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STANFORD CENTER
FOR RESEARCH AND DEVELOPMENT
IN TEACHING

Research and Development Memorandum No. 132

A CASE STUDY OF EDUCATIONAL INNOVATION
IN A JUNIOR HIGH SCHOOL: INTERACTION
OF ENVIRONMENT AND STRUCTURE

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Stanford, California

February 1975

Introductory Statement

The Center's mission is to improve teaching in American schools. Its work is carried out through five programs:

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This report presents a case study conducted by staff members of the Environment for Teaching Program.

Abstract

The interaction of environmental and structural factors is explored in this report on a case study of innovation in a junior high school. While some analyses of organizational innovation have emphasized an organization's structure as affecting innovation, and others have emphasized the importance of environmental pressures, the interaction of these factors has rarely been studied.

It is argued here that when diffuse or ambiguous environmental pressures for substantial change are combined with a differentiated structure, the frequent result is that organizational participants develop vague, symbolic agreements. These are particularly likely to develop when there is considerable time pressure. Such agreements tend to conceal potential goal conflicts and leave technical details unclear. Attempting to implement symbolic agreements then results in unforeseen technical difficulties and conflict, frequently leading to rejection of the innovation. The paper concludes with some alternative approaches to innovation that may avoid these difficulties.

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Contents

A CASE STUDY OF EDUCATIONAL INNOVATION IN A JUNIOR HIGH SCHOOL: INTERACTION OF ENVIRONMENT AND STRUCTURE

Anneke E. Bredo and Eric R. Bredo

One of the most distinctive features of educational innovations is the rate at which they fail. If proposed, they often are not adopted; if adopted, they frequently are not fully implemented; if implemented, they rarely last. The history of educational innovation sometimes seems like the case of the desert straggler in pursuit of a mirage; in spite of great efforts, he gets no closer to his objective.

In this report we attempt to analyze some factors that may contribute to the failure of educational innovations. To do this, we focus on the case of a junior high school where attempts to implement changes met with notable lack of success. While it is risky to generalize from a case study, an analysis of the internal processes of one innovation may have implications for others, and thereby make some contribution to current thinking on organizational innovation.

Data for this study were gathered over a three-month period by means of extensive interviews with faculty and administration at the school, and through questionnaires. Nearly half of the school staff were interviewed to gain information on both the prior history of the innovation and the staff's current views of it. The questionnaires were administered to the faculty during the year when the innovation was in effect.

The major stages of the process of innovation are described; the description then serves as the basis for the more abstract discussion that follows. Five main areas are covered: (1) environmental pressures, (2) response to the pressures, (3) implementation of the innovation, (4) teacher reactions, and (5) administrative response. In

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the Discussion section the interrelations of the environmental and structural factors that affected the process of innovation are explored in greater detail, in particular the interaction of environmental pressures and the differentiated (departmentalized) structure of the school. The paper concludes with some practical and theoretical implications of the study for educational innovation.

The Setting

The school, which we will call Hillview Junior High School, is located in a middle-class suburban community. It has more than a thousand students. The faculty is divided into eleven subject-area departments, and the larger of these have department chairmen who handle a variety of administrative chores. Hillview school is regarded as a desirable teaching location, and faculty turnover in recent years has been extremely low. Prior to the innovative period discussed here, most teachers were apparently quite satisfied with both the school and its administration.

The Process of Innovation

Environmental Pressures

Pressures for innovation at Hillview came from three main sources: the public, the students, and the district office. Public criticism of schools and widespread student unrest during the late 1960's together led to a demand, at Hillview as elsewhere, for "relevant" educational programs, i.e., programs that would more closely approximate student needs. The student pressures at Hillview were a major factor in triggering emphasis on greater innovativeness.

The fundamental nature of the criticism implied that major change was required, but opinion was divided on what the nature of the change should be. The issues could in large part be reduced to the question of greater student freedom versus greater constraint, and both points of view had strong proponents.

