X_o , Y_o , and Z_o factors were roughly paralleled by Affective Merit, Cognitive Merit, and Stimulation, respectively. Schoenfeldt (1972) was primarily responsible for the design of the current Faculty Evaluation Form.

The verbal interaction was categorized using Ober's RCS (1970). This system, an expansion of Flanders' system (1960), is particularly sensitive to different student verbal behaviors, and is somewhat more useful than Flanders' for teacher behavior as well.

Since professors' peers or superiors may be quite competent to evaluate the depth and breadth of a professor's scholarship by examination, counting or weighing of a professor's research productivity, the focus of this study is on the classroom behaviors of professors observed by a trained observer and rated by students, and of students with professors (observed), which can be thought of as affective and procedural.

Purpose of the Study

The measurement of certain behavioral and perceptual variables in the instructional process in college classrooms, and the examination of their possible relationships constituted the purpose of this study. Specifically, these were:

1. To record the verbal interaction process in college classes to determine the time percentage of four predictor variables: a) student verbal behavior related to positive socioemotional climate, b) professor verbal behavior related to academic task functions, c) student verbal behavior related to academic task functions, and d) professor behavior related to positive affect and amplification of student comments.
2. To evaluate student perceptions of effective teaching during the instructional process relative to two major dimensions: a) professor subject matter organization and competence, and b) professor motivation-stimulation.
3. To attempt to better understand the relationship between the four predictor variables of verbal behavior (a-d in Purpose 1) and the two criterion variables of student perceptions of effective instruction (a + b in Purpose 2).

The variables alluded to above are briefly operationally defined here. "Student verbal behavior related to positive socioemotional climate" was the sum of student use of Ober categories 11 and 12. "Professor verbal behavior related to academic task functions" was the use by professors of categories 4 through 8 in Ober's RCS. "Student verbal behavior related to academic task functions" was the sum of students' use of Ober categories 14 through 18. "Professor behavior related to positive affect and amplification of student comments" (positive climate) was based on categories 1, 2 and 3 of Ober's system.

The variables listed in Purpose 2, above, were derived from the Faculty-Course Evaluation Form. Specifically, the non-orthogonal factor scores were derived from items on the form as follows:

"Professor subject-matter organization and competence" -

The instructor was well prepared (16), seemed well informed about material (38), gave logically arranged presentations (31), was (not) confused about basic principles (24), spent time on (un) important material (10), and kept course moving at steady pace (26). (Schoenfeldt, 1972)

"Professor motivation-stimulation" -

Encourages students to think for themselves (7), to see beyond the limits of the course (14), and to ask questions (13); tried to stimulate creative abilities (28), intellectual curiosity (22) and interest (32). (Schoenfeldt, 1972)

The form used a five-point scale; 1. Almost never; 2. Infrequently; 3. Occasionally; 4. Often; 5. Almost always, in asking the students to "estimate how frequently you feel the following occurred."

Methods

Briefly, all professors teaching undergraduate classes in a behavioral science department were asked to participate; all thirty accepted, but only twenty-six classes yielded complete data for analysis; there was some slippage in the universal use of the Faculty-Course Evaluation Form.

In the third and second from last week of one quarter, each of the classrooms in question was observed using the RCS for an "hour." Each professor was asked the degree to which the observed class was typical. Those responses which were not completely certain led the observer to return and observe with the RCS until a typical period was found. In the last week of the quarter the anonymous faculty evaluation form was administered to each class by a student in the temporary absence of the professor. The students were convinced, and knew from experience, that the forms were not seen by the professor, and that the summed results would be seen by the professor only after the quarter was over.

No study was found showing what an adequate length of observation might be, using Ober's RCS. This non-justification is a major weakness of the present study.

Results

Eight hypotheses were generated for this study; each was non-directional, relating a predictor variable to a criterion variable. The predictor variables, defined briefly in the Purpose section above, were:

- X1: Instructor positive affect and amplification
- X2: Instructor cognitive pattern
- X3: Student positive affect
- X4: Student cognitive pattern

The criterion variables were:

- Y1: Subject-matter organizations and competence
- Y2: Motivation-stimulation.

Table 1 shows that none of these eight hypothesized relationships were significant at the alpha level of .05.

TABLE 1
PRODUCT-MOMENT CORRELATION MATRIX FOR
PREDICTOR (X1-4) AND CRITERION (Y1+2) VARIABLES

		CRITERIA	
		<u>Y1</u>	<u>Y2</u>
PREDICTORS	X1	-.01*	.30
	X2	.04	-.29
	X3	-.15	.17
	X4	-.03	.19

*for $\alpha = .05$, $r = .39$.

