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By-Clear, Delbert K.

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To test the influence of principals, subject matter experts, and department chairmen upon teacher decisions, an experiment was conducted with secondary school social studies teachers, principals, and department chairmen as participants. While the results of the experiment were uniformly nonsignificant, respondents generally concurred that the principal has little influence over teacher decisions. Teacher respondents consistently indicated influence of their teacher colleagues as greater than that of their principals (authority of position) or department chairmen (authority of knowledge). (JK)

Authority of Position and Authority of Knowledge: Factors Influencing Teacher Decisions

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Delbert K. Clear
Assistant Professor

Department of Educational
Administration and Supervision

University of Wisconsin-Milwaukee
Milwaukee, Wisconsin

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An examination of authority relationships in organizations can take several directions. The so-called scientific management school of organizational study tends to consider it in terms of potential sanctioning power and notions of proper respect for superordinates in a hierarchical structure. The human relations school of organizational study, by contrast, thinks of authority in terms of communication, morale, and the processes of group decision-making. Lately, revisionists of many persuasions have attempted to fuse the better elements of both schools and produce a comprehensive model of organizational behavior. The revisionists' unwillingness to restrict themselves to the parameters of a given "school" has produced some very useful by-products, among them the concept that authority in organizations is <u>not</u> restricted to single-factor models, but is divided into at least two rather separate domains. On the one side, there is authority which is based on the position of an incumbent in the organizational hierarchy and generally carries substantial sanctioning power. On the other, there is authority that is based on knowledge or ability. This type is accompanied by the development among subordinates of an internalized willingness to comply.

The development of these authority types in an organization is not simply a matter of chance and tradition. It is determined by the nature of the tasks that the organization is created to perform (Scott, 1967). Those that demand creativity or the application of complex, even esoteric procedures, lead toward professional judgments and the development of authority based on knowledge or ability. Those that can be accomplished through routinized directions and procedures that are specified in advance lead to the development of authority relationships based on position.

Although the professional model of occupational life shares many of the characteristics of bureaucratic employment, serious conflict arises when authority of position and authority of knowledge compete for employee acquiescence in organizational control structures (Scott, 1964). Bureaucratic control depends on evaluation and supervision of task performance by hierarchical superordinates while professional control depends on self-regulation according to internalized norms. In the professional framework, the exercise of authority in attempts to influence behavior must be based on superior knowledge, sometimes called expertise.

But the practice in public secondary schools is to attempt to control professionals through mechanisms of supervision of instruction that are almost entirely in the hands of hierarchical superordinates - principals. Such supervision implies that the supervisee is obliged to follow the supervisor. This implication has been the source of considerable difficulty because the authority base of principals in relationship to teachers is not clear. The principal, whose role is based on a bureaucratic hierarchical model attempts to influence teacher behavior, but the teachers have many attributes of a professional status, chief among them a high level of specialization and the responsibility to perform a very complex task. Thus, both the authority-of-position and the authority-of-knowledge constructs compete for teacher allegiance. The principal and his immediate staff, who can scarcely attain the task specific expertise necessary to develop authority-of-knowledge, continue to attempt to influence teacher behavior based on authority-of-position. Further, it is possible that departmentalization, with the position of department chairman, may be a framework in which authority-of-knowledge leadership develops.

This research investigated three questions suggested by the above conditions: (1) is the principal as ineffective in influencing instructional matters as the theory and available evidence suggest? (2) will the specific subject-matter expertise of department chairmen result in increased potential for influencing instructional decisions? and (3) will teachers' level of professional orientation determine theirreactions to control attempts from principals and department chairmen?

An experimental design was developed. The working hypotheses were as follows: (1) in instructional matters, a specific subject-matter expert's influence on teachers of that subject will be greater than the influence of the principal, and (2) as teachers' professional orientation increases, the influence of the principal decreases and the influence of the department chairman increases.

The design was based on the work of Crutchfield (1955). Six Social Studies teachers, a principal and a Social Studies department chairman were accommodated in each experimental session. Visual communication among the subjects was prevented, but they were allowed a plausible facsimile of communication by means of electrical interconnection through lights and switches provided each subject. Actually, the experimenter controlled all of the communication.

