DOCUMENT RESUME

ED 090 682 EA 006 134

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TITLE The Management Information System and the Control of Educational Change: A Field Study.
PUB DATE 74
NOTE 25p.

EDRS PRICE MF-$0.75 HC-$1.85 PLUS POSTAGE
DESCRIPTORS Classroom Environment; *Educational Change; *Educational Development; *Field Studies; High Schools; *Management Information Systems; Organization; Program Evaluation; Systems Approach; Urban Schools

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THE MANAGEMENT INFORMATION SYSTEM AND THE CONTROL OF EDUCATIONAL CHANGE: A FIELD STUDY

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ABSTRACT

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This paper represents the findings of a field study designed to examine the management information system (MIS) of an urban school district to determine the role it plays in bringing about educational change in the classroom. Change which ultimacely draws a district into a closer relationship with the needs of society. The MIS as a type of "guidance system" for change is made up of three specific information loops and a control mechanism which acts on the information. It was found that the very respected school district studied did not have an operative MIS. Although a number of the important components were present, they were continually breaking down. Through a series of propositions the writers point out the character of the organizational forces which exlude the existence of a functioning MIS and therefore greatly reduce the possibility of systematic, planned change in the high school.

THE MANAGEMENT INFORMATION SYSTEM AND THE CONTROL OF EDUCATIONAL CHANGE: A FIELD STUDY

Public schools have been under bitter attack in recent years because of an alleged weakness in the linkage between the product of the school and the needs of the social and economic markets. For example, one critic remarks that:

> Our urban schools are spawning hundreds of thousands of functional illiterates who are incapable of playing a constructive roll in our society and who cannot be integrated into the economy without costly remedial education. . .(Clark, in Toffler, 1968:136).

A growing number of people are forcefully demanding that the school should be an engine of development in the urban area and not a major contributor to the unemployment and underemployment problem. The school and its prooduct should be closely linked and supportive of the shifting demands of the market places it serves, whether that be business, industry, institutions of higher learning or the home.

In the educational sector, there are many forces at work which thrust change on the practices and policies of the school district, to name a few: new laws mandated by state legislatures, teacher militancy, student pressures for increased participation in decision-making, increased or decreased material wealth of schools, technological innovation, and so forth. These and other uncoordinated forces have tended to buffet the school and drive it in an irregular, unsystematic and unplanned direction.

However, within the boundaries of most organizational types, including the school district, there is a mechanism at work which is designed to provide specific, planned direction to the process of change. This mechanism is referred to as a management information system (MIS) and it operates not unlike a guidance system. To use an example, an airplane flying across country depends on the outboard altimeter and forward radars to gauge oncoming environmental events, such as mountains and storms, and inboard instruments to detail the performance of the

craft, such as gas consumption and cabin temperature. A combination of the outboard and inboard feedback enables the crew to make the necessary decisions to travel from one point to another.

In a like manner, if the MIS of an organization functions correctly, it will feed external environmental and internal performance information to the decision-makers which will enable them to change the character of the output so that it matches the shifting demands of society. Before defining the operational characteristics of the MIS, it is necessary to illustrate certain organizational theory which surrounds the form and function of the school system.

The School and its Environment

A school district can be thought of as a system made up of subsystems (e.g., classrooms, schools, central office) and embedded in an environmental system (community). In this context, then, two relationships are prominent: the school district vis-a-vis the community and the district central office vis-a-vis its dependent subsystems. With respect to the first, Richard Carlson (1965:6) refers to the school as a "domesticated" organization.

> They are not compelled to attend to all of the ordinary and usual needs of an organization. For example, they do not compete with other organizations for clients; in fact, a steady flow of clients is assured. There is no struggle for survival for this type of organization--existence is guaranteed. Though this type of organization does compete in a restricted area for funds, funds are not closely tied to quality of performance. These organizations are domesticated in the sense that they are protected by the society they serve.

Carlson also identifies a type of organization he calls "wild" in character. They must struggle for survival, their existence is not guaranteed, support is closely related to the quality of their product, they select their clients, and at times they cease to exist. Wild organizations are not protected at vulnerable points as are domesticated organizations. They also are quicker to adapt to the changing demands of their environments due to their greater survival needs. Examples of wild organizations are businesses, private schools, and hospitals.