Findings

Anticipating that one-to-one correlation analyses would, being somewhat primitive and simplistic, quite possibly yield statistically non-significant results, further analyses were called for in the design of the study. These related certain ratios, derived from the Ober RCS matrices to the criterion variables. The main focus was to be the Y2 variable, the Motivation-Stimulation factor scores from the Faculty-Course Evaluation Form.

Table 2 contains the correlations between the ratio variables from the Ober RCS observations and the criterion variables of Subject Matter Organization and Competence (Y1) and of Motivation-Stimulation (Y2).

TABLE 2
PRODUCT-MOMENT CORRELATION MATRIX FOR
PREDICTOR (X5-8) AND CRITERION (Y1+2) VARIABLES

	CRITERIA	
	<u>Y1</u>	<u>Y2</u>
X5	-.19*	.20
X6	.04	-.21
X7	.14	.53
X8	-.06	.43

* for $\alpha = .05$, $r = .39$.

The predictors above were:

- X5: Professor affective-cognitive ratio; the proportion of professor categories 1 and 2 to 1 through 9.
- X6: Professor-student talk ratio; the proportion of professor talk to all talk.
- X7: Professor questions ratio; the proportion of professor category 4 to categories 4 through 8, and
- X8: Professor-student question ratio; the proportion of professor questions to all questions.

The two significant correlations indicate that professors rated high on the Motivation-Stimulation factor (Y2) questioned more than those low on Y2 both in contrast to their other behaviors (X7) and to their students' behaviors (X8).

Not to be undone by an unfortunate choice of hypotheses and some inter-correlations of predictor variables (as well as criterion variables for Y1-Y2, $r = .51$), multiple correlation and multiple regression techniques were employed. The a posteriori nature of these does not completely eliminate their value for future hypotheses in future studies.

Student perceptions of Motivation-Stimulation (Y2) proved to be strongly related to certain classroom interaction measures, whereas student perceptions of Subject Matter Organization (Y1) did not; the linear multiple correlations

of X1 and X2 with Y2 (.397) and of X2 and X4 with Y2 (.474) were significant. Multiple regression equations for these variables were produced, yielding significant contributions by both predictor variables in each, but especially the second, and coefficients of determination, respectively, of .16 and .23.

Conclusions

It can be concluded that the students from the classes in this investigation had perceptions of motivation (Y2) which were more predictable from the Ober RCS verbal classroom patterns (X1-X4) and indices (X5-X7) than were their perceptions of subject-matter organization (Y1).

Students gave higher motivation-stimulation ratings (Y2) to professors who asked more questions than their students and than the low-motivating professors. Although professors who did much questioning used more positive affect than others, the differences in affect were not related to their motivation-stimulation ratings.

Discussion, Implications

A number of problems arise in a study which explores an unclear area; many have to do with the problem of a priori versus a posteriori analyses. This study, exploratory as it was, tested some logical hypotheses which were not significant. The whole problem of developing indices from a 19 x 19 Ober RCS matrix has not been faced squarely, nor has there been enough concern expressed for the adequacy of, and independence of, scores from either the RCS or the Faculty-Course Evaluation Form. In fact, while careful attention was paid to reliability of the latter form and of the observation system, no data were generated or available to demonstrate the adequacy or inadequacy of the length of the period of observation. Finally, studies have not been done relating Ober RCS indices, and/or student ratings on the current form, to achievement.

However, since student verbal cognitive input and student verbal positive affect were strongly correlated, professors in similar populations may wish to consider that inducement of student cognitive input can be encouraged by inducement of student positive affect, or vice versa. Also, deliberate use by professors of convergent or divergent questioning of students should positively affect student perceptions of motivation-stimulation.

The relationship between professor and student verbal behavior in the classroom and student perceptions of college teaching is a complex one. In order to explore this relationship further, it may be useful to consider pertinent questions for further research which are presented below:

-Would further research discover an ideal range for professor questioning which correlates maximally with student perceptions of motivation-stimulation?

-Is there a causal relationship between the verbal behaviors of professors' questioning and professors' use of positive affect?

-In order to develop skills for motivating students: should questioning skills and expression of positive affect be inculcated as desirable behaviors for beginning teachers, or should questioning skills be taught without particular attention to the expression of positive affect?

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