The behavioral objective was to have each teacher choose the best of three plausible, but different answers or solutions to a series of twenty short instructional problems. Prior to the teachers' sending their responses to the experimenter for recording, however, each received an answer attributed either to the principal or department chairman. The source of this ostensible answer, constituted the two treatment groups. The presence of the principal and the department chairman during the experimental sessions was necessary only to lend credibility to the experimenter's claim that their answers were being used.

In all cases, assignment of teachers to treatment groups by pairing them with the principal or department chairman was done randomly. In addition, the answers attributed to them were randomly determined. The criterion measure of the experiment was the number of times the teachers' answers were congruent with the spurious inputs they received. Following the experimental session, the subjects filled out an instrument containing various demographic and attitude data including a professionalism scale. The experiment was conducted in eleven different schools; useable data were obtained from sixty of the sixty-five teachers who participated.

The results of the experiment were uniformly non-significant, in a statistical sense. Professionalism, although measured by a highly reliable instrument was <u>not</u> related to rate of congruence with partner's input. Therefore, the hypothesis of interaction between teachers' professional commitment and acquiescence to influence attempts failed. This analysis was done using homogeneity of regression techniques (Wilson and Carry, 1968; McNemar, 1962). The regression coefficient for the principal group was -.04, while that of the department chairman group was -.09. Inasmuch as professionalism, as measured, was not predictive of congruence, a one-way analysis of variance between the two groups' mean congruence scores was conducted to test for treatment effects alone. This analysis did not support the hypothesis that the department chairmen would have a greater influence on the teachers than the principals.

Demographic data that could be logically related to acquiscence to influence were also examined. A series of two-way analyses of variance were used (Elashoff and Abrams, 1968). None of the variables, experience/inexperience, teachers having/ not having Master's degrees, or department chairman having/not having master's degrees in the Social Sciences were significantly related to teachers' congruence with inputs from the two authority figures.

It is very difficult to propose any conclusions based on these findings since to do so raises the question of the practical significance of statistical non-significance. The only safe conclusion is that there is no practical significance to such findings because failure to reject a null hypothesis does not indicate that it is true.

Nevertheless it is only prudent to be alert to the possibility that the consistently non-significant differences were the result of the teachers' failing to distinguish between principals and department chairmen as hypothesized.

While this possibility is attractive, data examined in secondary analyses indicate that the teachers indeed did differentiate between the two positions and reacted very differently depending upon with which they were paired. Professionalism scores, for instance, which were obtained immediately following the experimental sessions, indicate that the principal occupied a unique role in relation to the teachers. The evidence for this is the finding that there was a statistically significant difference between the means and variances of the two treatment groups on the professionalism scale. Hartley's procedure (Walker and Lev, 1958) was used in the comparison of the variances. The obtained ratio was significant beyond the .05 level. Although this suggested that the use of t-ratio comparison of the means would be an inappropriate test for differences between the groups' professionalism, the procedure was nevertheless used. The size of the sample and the over-all robust quality of the t-test seemed to justify the decision. The obtained ratio fell between the .05 and .10 levels of significance. (Clark, Coladarci and Caffrey, 1965). Had one extremely high outlyer in the department chairman group (16 pts. above the next highest, only 5 pts. away from the maximum score obtainable) been excluded from the analysis its mean would have been significantly lower than that of the principal group.

The scores of a separate group of teachers who took the professionalism scale prior to the experimental treatments reinforced these data. Their mean was significantly lower (beyond the .05 level) than that of the principal treatment group and was virtually identical to that of the department chairman group.

The interpretation of these data is hazardous, at best, but the fact that the professionalism scale was administered to the participants after the experimental sessions strongly suggests that partnership with the principal sensitized teachers to the tenets of professionalism -- almost as if they had been under threat. Pairing with the department chairman, on the other hand, had no such effect. The increase in mean and variance associated with principal treatment was a result quite similar to that normally associated with training effects.

Perhaps the most interesting data in the experiment were gathered in the attempt to detect the possibility of a principal acting as an authority of knowledge figure. (see Table 1). Although the sample size is so small as to make them very tentative, they do suggest an important condition that warrants further investigation.