With respect to the other prominent relationship (between teacher and admin-

istrative subsystems) internal to the school district, there are two very different sources of organizational control: ". . .one rooted in the classical bureaucratic tradition of formal centralized authority and the other based upon the informal prerogatives and professionalism of the teacher" (Hanson, 1973:1). In addition, as Charles Bidwell (1965:975) points out, an important facet of school organization maintained by the teacher as a professional is making discretionary judgments about procedures regarding the educational program. "Teacher autonomy is reflected in the structure of school systems, resulting in what may be called their structural looseness." A primary function of the management information system is to transcend this "structural looseness" by binding the various subsystems into a collectivity capable of conducting a unified change effort. Another primary function is to provide a direction of change by establishing a forceful linkage between the domesticated organization and its external environment. If either of these two tasks is not fulfilled, the effectiveness of the MIS to act as a guidance system is decisively impaired.

The Management Information System Framework

Virtually any organization which has an output (e.g., automobiles, radios, high school graduates) that must compete on the market place is in need of a MIS which facilitates a continuing close relationship between the organization and the changing needs of society. Figure 1 gives a simplified picture of a Generic Organizational Model containing the basic components central to a MIS.

Figure 1 about here

The MIS can be defined as ". . .a communication process in which information (input) is recorded, stored and retrieved (processed) for decisions (output) on planning, operating, and controlling" (Murdick and Ross, 1971:292). A management information system is made up of three systematic information loops which feed

information to a decision-making (control) mechanism. They are: (a) an "outside world" loop, (b) an internal feedback loop, and (c) an external feedback loop. The decision-making mechanism then directs the organization toward a patterned equilibrium vis-a-vis its environment (Murdick and Ross, 1971:135).

The "outside world" loop closely monitors the changing needs of the market places (which receive graduates) by accumulating such information as specific manpower projections, new technologies, changing college admissions requirements, and job skill breakdowns. The "internal feedback" loop provides information on the effectiveness of the teaching-learning process as derived from comparing test scores with predetermined objectives. The test scores are usually from standardized tests or teacher-made-tests. Measures on the teaching-learning process are important because they tell the teachers how well they are doing whatever they are doing. However, they unfortunately do not tell the teachers if they are doing the right things in the first place.

The third feedback loop important to the process of classroom change is the "external feedback" loop. This information cycle is tuned to determining how well the graduate does on the market place, such as on the job or in the university, and reporting back data which tell the school decision makers where changes in the curricular program should come.

The decision-making (control) mechanism of the school is the recipient of the data derived from the three information cycles. Based on the accrued information, the educational leadership determines where and how the instructional process ought to be steered in a planned direction of change. At least that is what the theory of the MIS suggests should happen in the sense of the ideal.

It should be pointed out that not all the information which finds its way into the decision-making process can be attributed to the MIS. Only that information which is relatively patterned and systematic over time is considered to be part of the MIS, thus excluding crisis generated, one-time-only or special event data.

The general objective of this research is to study the MIS of an urban school district to determine its effectiveness in bringing about change in the academic program of the classroom, and, therefore, maintain the output of the school in close contact with the needs of its market places. To approach this objective, the following questions will be dealt with: (a) What is the source and content of the information that flows through the three information loops of the MIS? (b) When the information arrives in the hands of the school decision-makers, is it defined in such a way as to permit specific decisions on curricular changes? (c) What are the characteristics of the educational organization as well as the teaching role which impede the proper functioning of the MIS? (d) What are the characteristics of the relationship of the community to the school which impede the proper functioning of the MIS?

In response to the issue of how research tends to deal with organizational structures, Alvin Gouldner (1959:409) has written that, "Modern organizational analysis by sociologists is overpreoccupied with spontaneous and unplanned responses which organizations make to stress, and too little concerned with patterns of planned and rational administration." This study will compare the spontaneous reality of an operating MIS with a rational, idea-type model of a MIS. At the conclusion of the study a set of propositions will be presented which attempt to define the causes for the differences between the ideal and the real.

Setting of the Study

The study took place in the city of Whitney, a prosperous community of approximately 150,000 residents located in the Southwestern part of the United States. The Whitney School District, which consists of 24 elementary schools, 5 junior high schools and 3 high schools, has for many years enjoyed the reputation of being very innovative and "a good place to send your kids."

They study surrounding the MIS of Whitney School District involves the central office, one high school (referred to as Kennedy High), and a number of businesses,

industries and institutions of higher learning. A field research methodology was used, thus indepth interviews and document analysis were the principle means of gathering data. Interviews were conducted over a period of several months at all hierarchical levels of the school district as well as in the community. The research reported here is exploratory in nature as opposed to hypothesis testing (Scott, 1965:267).