Pressures from the district office were equally unclear. Perhaps in part as a response to parent criticism and student unrest, several administrators began to press for change, especially in the junior high schools. Both elementary and high schools in the district were seen as being flexible and receptive to change, but the junior high schools, Hillview among them, were considered "bottlenecks" with respect to educational innovation. Some offic s began to advocate innovation with enthusiasm; at Hillview, one administrator urged the faculty to change, saying "Don't be afraid to fail!"[1] Other district officials were more conservative, however, including one member who insisted on maintaining rigorous academic standards and requirements.

These somewhat divided views led to confusion over just what kind of support could be expected from the district office. Junior high schools were encouraged to become "more relevant" to their students, but at the same time not to sacrifice academic standards c change their requirements. As one Hillview faculty member put it later, "The District was speaking out of both sides of its mouth." Thus, the overall message given by the school's environment was that major change was desirable; but the nature of the change was left ambiguous.

Response to the Pressures

Increased search. Like most organizations facing problems, Hillview began to search for solutions. Hillview had a record for academic excellence and was reputed to be the most innovative of the junior high schools. Eager to retain this image, the faculty began an informal search for innovative educational practices. When one faculty member gave a glowing report of an innovative program in another school, it was received with considerable interest. Several committees, including both district representatives and Hillview faculty members, were sent to investigate the program further.

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[1]Several faculty members later remembered this as the "Go out and fail!" speech, perhaps an indication of their bitter experiences.

The school they visited had instituted two major changes: (1) increased student choice of courses and teachers by means of arena scheduling, in which students were largely responsible for making their own decisions in selecting courses, and (2) a House Plan, whereby students met regularly with a teacher in a modified home-room situation to work out their course programs and to have an opportunity for informal interaction in a friendly, casual environment. The school was relatively small, and since it had dropped all required courses, students had a great deal of autonomy in deciding their own programs. The visitors on the whole were very impressed with the way the innovation seemed to be working, though a few (including the curriculum head) had reservations.

Differing perceptions and preferences. At Hillview, reports on the program were generally well received, but different faculty members were impressed by different aspects. Some liked the new form of scheduling, others the increased student autonomy, and still others found the emphasis on affective relations with students the outstanding feature of the program. In many ways, these differences were related to differences in departmental preferences.

In the course of the innovation, we asked the following questions of teachers in the different departments: (A) "In your subject area, how do you feel about the present balance between required and elective courses at Hillview?" Response categories ranged from a preference for "many more requirements" to a preference for "many fewer requirements." (B) "For most of your courses, how long would you prefer to keep students?" Response categories were a year or more, a semester or more, a semester or less, and a quarter. (C) "Compared to teaching in a more structured classroom situation, how comfortable would you say you are with students in an informal situation?" Response categories ranged from "much less comfortable" to "much more comfortable." The results are shown in Table 1.

TABLE 1

Rankings of Departmental Preferences for Major Departments
(N = 49)

Department	Rank		
	A Requirements (1 = more required)	B How Long to Keep Students (1 = longer)	C Comfort in Informal Situations (1 = less comfort)
Foreign Language	1	1	3
Math	2	2	1
Physical Education	3	6	4
English	4	3	5
Science	5	5	2
Social Studies	6	4	6

Table 1 shows that there were relatively consistent differences across departments in orientations to each of the questions. Computation of Spearman's rho shows that rankings across departments on A and B were quite similar (rho= .80), as well as rankings on A and C (rho = .77); relations between rankings on B and C were not quite as strong (rho = .63).

The differences between departmental preferences on these issues seemed likely to affect the teachers' perceptions of the innovation. Owing to the nature of its subject matter, a department like social studies could far more easily adapt its courses to students' interests and allow student autonomy than a department with a more structured curriculum, such as math, where courses had to follow a certain sequence and requirements seemed essential. Similarly, changing students every quarter would be more problematic for more structured subjects. Differences in the extent to which faculty members felt comfortable with students in informal situations would affect their attitudes toward the House Plan, which emphasized informal situations. Thus, the structure of

the school, highly differentiated into formal departments with different
tasks, helped promote different interests and the formation of different
perceptions and preferences with respect to the innovations desired.

