

Do Pupils Affect Teachers' Styles of Instruction?

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Results of the two studies presented here suggest that pupil participation in a teacher's lesson affects subsequent preference for using the teaching styles noted here, that is, a discovery style as compared to an expository style.

THE influence of teachers on student behavior has been the subject of considerable research effort for a number of years. There have been, and there continue to be, many studies which attempt to relate some set of teaching behaviors (for example, indirectness, praise, types of questions) to pupil outcomes. When conducted in field settings, these investigations typically relate rated or coded teacher behavior to pupil variables, such as achievement, attitudes, or classroom behaviors. Despite the difficult measurement and design problems inherent in field research, some positive results have been obtained (Rosenshine and Furst, 1971).

Considerably less research effort has been directed at the other half of the teacher-pupil interaction question: How do pupil behaviors affect teachers? Although there have been four or five studies, discussed here, germane to the question, there is no established line of inquiry into this topic. In this article we will review some of these pupil effect studies and present results from an analysis of observational data collected during two experiments.

Related Studies

Several studies have examined the effects of feedback from pupils on teachers' behavior. When pupils' ratings of their "ideal" teacher were fed back to their actual teacher, subsequent teacher behaviors were perceived by the pupils as moving closer to the "ideal" ratings, compared to a control group which did not receive the information (Gage, Runkel, and Chattejee, 1963). In another study using pupil ratings, perceived teacher behavior was more positive when pupil ratings of the teachers were used as feedback, compared to supervisor ratings or no feedback conditions (Tuckman and Oliver, 1968). The results of these studies indicate that certain pupil feelings or perceptions, if communicated to the teacher, can cause changes in the teacher's behavior.

The relative influence of pupils on teachers was studied by Openlander (1969). Using two sections of sixth graders designated as high and low ability, and four teachers who taught in both sections, observations were made on several occasions at the beginning and at the end of a semester using Flanders' Interaction Analysis. In the

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low ability section, teacher behaviors became more indirect with time, while in the high ability section the teachers' behavioral styles became more direct. A plausible explanation for this result is that the teachers' behavior was being modified by some aspect of the pupils' behaviors in the different classes. No doubt the teachers were influencing the pupils through their instruction, but the pupils also appear to have exerted some systematic influence on the teachers' indirect verbal behavior.

Two studies have experimentally varied pupil behavior and observed its effects on teachers. Jenkins and Deno (1969) compared the self-evaluations of teachers in two conditions: participating, responsive pupils or passive, non-responsive pupils. Teacher self-evaluations were significantly lower for the teachers whose pupils were passive and unresponsive.

Klein (1971), in a study involving guest teachers in 24 college classes, arranged for the students to vary their behavior systematically during the period. The results indicate that negative student behaviors (disagreement, lack of attention) produced increased negative teacher behavior (criticism, directing), although positive student behavior did not elicit more positive teacher behavior than usual.

With these results in mind, data collected in the course of two experiments conducted by the authors were reexamined in an attempt to explain some puzzling findings. In both studies the teacher outcome measure had been preference for an instructional style on the part of preservice teachers in a teaching laboratory. The intent of the studies was to examine variables related to the teacher's preference. The original hypotheses in the two studies dealt with whether experimental manipulation of certain variables (for example, feedback expectancy, practice) would affect teacher preference for using an expository or discovery teaching method. The hypothesis in the present investigation concerns whether certain pupil behaviors, occurring during a lesson in which the teacher is using a teaching style, affect the teacher's subsequent preference for that style. This

hypothesis was tested by examining audiotapes of the lessons from the two studies obtained originally to check whether intended use of a teaching style predicted its actual use. These data were not involved in tests of the original hypotheses and their use here does not overlap or contradict the findings of the two studies, which are summarized as follows:

Study A. In an investigation (Emmer, Good, and Oakland, 1971) of preservice teacher choice of expository and discovery teaching styles, undergraduate educational psychology students ($N=78$) in a micro-teaching laboratory were asked to use one of the two instructional styles in teaching a 10-15 minute lesson to a small group of their peers (fellow students in the undergraduate teacher education program). When the teachers expected to receive feedback about how appropriate their use of the instructional style had been, versus receiving feedback about student learning, motivation, or receiving no feedback, their choices shifted toward an expository style. This shift was accompanied by a feeling on the teachers' parts that they had a better understanding of an expository style than a discovery style. Results were interpreted as indicating that feedback focusing on the extent to which an instructional style was appropriately practiced inhibited exploratory use of different teaching styles, at least during early teaching experiences. Subsequent to teaching, preference for a style was again assessed and some shifts in preference were noted which could not be accounted for by the different expectations regarding feedback.