The MIS of Whitney School District

The first information cycle monitors the changing character of the market places which will eventually receive the graduates of Kennedy High. This is the cycle that ought to keep the intellectual and vocational blacksmiths off the market.

At the Central Office of Whitney School District there is a man whose primary responsibility is gathering, condensing in concise form, and distributing vocationally oriented materials to the district high schools. The Vocational Man, as he is called, distributes information covering such things as short and long range projections on local and national manpower needs, job skill breakdowns, career education trends, current and anticipated state and Federal legislation, and so forth. Thus, this information flows into the Central Office from the "outside world," is digested by the Vocational Man, and is sent to Kennedy High where it is stored and/or distributed to the intended teachers. Completing the cycle there should be a loop from the teacher back up to the Vocational Man in the Central Office requesting such things as more specific manpower projections, clarification of data, information on new technologies, and the like. Then this information cycle begins once again as the Vocational Man begins to survey the surrounding market places for new and updated information .

The following comments reflect on the characteristics of the information cycle as it flows from the central office through Kennedy High and back to the central office.

(High School Administrator) The Vocational Man sends me material on occupational outlooks, career education, technical schools, and legislation. He is very excellent in sending me materials. I glean the information and route it to the counselors, and the rest I send to the Career Development Man. When we get the new Career Center organized, it will go there also but right now it is stored in the existing Career Center. This Career Center is poorly organized and poorly located (in a small room behind the nurse's quarters). People do not drop in very often and there is no trained person to help them there. Sometimes a counselor will bring someone back there for something, but I don't know if teachers ever use it.

(The Career Development Man) In my folders up on the wall I have information on laws, career education, objectives, skills for the future, and manpower projections. So far this year I have had one person come in and look at the data and that is because we are going to be evaluated. Last year I had about 3 people come in. So far this information point has been sort of a dead end.

(Department Chairman) I receive information from the Vocational Man and distribute it to the teachers I think can use it. I look to see if it requires action (contains an action notice) and if it doesn't, I do not pay much attention to it. I do not keep a file of this information and neither do the teachers. It is generally disposed of. I don't know of any place in the school where manpower information is stored.

(Department Chairman) I don't recall receiving any manpower information from the Vocational Man. In fact, I don't know if anyone receives information about the job market. I don't have a file on the job market or any skill need projections. I imagine that there might be something like that around (Kennedy), but I don't know where.

(Vocational Teacher) I don't keep a file on career information and I don't know if the department chairman does either. Perhaps the Career Development Man has one, but I've never asked him. To my knowledge, there is no Career Center on this campus, but if there is one I just don't know about it.

Back at the Central Office the Vocational Man says that he hardly ever receives requests for information from the high school. He righteously continues to pump information into the loop but the cycle almost always breaks down before or after it arrives in the hands of teachers. None of the department chairmen, school administrators or teachers indicated during the interviews that this information cycle was particularly influential in deciding what was to be done in the vocational or academic classrooms. This finding is important because it suggests that a critical bridge is down between the shifting needs of the market places and a planned, updated response on the part of the school.

The dialogue just reported provides an interesting insight into the autonomous character of the teaching role. The data passing through the teachers' hands can be handled in a rather casual way because they know they will never be called upon to demonstrate what they did with the information with regards to the educational process. The teachers are the ultimate judges of what will take place in their classrooms and this right of decision is firmly protected by tradition, the norm of professionalism and, in many cases, tenure.

It should be noted, however, that a few vocational teachers have established their own information cycles with the "outside world." In a few instances these private systems are very sophisticated and make significant contributions to change in the classes of those few teachers who maintain them. These teachers had designed their classes so that almost all of the students would be immediately employable on the local job market as, for example, cooks, waiters or clerks. In order to succeed in this effort, these teachers had to know where job openings were occurring and what special training was required. "I make it a point to eat out frequently," one of these teachers said, "and when I do I always ask if they are soon going to need any cooks or waiters. When the time comes I try to place one of my students." These teachers report that they frequently modify their programs so that their students are up-to-date and ready to step into a job.

The information cycle established for the academic program is not nearly as complex as the vocational program. The admission requirements to the public institutions of higher learning were fixed over ten years ago and have remained relatively unchanged. These admission criteria plus a high status college prepatory track and a "go to college" climate have resulted in a secondary school which is extremely dependent on higher education for its program direction.