In addition to the differentiated structure of the school, outside
pressures and expectations facing the departments helped to reinforce
differences in teachers' perceptions. To the general public, social
studies was a relatively diffuse subject area, and could be expected to
relate to current events. Such relevance was not expected of a struc-
tured subject like math, with its more specific and abstract subject
matter; math teachers were expected instead to maintain rigorous stand-
ards. Thus, the departments faced differing expectations from their
respective sub-environments.

Early participation and planning. In light of these differences,
it is not surprising that support for the innovations at Hillview varied
a great deal. Different departments were quite differentially repre-
sented in the committees and interest groups formed to study different
aspects of the innovation. Participation was influenced by two factors:
(1) interest in the proposed changes and (2) available time. Those with
the greatest interest or the most time participated most. As a result,
many of the most influential faculty members, including several depart-
ment chairmen, did not attend the sessions because they were most
pressed for time. At the same time, members of departments with a strong
interest in the changes were over-represented. As an example, the House
committee, which soon became the most active and controversial of all
the committees, included a great many social studies members.

Questions over representativeness soon arose, particularly with
respect to the House committee, but they were not resolved to everyone's
satisfaction. The principal's response (in a memo) was that anyone con-
cerned about the issue should attend the meetings and make his views
heard; the exact legitimacy of the committees remained unclear. Mean-
while, the House committee went ahead with attempts to plan for changes
at Hillview, and became largely responsible for most of the planning
that was done.

The plans drawn up by the House committee were remarkably imprecise; they were full of ideals, but contained few specifics. In part, this can be attributed to time pressures. Since scheduling changes had to be made in early spring if the innovation were to be adopted for the coming school year, there was little time to work matters out in detail. Another reason for the vagueness and idealism of the plans may have been the desire to "sell" the plan to the rest of the faculty. The comittee's lack of legitimacy made it vulnerable to criticism, and different faculty interests made conflict likely. Concrete proposals would make the conflict between different interests too apparent; ideals were more easily agreed upon.

Selling the dream. As a result of the time pressures and the poor planning, faculty members were obliged to make decisions under very confusing conditions. Since the plans were vague and participants were given no clear alternatives from which to choose, it was not clear what support of the innovations involved. The faculty, when asked to approve the plans at a faculty meeting, did not know whether the innovations were "a package deal," so that support of one component implied support for all, or what degree of active participation was expected of them. In addition to uncertainty over the extent of their commitment, the faculty lacked information on many specific issues, such as the precise nature of the proposed scheduling system, or the exact obligations connected with having a House class.

In spite of these uncertainties, however, proponents of the innovation carried the day. In part this may have been due to the laudable goals of the proposed innovation, which were difficult to oppose, and in part to the strong approval expressed by the principal, who was well-liked and respected by his staff. Many faculty members later reported feeling that disagreement would have been equivalent to disloyalty to their school, their principal, and their professional growth, and most of them expressed support for the changes. One teacher later said, "We were told to think big and not worry about the future." Another admitted, "The school went into the changes with an 'it will work out' policy."

Implementing the Innovation

The nature of the innovation. The innovation at Hillview was systemic rather than localized; it affected all departments and almost all individual roles. Moreover, it implied a complete revamping of the school program rather than a few minor changes at a time. Indeed, few parts of the school program remained unaffected. Scheduling was changed from a semester system to a quarter system, and included double periods for all subjects (these were new to most departments). Students were to be given greater choice in selecting their program, although many requirements were retained. House periods were planned for alternate days, and were to provide counselling on students' programs and schedules as well as affective relations between teachers and students. To promote interchange between students of all grade levels, student composition of each House was to be as varied as possible. Changes were made in the counselors' roles, in report cards, and in the attendance system as well. In short, the innovation involved major reorganization of the whole school.