Study B. This experiment was conducted to determine whether teacher choice of instructional style was affected by practice of the style. Undergraduate educational psychology students ($N=67$) were asked to teach 10-15 minute lessons to a small group of their peers. Teachers were assigned randomly to groups according to their initial teaching style preference (expository or discovery) and were instructed either to teach their lesson using their preferred style, or were given an option to use either of the two

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styles. Ss participating in Study B were not the same Ss as those participating in Study A.

Analysis of the preferences for using expository and discovery styles before and after teaching indicated no shifts in preference attributable to a practice effect. Again, however, as in Study A, preference shifts were noted subsequent to teaching, and these were unrelated to any definable treatment condition.

Procedures

Lessons taught by the teachers in both studies had been tape-recorded and rated on degree of use of an expository or discovery style. This was done to check the validity of the teachers' initial expressions of preference for the two styles. Results indicated that, when given a choice, teachers tended to use the style in the lesson they taught which they indicated previously they preferred. In other words, stated preference for a teaching style was a reliable predictor of its later use during a microteaching session. It should be noted, however, that the lessons of students choosing the discovery method were rated as being, on the average, somewhat more like an expository style than a discovery style, although considerably less expository than the lessons of those choosing the expository style.

In both studies some teachers' preferences changed subsequent to teaching. As shifts were unrelated to the treatments, it was believed in light of the literature reviewed earlier that an analysis of the verbal behaviors of students and teachers would be useful in exploring the general question of whether pupil behavior affected teachers' preferences for a teaching method. Consequently, 142 audiotaped lessons from the two studies were coded using Flanders' Interaction Analysis. The main question to be answered was whether student behavior differed for teachers whose preferences changed as compared to teachers whose preferences did not change.

Jenkins and Deno (1969) found that responsive pupil behavior, as compared to passive, unresponsive pupil behavior, elicits more favorable self-evaluations on the part of the teachers. Consequently, it was felt

that a measure of overall pupil participation might predict subsequent preference for an instructional style. Percentage of total time coded as student talk (response or initiation) was used as an index of pupil participation. Table 1 presents these percentages for Study A and Study B, and also presents the percentage of teacher talk in each lesson spent in indirect teaching behaviors (Flanders, categories 1, 2, 3, and 4). Results are presented separately for four groups: initial and final preference for using a discovery style (D-D); initial preference for using a discovery style but final preference for using an expository style (D-E); preference for using an expository style both before and after teaching (E-E); initial preference for using an expository style but final preference for using a discovery style (E-D).

	Group	Student Participation			Indirectness	
		N	\bar{X}	S.D.	\bar{X}	S.D.
Study A	D-D	21	20.4	13.4	29.3	12.7
	D-E	16	11.6	12.0	17.8	22.3
	E-E	26	2.8	5.3	4.73	7.7
	E-D	12	10.1	11.7	17.3	20.6
Study B	D-D	21	22.4	12.5	32.6	3.1
	D-E	8	11.1	9.9	15.6	10.4
	E-E	29	5.9	6.0	3.9	4.2
	E-D	9	11.0	12.9	6.7	6.2

Note: Student participation statistics are based on the percentage of total talk coded in a pupil category. Teacher indirectness statistics are based on the percentage of teacher talk coded in Flanders' categories 1, 2, 3, and 4.