At Kennedy High the college catalogues are stored in the career center and the counselors work hard to insure that students interested in continuing their education are knowledgeable about entrance requirements and performance expecta-

tions. The fact that admission criteria for institutions of higher learning play such an important role in defining the character of the academic program, coupled with the fact that the admission criteria have been unchanged for such a long period of time, suggest a significant pressure at work emphasizing stability in the high school curricular program.

The Internal Feedback Cycle

In conjunction with studying the changing character of the school market places, the MIS calls for a second information cycle reporting to the decision-makers which focuses on the effectiveness of the teaching-learning process. In terms of bringing about change in the classroom, an appropriate internal feedback cycle minimally ought to be composed of the following stages: (a) The decision makers at the high school determine the special characteristics of a testing program which would provide data on how specific parts of the educational program could be developed and improved. These tests necessarily have to be standardized to insure questions of reliability and validity as well as to provide for comparisons across time. (b) After the tests are given, they are sent out to be scored, coded in some form meaningful to the teachers, and finally returned to the high school. (c) On arrival at the high school, the data are distributed as well as stored. (d) The data are then analyzed and specific decisions are made regarding how the training program can be modified to bring about improvement. (e) After a period of time, the testing cycle begins once again with the expectation that the changes to the program will have brought about increased learning.

When the teachers and administrators were asked how they judge whether Whitney School District has a good or bad academic program, the first response of most of the educators was to point to the statewide testing program (which is conducted at the 12th grade). But herein enters the problem in terms of the information cycle. The cycle begins and ends at the State Department of Education, with the Board of Education standing in at times as the surrogate benefactor. The infor-

mation loop flows from the State Department (where the tests are mandated), to the central office at Whitney, to Kennedy High (where the data are gathered) back to the central office, to the board, and finally to the State Department. A secondary loop swings back to Kennedy High from the central office. "As it is defined by the State Department of Education," a central office official observed, "it is not a basic purpose of the testing program to enable individual teachers to change their programs. If that can be done it is all right, but that is not the intention." An appropriate question then becomes, is change in the classroom a possible derivative of the statewide testing program? To say the least, a cloud of confusion surrounds this issue at Whitney.

The teachers and administrators at Kennedy tend to view the testing scores from the following positions: suspicion, "In the past we have made many judgments about minority kids based on tests and now we are finding out what we have been doing to them;" boredom, "The test that was given last week, I don't even know what it was for;" time crush, "I don't have half the time to do half the things that really need to be done;" monotony, "We give these tests year after year and nothing seems to change;" necessity, "We need these tests to help identify underachieving students;" and detachment, "These tests are really intended to keep the Board of Education happy." For these and other reasons, meetings are rarely held at Kennedy to study, analyze, and plan for change in the curricular programs of the classroom. As a social system, there are too many forces at work which would make this process anything more than a perfunctory activity.

The final step in the information cycle as it is now constituted would be requests made from teachers to the central office for special assistance in utilizing existing testing data or for the creation of special testing programs. "This happens about once a year," a central office official replied. A teacher at Kennedy gave a rather typical response as to why the information cycle tends not to make this final step. "I've never asked the central office to help me out with an (objective testing program) for my students. If I wanted to invest a lot

of my personal time, I could get the job done, but that would get in the way of a lot of higher priorities."

Another source of internal feedback is the teacher-made-test. The educators interviewed were virtually unanimous in asserting that the teacher-made-test is not a very accurate measure of learning. With its qualitative judgments, floating base, and lack of reliability and validity, the teacher-made-test gives few cues for systematic, precise and substantive direction for change in classroom activities.

Thus, the standardized testing program and the teacher-made-tests which serve as the main source of internal feedback simply do not give clear indicators to the teachers as to how well they are doing in the classroom. As was the case with the "outside world" information cycle, the "internal feedback" cycle tends not to provide meaningful data to the decision-making processes of the school.

The External Feedback Cycle

Along with the information cycles that are monitoring the changing environment of the school and the teaching-learning process, there should be a third cycle. The information which comes through this loop of the MIS is significant because it serves to tell the educators how well their product is performing on the market after graduation and, therefore, where changes should come in the training process. In terms of the school, the following information would be pertinent: (a) data on the ease in which students are placed in positions which are consistent with their training and interests, (b) systematic follow-up studies as well as personal reports on how the graduate views his post high school experience in relation to his training, and (c) information from employers and colleges on the performance of the graduates.

Kennedy High School performs virtually no placement activities for its graduates beyond the counseling function and writing letters of recommendation for those few students who ask. Thus, the school has little information on how suc-

cessful the graduates are in making the transition, or the kinds of placement problems they typically run into. Lacking this type of information, it is difficult to design the type of training which might help future graduates make an easier transition.

