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## ABSTRACT

This study was designed to test the hypothesis that a measure of students' influence relative to teachers' influence is needed in the classroom. The Hit-Steer system, designed by Thibaut, Coules, and Robinson to reveal the patterns of teacher and pupil influence as expressed classroom interaction, was used to observe teachers and students in a) 14 seventh-grade classrooms and eight alternative high school classrooms in a suburban community and b) 30 seventh-grade classrooms in eight inner-city schools. The Pupil Perceptions of Origin Influence (PPOI) questionnaire was used to measure pupils' perceptions of classroom influence. Results indicate that a) teachers made "hits" about twice as often as students; b) there was a close relationship among students' perceptions of how much influence they actually had on classroom activities; c) in the classrooms with high PPOI scores, teachers made fewer rejections, more conditional responses, and fewer attempts to direct students' behavior; d) students in the alternative school tended to respond to teachers' "hits" with refusals and their own "hits" relatively (but not statistically) more than their peers in other schools; and e) the patterns of teacher-student influence differed on factors of school location and the level of PPOI score. These two factors were closely related, and the effects of each could not be assessed independently. (Three tables and a nine-item bibliography are included.) (PD)

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**WHO'S RESPONSIBLE?**  
**OBSERVED AND PERCEIVED PATTERNS OF TEACHER AND STUDENT INFLUENCE**  
**IN ALTERNATIVE AND TRADITIONAL CLASSES**

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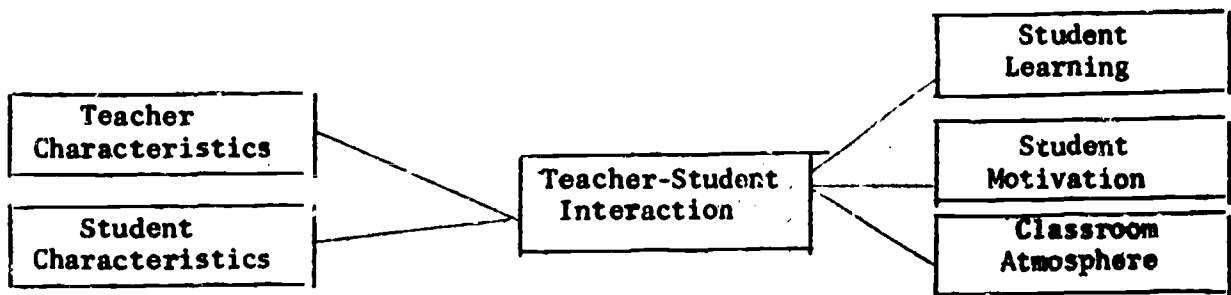
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This study was conducted in the context of a larger body of research investigating the relationships between teachers' beliefs, teacher-student interactive behavior, classroom atmosphere, and students' learning and motivation. The following diagram illustrates the framework within which these studies were conducted. For purposes of simplicity only some of the possible components are shown; no causal sequence is implied.



The general purpose of this study was to examine the Teacher-Student Interaction component from the perspective of the "personal causation" theory of motivation (deCharms, 1968). This theory is particularly relevant for educators and students seeking to develop educational alternatives for individual learning programs.

#### Theoretical Rationale

The growing interest in "alternative" schools, open education, and the like, which presumably offer students more freedom to determine what and how they learn than "traditional" schools (Hansen, n.d.), raises the question of how much influence students can or should have consonant with maximum learning and motivation. DeCharms and Bridgeman (1961) found that when members of a learning group felt they had freedom to influence the group's activities, they had more positive feelings toward the teacher and were more willing to work

for him than when they had no opportunity to control the situation. Similar findings in industrial settings have been reported by Coch and French (1960) and Kahn and Katz (1960).

DeCharms (1972) conducted a four-year motivation development project with inner-city teachers and students based on his notion of personal causation, "the initiation by an individual of behavior intended to produce a change in the environment" (1968). The project resulted in greater gains in academic achievement and higher motivation in students whose trained teachers helped them to feel and act like "Origins" rather than like "Pawns". Origins perceive their behavior as determined by their own choosing, while Pawns perceive their behavior as determined by external forces beyond their control.