Table 1. Student Participation and Indirectness in Study A and Study B

Results

To test the hypothesis that changes in preference for using an instructional style are related to pupil participation, several comparisons were made on the data from Study A and Study B. Teachers who initially preferred a discovery style and who maintained that preference after teaching (D-D) were compared to teachers with the same initial preference but whose final preference had shifted toward an expository model after teaching (D-E). In both studies, teachers whose preferences shifted toward an expository model (D-E) obtained significantly ($p < .05$) less pupil participation ($t=2.07$

and $t=2.29$ respectively) than teachers who maintained their discovery preference. When the amount of teacher indirectness was compared for the same groups, it was found that teachers in group D-D also were more indirect in their instructional behavior ($t=2.95$ and $t=3.28$) than those in group D-E.

Next, teachers who initially preferred an expository style but who shifted preferences to the discovery style after teaching (E-D) were compared to teachers who maintained their preference for an expository style (E-E). Teachers whose preferences shifted toward a discovery style had significantly greater pupil participation in Study A ($t=2.93$, $p < .01$); while the difference in Study B did not reach significance ($t=1.67$, $p > .05$), the mean difference was in the same direction as in Study A.

Teacher indirectness followed the same pattern, with indirectness being greater in Study A for teachers who changed preferences to a discovery style (E-D) instead of maintaining an expository preference (E-E). In Study B, the comparison did not reach significance, ($t=1.56$, $p > .05$) although its direction was as in Study A.

It should be noted that teacher indirectness statistics are given to reflect the degree to which the teacher's behavior facilitated pupil participation and are not presented in order to reflect the degree of discovery or expository orientations of the lessons. Although the behaviors and the orientations may be related, it is possible for a teacher to be very indirect in an expository lesson by asking many questions but providing the generalizations and explanations himself.

Discussion

A plausible explanation accounting for the shifts in preference from a discovery to an expository style appears to be the significantly lower pupil participation in the D-E group than in the D-D group. Since pupil participation affects teacher self-evaluation (Jenkins and Deno, 1969), it would appear reasonable that the relative lack of pupil participation caused the teachers to devalue their ability to effectively use a discovery

style, and to choose a style which presumably elicits less student participation. The smaller amount of indirect behaviors among the D-E teachers suggests that they may have been less skilled than their D-D counterparts in ability to engage in facilitative behaviors. However, some of the difference in indirectness may be due to a lack of positive pupil response in the first place.

The preference shifts from an expository to a discovery style cannot be explained in the same manner, since they are associated with increased pupil participation rather than decreased participation. A plausible explanation may be that preference for an expository style is partly a function of perceived inability to elicit pupil behavior (such as, participation), deemed important for discovery style. Since use of an expository style does not necessarily require overt pupil participation, it is not unreasonable for a neophyte teacher, unsure of his or her ability to elicit pupil behavior, to prefer to use a style which does not demand it. However, when pupil participation occurs relatively frequently during the lesson, the expository teacher's self-evaluation increases and concomitantly so does his perceived ability to elicit pupil participation. The teacher then becomes somewhat more likely to indicate a preference for a teaching style that is perceived to require pupil participation.

The results of the two studies presented here suggest that pupil participation in a teacher's lesson affects subsequent preference for using the teaching styles contrasted here. Since the pupil response variable was not experimentally varied, it is possible that other differences existed among groups which may account for the preference shifts. One difference is apparent: different amounts of teacher indirectness, indicating potentially different abilities, or, in part, simply reflecting the different pupil response levels.

In addition, it should be noted that these results were obtained with undergraduates preparing to be teachers, and not with in-service teachers. It may be that increased experience tends to stabilize teaching behavior, to the point where it is relatively uninfluenced by pupil response. Future ex-

perimental field studies should be designed to determine the extent to which experienced teachers are influenced by different types of pupil behavior as well as to determine the extent of individual differences among teachers in this regard. However, since the use of microteaching laboratories in teacher education programs has become more common, college instructors who want teacher trainees to experiment with and to master a variety of teaching behaviors should be aware that a trainee's preference for a particular style may be affected by his or her success in early experimentation with the style. Future investigations might examine the permanence of preference for a variety of instructional behaviors and styles. If preferences stabilize early, then instructors need to take special care to assure that students meet success in their initial attempts to acquire different instructional styles.

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