Also representing a potential flow of information which could have a bearing on the curricular program would be exchanges of correspondence, telephone calls, and personal visits between educators and members of receiving organizations. On this subject a Kennedy administrator reported, "Occasionally we receive a phone call from the outside telling us how a student is performing, but not very often. I suppose we could go out and solicit this, but we haven't. The most contact we have with industry is writing recommendations for some of our students."

The local junior college and a nearby state college send annual reports to Kennedy High regarding the first year performance of Kennedy graduates. This information flow, however, only covers a minority of the college bound students. Strangely enough, the state university sends only a grade point average for each student therefore it is of little use to the individual teacher at Kennedy who might wish to see how his former students are performing in his own subject field. The junior college sends the complete first year report card, but Kennedy teachers indicate that they rarely see or ask to see this information.

The Whitney School District almost exclusively depends on the follow up study to obtain information on the post high school experience. The theory behind the follow up study suggests that information feedback based on the post high school experiences of graduates can assist the educators in planning and operationalizing more effective educational efforts. If knowledge of what goes right or what goes wrong with the product (after it arrives on the market) does <u>not</u> reach the educator, then it becomes quite possible that the educator will continue the same practices year after year without feeling a need to change.

Generally speaking, the information cycle of the follow up study minimally ought to include the following stages: (a) a questionnaire is developed by the

Central Office or the high school covering the post high school experience of those who were in the vocational as well as the academic programs; (b) the instrument is sent to the graduates after sufficient time has passed for them to have fallen into an employment or higher education pattern--all of the sophisticated techniques apply for ensuring an adequate rate of return; (c) the information is returned to the district where it is processed, coded, distributed and stored; (d) the information arrives in the hands of teachers where it is used as data to improve the curricular program.

With the support of government funding, the Whitney School District conducted comprehensive follow up studies (academic and vocational programs) with the 1962 and 1966 graduating classes. To say the least, the 1966 study was a classic in sophistication, precision and practicality. The methodology and findings received national attention and the strategy has served as a model for a number of similar studies in other regions of the United States. A basic decision was made at Whitney in 1966 to repeat the study with every fourth graduating class. The difference would be, however, that Whitney School District would have to use its own funds in the ensuing replications.

When the 1970 follow up was supposed to have been conducted, the priority was so low that sufficient funds were not available to do a thorough survey, for example, funds were not available for everyone to receive a return stamped envelope, no phone calls could be made to non-respondents, and a second wave of questionnaires could not be sent out. A 19 percent return resulted (as opposed to over 50 percent in 1966) and the data were not processed because of the obvious inadequacy. What promised to be a valuable external feedback source across time was, in effect, strangled by a lack of priority.

The State Department of Education does require that a yearly follow up be made of students who graduate from the vocational education program, but virtu-

ally no one in the district places much faith in these data. A State Department official who also is dissatisfied with the mandated vocational study explains why.

> The timing is lousy. To meet the intent of the Vocational Act the district is required to report data by November (four months after graduation). This does not truly reflect either post secondary enrollment patterns or their labor market experience.

A Central Office administrator gave his impressions of the survey. "The purpose of this survey is to answer questions for the State Department. We receive a poor return ration (50% in 1972). Nothing goes out to students in the academic programs. In fact, if the State Department didn't require this follow up, we probably wouldn't do it because of the expense."

When administrators at the central office were asked to estimate the amount of manpower, money, and time utilized to understand and influence the character of the <u>input</u> into the district (e.g., bond elections, demographic studies, personnel interviews) versus the amount of manpower, money, and time utilized to understand and influence the character of the <u>output</u> of the school (e.g., placement, follow up studies), the typical response was many thousands to one. Few people disagreed that if a small part of priority attached to observing the inputs of the system were attached to observing the outputs of the system, a viable external feedback cycle could be established.

No yearly follow up is done on those students who pursue an academic as opposed to vocational program. Nevertheless, at Kennedy High an attempt is made to get an account of the number of students enrolling in higher education. "By the transcript requests received we estimate how many went to college," a school administrator commented. "We think it is very accurate; but to be honest with you, we don't really know." The school does not try to maintain any running statistics on trends in college attendance or vocational employment because sufficient data for this do not exist. Thus, there is no way to compare the progress of the present with that of the past.

The only systematic reporting of follow up information, therefore, comes from the yearly vocational education survey. This rather limited information flow is distributed to the teachers after it is first processed and coded at the Central Office. In the final analysis, however, the teachers and administrators have a very imprecise notion of what happens to their product.