If students were allowed to participate in decisions about topics of discussion, classroom procedures, etc., they might feel more like Origins, that is, more motivated and perhaps learn more than students who were not allowed any influence in such matters. In contrast, complete freedom to make these decisions might result in decrements in learning and motivation for many students (a situation resembling Seeman's (1959) description of anomie); complete lack of freedom to participate in decision-making, that is, being treated like Pawns, might also have negative effects on students' achievement and motivation. Thus, a curvilinear relationship could be postulated between students' relative influence in the classroom and their learning and motivation, such that too much control by either teacher or students would be expected to have deleterious effects.

To test the hypothesis, a measure of students' influence relative to teachers' influence in the classroom was needed. The immediate objectives of this study, then, were to develop an observational measure of the relative

influence of teachers and pupils in determining class activities, to validate it by comparing the observational data to pupils' perceptions of classroom influence patterns, and to provide descriptive data about differences in interactive behaviors of teachers and pupils between "alternative" and "traditional" classes.

Based on a conception of influence attempts and their effects developed by Thibaut, Coules, and Robinson and presented in Thibaut and Riecken (1955) the Hit-Steer Observation System was developed. The Hit-Steer system is designed to reveal the patterns of teacher and pupil influence as expressed in classroom interaction by assessing the number of times a teacher or pupil attempts to influence ("hits") the other and whether the influence attempt "produces a change in the environment" (whether the other "is steered" or not). The system comprises two parallel sets of four categories. The first set defines behaviors when the teacher tries to influence the students; the second, when a student tries to influence the teacher. Each set contains one category for hits and three categories for the various kinds of responses: a compliant response, or Steer; a refusal to comply, or No-Steer; and a response that is not clear or not made, or Conditional Steer.

### Procedures

Teachers and students in 52 classrooms in the metropolitan area of a large midwestern city voluntarily participated in the study. The sample included 30 seventh grade classrooms in 8 inner-city schools primarily serving black students, 14 seventh grade classrooms from a racially integrated suburban community, and 8 "alternative" high school classrooms in the same suburb. Teachers in both urban and suburban districts represented a mixture on the variables of sex and race.

To measure pupils' perceptions of classroom influence, the Pupil Perceptions of Origin Influence Questionnaire (P.P.O.I.) was used. The 28-item Likert-type scale (Koenigs and Hess, 1970), developed in conjunction with deCharm's motivation development project, assesses how much students perceive their teacher as encouraging them to feel in control of their behavior, i.e., to feel like Origins. In that study, classrooms perceived by the students as encouraging Origin behavior produced increased learning. The instrument serves as an indirect measure of the teacher as he or she influences the atmosphere of the classroom.

Students in 52 classrooms were administered the P.P.O.I. and a mean score was calculated for each classroom. The scores were then rank ordered from high to low and the distribution divided into quintiles. To tap the entire range of scores, classes in the highest, middle and lowest quintiles were chosen for observation. Without knowledge of the P.P.O.I. score or quintile, trained observers used the Hit-Steer system to score teacher-pupil interaction for two hours in 35 classrooms: 9 in the lowest quintile, 12 in the middle quintile, and 14 in the highest quintile.

Two observers used the Hit-Steer Observation System to a criterion of 85% agreement before data collection began. The principal observer scored interaction in all 70 observation periods, while the reliability observer scored interaction in a random sample of one-third of the sessions, or 25 observation periods. Based upon a refinement of Scott's (1955) procedure for calculating observer agreement, which eliminates the overestimation of reliability attributable to chance, inter-observer agreement was calculated at 85% over all sessions. To make the data comparable, mean scores in the 8 observation categories for each classroom were equated for a 20-minute sample period. Because all 8 of the alternative school classes fell into the highest quintile,

6 high-scoring classes from other schools were included in that group so that the two factors would not be completely confounded.

### Results and Discussion

One important outcome of the study was data about who was making the decisions in typical classrooms as teachers and students went about their day-to-day activities. Table 1 presents the mean, range, and standard deviation of scores in the eight observation categories based on the sample of 35 classes. During a 20-minute period, the rate of influence attempts by the teacher ranged from 1 every 3 minutes to 3 in 1 minute, with a mean of 1 1/2 Hits every minute. In the same sample period, the rate of Pupil Hits ranged from 1 every 3 minutes to 1 1/2 in a minute, averaging less than 1 per minute. Thus, overall, teachers made Hits about twice as often as students.