Note how the principals consistently over-rated the influence of the department chairmen, while underrating the influence of collegial relationships. The percentages are reversed in almost every case, with principals saying that department chairmen are influential while teachers report that their colleagues are. Department chairmen, however, have a closer perception of the way teachers feel. It might be noted here that none of the respondents underrated the role of the principal. There is almost unanimous agreement that he has little influence.

TABLE I

Perception Data on the Influence of Organizational Incumbents on Instructional Matters

		Teachers' Responses	Principals' Responses	Dept. Chmn's Responses
When social studies teachers encounter instructional problems whom do they normally approach first for assistance?	(A) Principal	0	0	1 (10%)
	(B) Dept. Chmn.	21 (37%)	8 (73%)	5 (45%)
	(C) Colleagues	36 (63%)	3 (27%)	5 (45%)
	(D) Other	0	0	0
Who would be most effective in getting a social studies teacher to adopt a new teaching method?	(A) Principal	3 (05%)	0	1 (10%)
	(B) Dept. Chmn.	13 (23%)	8 (73%)	3 (25%)
	(C) Colleagues	38 (68%)	3 (27%)	6 (55%)
	(D) Other	2 (04%)	0	1 (10%)
Who would be most effective in getting a social studies teacher to adopt new or different instructional materials	(A) Principal	0	0	0
	(B) Dept. Chmn.	21 (37%)	8 (73%)	6 (55%)
	(C) Colleagues	36 (63%)	3 (27%)	5 (45%)
	(D) Other	0	0	0
Which of the following has the most overall influence on the instructional behavior of social studies teachers in your school?	(A) Principal	4 (07%)	1 (10%)	1 (10%)
	(B) Dept. Chmn.	15 (27%)	6 (55%)	1 (10%)
	(C) Colleagues	34 (61%)	3 (25%)	7 (64%)
	(D) Other	3 (05%)	1 (10%)	2 (16%)

Such conclusions as can be made must be tentative, but the patterns of consistency in the data are clear. The failure of the department chairman group to attain the hypothesized positive regression coefficient suggests that they have little generalized influence over teacher decisions. The perception data of Table 1 reinforce this impression by revealing that teachers' primary source of instructional leadership is found among their colleagues. In the case of principals, where the sign of the coefficient was as hypothesized there is the suggestion that teachers are not amenable to influence attempts from this source. Again, the perception data of Table 1 support this impression - virtually none of the teachers perceived the principal as a source of direct instructional influence.

It is of more than passing interest to consider the possibility that the experimental design, itself, enhanced the probability of non-significant findings. It may be that the temporary atmosphere of the partner arrangements and the contrived nature of the problems, all of which were artificial and hypothetical, created a situation in which almost anyone's opinion would have been welcomed. Also, making choices among the alternative responses in the booklets was certainly not a duplicate of a day-to-day curricular or instructional decision. The consequences of a given decision in the experimental situation were not critical. Consequences of a decision during the work-day are. This could have made agreement or disagreement with input too easy. None of the teachers had a personal, emotional investment in any of his decisions. As far as any of the participants knew, no one could ever tell whether agreement with input had occurred. Further, it might be that the subject-matter area of the department used had a levelling effect on the influence of the two treatments. If a department with esoteric subject matter had been used, perhaps the specificity of knowledge would have led to increased department chairman and decreased principal influence.

The main implication of the study is that secondary principals should not plan on having a direct influence on the instructional behavior of teachers. Futher, the findings imply that the appointment of a department chairman, regardless of his qualifications,does not guarantee that a source of generalized influence over teacher decisions will be available. This much seems certain - the authority-of-position and authority-of-knowledge domains, if they exist in public secondary schools will not easily be measured. The data of this study attest that a behavioral measure can fail to find evidence that teachers view the principal and the department chairman differently while attitude measures obtained at the same time from the same individuals strongly suggest that teachers do differentiate between them. The task for further research is to determine which of these findings is closer to the real world of the public school teacher - a professional in a bureaucratic organization.

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