On the vocational side, when teachers and administrators were asked if they could say whether 20 percent or 80 percent of their graduates were able to obtain work after graduation, the typical response was, "I have no idea." On the academic side, the teachers who came up with higher education enrollment figure at all placed it in a range from 40 to 80 percent. The superintendent stated a figure of 80 percent although he was careful to note, "I have not actually seen any information since the original study was conducted (in 1966) on the number that go to college, but people who should know tell me it is reasonably correct."

In brief, since 1966 the external feedback information cycle monitoring the post high school experience has tended to be less than adequate for bringing about a sense of need, or a sense of direction, for curricular change in the classroom. In searching out a reason for the low priority the comprehensive follow up study has received, a number of patterns emerged in the interviews. These patterns can be typified as follows: mobility, "It's very hard to locate the students once they leave the area;" socialization, "Two years after high school the graduates are different people altogether;" detachment, "It's not imperative to know these things to have a good school system;" finance, "It costs a lot of money;" commitment, "I'm not sure the district really wants such data because it might indicate that a lot of difficult changes are necessary."

Many of the educators at Kennedy suggest that their graduates who return for a visit represent a significant source of information on the post high school experience. "We discuss with them how realistic their training was," a department chairman commented, "and how well their high school experience prepared them.

Actually, the ones we see are the ones that liked school and did well. We don't see many of the failures come back." This type of information is here defined as affirmative feedback because the educators are receiving positive cues on the character of the training program.

The students who experience little or no success tend not to return to Kennedy. This type of negative feedback is also screened out by the administration. "We see a lot of people who drop out," the administrator said. "We run them away. They come back to hang around and see a girl or boy friend, not to see us."

In brief, the information flow which seems to be very important to the teachers in weighing their instructional program seems to be heavily balanced in favor of affirmative feedback which reinforces the existing teaching-learning process. The negative feedback tends to reach the teachers in very limited doses.

The Control Mechanism

"Indeed communication networks and the information transmitted through them" Mouzelis (1967:130) emphasizes, "are the basis of organizational decision-making and control." The control mechanism is the recipient of the three systematic information loops already defined: information on the changing nature of the market place, information comparing internal measures of student performance against predetermined objectives, and information on what happens to the output once it arrives on the market as compared with predetermined objectives. Earlier discussions pointed out that the three critical information cycles tended to break down before or after arriving at the classroom level.

Also, the control mechanism intended to receive the information is not made up of the necessary measureable objectives which can signal when and where change is necessary in the educational program. There is little debate about the traditional role that general goals and specific objectives have played not only at Whitney, but in the educational institution as a whole. On this issue a school board member commented:

> Historically, the goals and objectives were considered as an activity we must engage in and put on paper. Once on paper they can be nicely bound and we can say this is what we are doing in the district. They are then put in the bottom drawer and forgotten. This has been the history of public education. Hopefully, it is now being changed.

An example of a rather typical goal statement to be found at Kennedy is, to develop "awareness of the values inherent in our democratic society and loyalty to its underlying principles." Because there are only goals and virtually no objectives, and because the goal by definition is very general, the teacher can do almost anything in the classroom his professional standards permit and still fall within the confines of the goal. For this and other reasons, the significance of a statement of goals seems to have little meaning at Kennedy. The individual teacher senses himself to be the expert in a specific subject and on his expertise the curricular area is given direction. A question and answer session with an administrator at Kennedy seems to represent a dominant pattern of thought.

> Q. Has the school developed goals and objectives?
> A. We are going to be accredited this year and have developed goals by department, but they are only loosely coordinated with district goals at this point.
>
> Q. Could the school operate without a set of goals?
> A. Oh, we have for years.
>
> Q. Do the teachers attach much importance to the goals?
> A. No. There are many teachers, especially in the academic areas, who believe that the type of things they teach cannot be measured. They have their own private set of goals. A lot of teachers believe that goals, objectives, and the like, are things that administrators and legislators design to give them busy work to do. They feel they know what they are doing and what they are doing is good.
>
> Q. How do they know what they are doing is good?
> A. I don't know.

In terms of the conceptual framework, Whitney School District (Kennedy High and the central office) does not have an operative management information system. The implications of this finding are significant for the process of change because it suggests that the school does not have a "guidance system" to lead it toward an improved relationship with its changing environment.