To validate the observational measure, students' perceptions of how much their teacher helped them to feel in control of their behavior were compared with their actual influence in the classroom. First, the ratios of both Teacher Hits and Pupil Hits to total Hits were computed; they ranged from 83% Teacher Hits - 17% Pupil Hits to 39% Teacher Hits - 61% Pupil Hits. Testing the curvilinear relationship based on the Teacher-Pupil interaction would require at least 3 groups: one, in which the teacher made most of the hits; a second, in which teacher and students shared more or less equally in making hits; and a third, in which the students made most of the hits. Since the sample did not contain enough classes that could be placed in the third group, only the first two were examined.

There were 15 classes in which the teacher made more than 60% of the total hits, or about twice as many hits as the students, and 20 classes in which the teacher and students each made between 40% and 60% of the total hits, or about equal numbers of hits. Mean classroom scores on the Pupil Perceptions of

Origin Influence questionnaire for the two groups were 81.1 and 91.8, the difference significant at the .001 level ( $F = 10.32$ ,  $df = 1,33$ ). Thus, students' perceptions of how much their teacher helped them to feel in control of their behavior in class were very closely related to how much influence on class activities they actually had.

Since the students were basing their responses on the Pupil Perceptions of Origin Influence questionnaire, in part at least, on teacher-pupil interactive behavior, potential differences in the overall influence patterns between the classes in the high, middle, and low quintiles were investigated. The three levels of P.P.O.I. scores were entered as the independent variable in a multivariate analysis of all eight observation variables. To answer the third question posed at the beginning of the study, whether interaction patterns differed in the various types of classes, school location was entered as the second independent variable in the multivariate analysis.

Table 2 presents the mean scores for the observation categories for the three levels of Pupil Perceptions of Origin Influence scores. For the three response categories for Pupils and the three response categories for Teachers - the Steer, No Steer, and Conditional Steer categories - the table entries are actually ratios of the number of tallies in each category to the number of tallies in the corresponding hit category. The data are presented this way simply because the number of Steers in a class, for example, depended on the number of hits that had been made. Since the number of hits varied by classroom, the number of steers couldn't be compared directly. Data for the response categories are presented in the same way in Table 3, which contains mean scores in the observation categories for the four school locations. In Table 3, the scores for Suburban school 2 resemble those for the Alternative school, especially in the response categories, while response data



for Suburban School 1 are more similar to innercity school data. (Since proportions are not normally distributed, an arc-sin transformation was performed on them for the analyses.)

Results of the analyses indicated that the multivariate effect for Classroom Atmosphere approached significance, and there were significant multivariate effects for Location and the Classroom Atmosphere by Location interaction. One-degree-of-freedom tests for the main effects were then run, yielding a significant linear trend for Pupil Perceptions of Origin Influence levels. A significant step-down F was found only for the Teacher Hit variable ( $p < .01$ ), although Teacher No Steer as a function of Pupil Hit and Teacher Conditional Steer as a function of Pupil Hit approached statistical significance ( $p < .06$  and  $.07$ , respectively). Thus, in the classrooms with high scores on the Pupil Perceptions of Origin Influence questionnaire, the teachers made fewer attempts to direct their students' behavior. They also made fewer rejections and more conditional responses to the students' attempts to influence them.

Since the levels of the Location factor were ordinal, tests for linear or curvilinear trends could not be performed. Instead, the one-degree-of-freedom tests compared the scores for each level to the mean scores for all levels. Classes in the Alternative school and one Suburban school were each found to differ significantly from the mean of all classes. Specifically, in the Alternative classes there were significantly fewer Pupil Conditional Steers as a function of Teacher Hits ( $p < .04$ ). That is, students in the Alternative school tended to respond to teachers' influence attempts with refusals and with attempts to influence the teacher relatively (but not statistically) more than their peers in other schools. Classes in Suburban

school 1 differed from the mean with fewer Teacher Conditional Steers as a function of Pupil Hits ( $p < .05$ ), more Pupil Steers as a function of Teacher Hits ( $p < .04$ ), and fewer Pupil No Steers as a function of Teacher Hits ( $p < .03$ ). The marginally significant difference between the innercity classes and the mean was attributable mainly to more Teacher Hits ( $p < .002$ ).