It should be pointed out that numerous forces beyond the lack of information can be major contributors to a slow process of change, for example, lack of material resources, constraining state legislation, and rigid university entrance requirements. But even if these constraints were wiped out, a smoothly functioning MIS would be necessary to initiate a program of change at the classroom level which could eventually bring the high school into a close relationship with societal needs.

It might be added that the problems associated with the MIS and the process of systematic change probably go far beyond Kennedy High. It is the writers' view that these same difficulties could probably be found rooted to the core of most educational systems in the United States. This, of course, is a hypothesis which remains to be tested.

An appropriate conclusion to this study would be to define some propositions which relate to the question of why the MIS tends to be a relatively inoperative process in the educational organization.

Propositions on the MIS and Change in the Classroom

The propositions developed here are by no means intended to represent an exhaustive list, but are only those which are suggested by the data of this study.

1. Major Proposition. The receipt of the resource inputs in the school district are only marginally dependent on the success of the output of the school, therefore the district can afford to pay limited attention to what happens to its output. (Output means the post high school experience of graduates and not test scores.)

   Minor Proposition. Because the resource inputs of the school are not dependent on the output of the school, the district does not have a special need (e.g. survival) to gather precise follow up information.

Discussion. Richard Carlson pointed out earlier in this paper that as a "domesticated" organization the school has guaranteed existance and does not have to struggle for survival. In this sense, it is not unlike a local monopoly. As a domesticated organization, the school loses qualities present in the Generic

Organization Model. Because the existance of the school is guaranteed by society, the school is not compelled, for reasons of its own survival, to pursue systematically information which would enable it to change its product in relationship with the shifting needs of society. The MIS of the Generic Model, as it appears in the data and theory of this paper, can probably only function efficiently and effectively in the natural environment of a "wild" organization.

2. Major Proposition. The educators and the community think of the output of the school as the amount of learning that takes place up until the time of graduation rather than the success of the graduate at achieving satisfactory employment or successful college experience.

   Minor Proposition. The community and the State Department attempt to hold the school district accountable for the during school experience of students rather than the post school experience of graduates.

   Minor Proposition. The school district places a high priority on gathering information which meets demands for during school accountability, and a low priority on post school information which is not necessary for accountability.

3. Major Proposition. An organization with an incentive system which rewards its personnel for their own results will place a high priority on gathering information that will measure and improve those results.

   --Conversely--

   Major Proposition. An organization which primarily rewards conformity to officially established procedure will place a low priority on gathering information intended to measure and improve the results of the individual members.

   Minor Proposition. Because the educational process is cumulative from the first through the twelfth grades, it is difficult to measure and determine precisely the individual contributions of individual teachers.

   Minor Proposition. Because it is considered difficult to measure the individual contributions of individual teachers, the teachers are rewarded for conformity to officially established procedure (i.e. classroom control, record keeping).

   Minor Proposition. Because the teachers are rewarded for conformity to officially established procedures rather than their own results, the teachers feel under limited compulsion to seek out information which will help them understand their own contribution to the learning process.

Discussion. Blau and Scott (1962:166) observe that ". . .some writers have distinguished between incentive systems that reward results and those that reward conformity with officially established procedures." They cite James Worthy (in Blau and Scott, 1962:166) who states that incentive systems rewarding results, "develops initiative and self-reliance and generates a far more powerful driving force than could ever be imposed from the top down." This notion is especially important in the school district because the relative autonomy in the classroom due to teacher professionalism strictly limits any driving force from the top down. Thus, because the information gathering and utilization process is not tied into the reward structure of the teachers, there is little incentive for them to seek out better ways of performing classroom tasks.

4. Major Proposition. The organizational role of a teacher is structured to maximize conditions essential to stability and minimize conditions of instability which can lead toward change.

> Minor Proposition. To be effective, the MIS information cannot be pushed through the system from the top out of a sense of need for classroom change felt by the administration, but must be pulled through the system out of a sense of need for classroom change felt by the teachers.
>
> Minor Proposition. Because all teachers have met professional requirements for certification they consider themselves to be very good teachers, therefore, they tend to place a low priority on information which examines their instructional programs.

Discussion. Due to the informal prerogatives and professionalism of the teachers, a number of characteristics are structured into the teacher role which can screen out change oriented information. Some of the screening devices are, for example, the tradition of classroom autonomy for the teacher, the low visibility of the teacher at work in the classroom, promotion by seniority rather than merit, a social norm among educators with respect to never directly critiquing the performance of other teachers, and teacher tenure. There is no suggestion here that these organizational features are necessarily bad, only that they have the

consequence of screening out change oriented information. These features do, however, inhibit the MIS from binding the various subsystems of the school district into a collectivity capable of conducting a systematic change effort.