Because all eight of the Alternative school classes were members of the high-scoring quintile, it was necessary to determine the impact of these special classes on the group differences. Thus, a set of multivariate analyses without data from that Location was run. In these analyses, the number of locations was 3, the high-scoring group comprised 6 classes instead of 14, and the total  $n$  in the sample was 27 rather than 35. Results indicated that the Classroom Atmosphere differences, while no longer significant, continued to show the same trend, while Location effects and the Classroom Atmosphere by Location interaction remained significant ( $p < .02$  and  $p < .03$ , respectively). The Location effect was largely attributable to differences between the innercity scores and the overall mean scores, with the innercity classes having significantly more Teacher Hits ( $p < .02$ ). The results indicate that the patterns of teacher-student influence differed on both factors, Level of Pupil Perceptions of Origin Influence score and school Location. They further indicate that the two factors were clearly related, and in this sample the effects of each could not be assessed independently.

Observers and proponents of educational alternatives, like Hansen (n.d.), have suggested that "Students in Alternatives are there because they perceive that there they can genuinely make decisions about their own lives" (p. 15). The results of this study, however, are not taken in support of such statements, because school Location was not considered a conceptual variable. That is,

there was no clear conceptual definition of an Alternative school with corresponding operations by which the particular school in this sample could be validated as a bonafide member of that class of schools. With only its name as evidence of its validity, this Alternative school could not legitimately be identified as representative of even the other four Alternative schools in the area, let alone the myriad programs across the country that share its name.

If, in fact, students' perception of their ability to make decisions about their lives is considered an important component of the conceptual definition of an alternative school, as Hansen suggests, the Pupil Perceptions of Origin Influence questionnaire provides a way to operationalize that component, and thus, to validate claims that this is what happens in an alternative school. If students' ability actually to make such decisions is considered another important component of the conceptual definition of an alternative school, the Hit-Steer Observation System provides a way to operationalize that component and, thus, to validate claims that this also is what happens in an Alternative school. Rather than saying that Alternative schools are "different from" or "better than" other schools, this study offers one way of saying what they are.

Table 1

Hit-Steer Observational Results

Items	Observation Categories							
	Teacher Hit	Pupil Steer	Pupil No Steer	Pupil Cond. Steer	Pupil Hit	Teacher Steer	Teacher No Steer	Teacher Cond. Steer
Mean (n = 35)	27.64	23.03	.17	2.54	16.70	14.87	.71	1.12
Range	7.0 to 55.6	5.5 to 53.0	0.0 to 0.9	0.0 to 6.9	6.7 to 29.6	6.7 to 24.8	0.0 to 3.7	0.0 to 6.8
Standard Deviation	12.25	12.28	.25	1.44	6.71	5.83	.83	1.67

Table 2

Observational Results in Classes with Different Atmosphere

Level of P.P.O.I. Score	Observation Variables																								
	Teacher Hits			Pupil Steers			Pupil Cond. Steers			Teacher Steers			Teacher Cond. Steers												
	Teacher Hits	Teacher No Steers	Pupil Steers	Teacher Hits	Teacher No Steers	Pupil Steers	Teacher Hits	Teacher No Steers	Pupil Steers	Teacher Hits	Teacher No Steers	Pupil Steers	Teacher Hits	Teacher No Steers	Pupil Steers										
Low (n = 9)	33.71	86.40	.48	8.87	16.31	90.27	6.94	2.51	31.96	85.22	.48	12.02	14.91	94.64	2.86	2.18	20.32	71.27	1.67	11.28	18.49	85.44	3.45	5.86	
Middle (n = 12)																									
High (n = 14)																									

Table 3

Observation Results in Various Schools

Observation Variables

Location	Teacher Hits		Pupil No Steers		Pupil Teacher Hits		Pupil Cond. Steers		Teacher Steers		Teacher No Steers		Teacher Cond. Steers	
	Teacher Hits	Teacher Hits	Teacher Hits	Teacher Hits	Pupil Hits	Pupil Hits	Pupil Hits	Pupil Hits	Teacher Hits	Teacher Hits	Teacher Hits	Teacher Hits	Pupil Hits	Pupil Hits
Inner-City (n = 17)	35.96	87.62	.13	10.09	14.71	92.04	3.87	3.70	92.04	3.87	3.70	92.04	3.87	3.70
Alternative (n = 8)	18.89	64.91	2.04	10.26	19.86	88.43	2.69	9.14	88.43	2.69	9.14	88.43	2.69	9.14
Suburban 1 (n = 4)	17.05	85.30	1.10	9.13	17.87	92.03	5.80	1.68	92.03	5.80	1.68	92.03	5.80	1.68
Suburban 2 (n = 6)	25.70	74.65	1.68	15.28	17.18	84.02	5.77	10.40	84.02	5.77	10.40	84.02	5.77	10.40

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