Conclusion

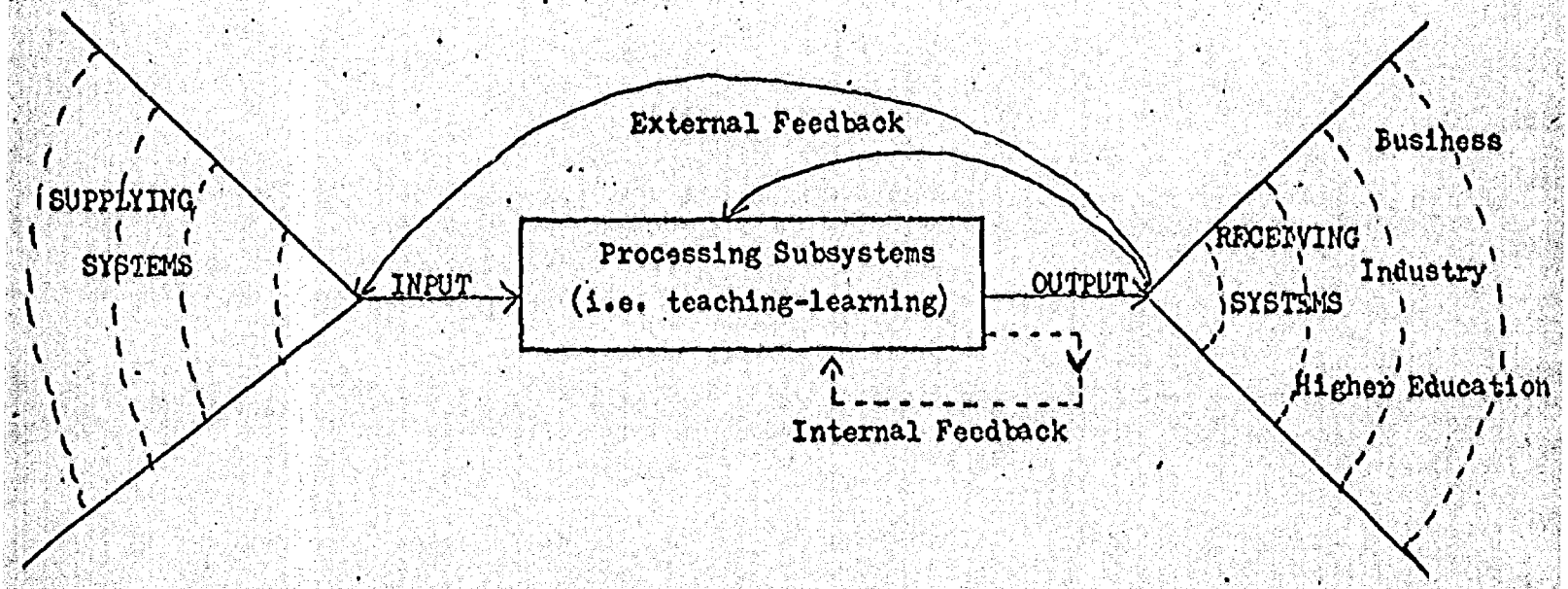
The course of this study examined the workings of the management information system which is supposed to act as a "guidance system" toward bringing about planned change in the academic process, and thus the output, of the educational organization. In the school district studied there existed a management information system with all the basic components present. However, the system was not functioning in such a way as to bring about change in the classroom that would draw the school district into a closer relationship with the needs of its market places. The nonoperational character of the MIS is attributed to specific organizational forces present in the school district which deterred the district from functioning in accord with the characteristics of the Generic Model.

The writers believe that what was observed at the Whitney School District probably could be found in school districts throughout the nation due to the fact that the organizational model for public schools tends to be very similar. This speculation, however, remains to be tested.

If the MIS is going to work as an instrument for change, it will, in the writers' opinion, have to be made operational in a school system which is significantly closer to the Generic Model than is presently the case. That means the school system will have to be invigorated with other strategies, such as: the voucher system, for turning the school into a competitive organization with no guaranteed resource inputs; PPBS, providing for measures of performance against specified objectives; and performance contracting, the creation of an incentive system rewarding results instead of conformance to established procedure. To do less than adopt some genuine modifications to the organizational processes of the school district is to assure a continued direction of the school based on crisis, conventional wisdom, and tradition.

Figure 1

The Generic Organizational Model



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