Technical difficulties. Faculty members returning to school in September had no clear idea of what to expect, but it did not take them long to discover the extent of their difficulties. Many specifics of the innovation had not been worked out over the summer, notably the scheduling system. Its increased technical complexity created difficulties in programming, and Hillview began the school year with only 40 percent of its students properly scheduled. As a result, House periods during the first month and often longer were fully taken up with individual scheduling problems, which was not a propitious beginning for creating an "affective atmosphere." House teachers, untrained in scheduling techniques, often felt awkard and incompetent at this new task. Moreover, when they did get around to other activities, they found they had almost no guidance on what to do with their House students, and were given no extra materials or support to help them with their new role. Many teachers soon came to look upon their House as an unwelcome extra course in an unstructured situation that they often found uncomfortable.

The general atmosphere at Hillview began to resemble that of a crisis situation, the more so because the school's policy in response to the problem was a "seat-of-the-pants," day-to-day kind of adjustment to immediate problems rather than a long-range, consistent plan for future contingencies. Teachers, overwhelmed with scheduling problems, faced an unstructured House period that they somehow had to lead, while students, often bored by lack of direction in House, responded by cutting it. Both the administration and the teachers were concerned over the growing lack of student discipline, and the school schedule was constantly being adjusted in an attempt to regain command of the situation. The innovation had got off to a very rocky start.

Conflicting goals. Technical difficulties were not the only source of problems. In some ways, the innovation itself seemed to be directed to a number of conflicting goals simultaneously. The innovation was intended to give students increased choice. However, at the district's insistence most requirements were maintained, so that student autonomy was in fact unchanged. Aside from this, it was difficult to reconcile the idea of increased student autonomy with the creation of a warm social environment in a school as large as Hillview. When students change teachers more frequently they may indeed have greater choice, but they are less likely to get to know their teachers well. In a smaller school, where students circulate among a small number of teachers, the objectives of choice and close relationships could be pursued at once with greater hope of success. The creation of a warm, supportive environment in House was hindered by the fact that it was made compulsory. The formation of a cohesive group was precluded in most cases, for students had little choice as to their teacher or classmates in a House unit and frequently resented being forced to attend. Moreover, since incentives that could promote cohesiveness, such as valued activities, were rarely provided by harried teachers untrained and unaided in their new role, House periods often became unstructured periods of boredom for students.

Teacher Reactions to the Innovation

To most Hillview teachers, the innovation was an extremely
upsetting experience, and many complained bitterly about the difficulties
it had caused. The new scheduling system had created unprecedented
technical problems, and the House Plan had led to a lack of role
clarity. Should House teachers be schedulers, group therapists,
counselors of individual students, minicourse specialists? Many
House teachers felt that having a House imposed the burden of an extra
course without extra compensation. Their feelings of injustice were
intensified by the fact that a few teachers had managed to avoid having
a House because they had not supported the idea in the spring. In the
general confusion, decision making also became much more difficult
and cumbersome than before. Faculty meetings (often ad hoc) increased
in frequency and required more time and effort from teachers, adding to
their irritation. Many felt that they had seen the future and it did
not work; they would have been glad to return to the tried and true
ways of the past.

The vehemence of many teachers' reactions to House suggests how
strongly they disliked teaching in an unstructured setting. ("My
House should be called 'Zoo'"; "It should self-destruct"; "House
is just another confrontation in a day filled with confrontations.")
Other faculty members, while often critical of some aspects of the
innovation, did not want to admit defeat. ("I am very supportive of
the original ideas behind House, and unwilling to give up.") These
teachers were harking back to the idealism attached to the proposed
innovations initially, and they continued to support the ideals despite
the problems created in implementing them. This may be an effect of
selling an innovation idealistically; some support persists, since
ideals can never be proved wrong.

Departmental differences. In many ways, the faculty's attitudes
toward House came to represent their more diffuse feelings of support
for the innovation as a whole. Table 2 shows how these attitudes
differed by departments. The more structured departments clearly
were least favorable to House.

TABLE 2

Departmental Rankings on Mean Reported Satisfaction with House

(N=49)

Department	Rank on Satisfaction (1= least satisfied)
Foreign Language	1
Math	2
English	3
Physical Education	4
Science	5
Social Studies	6

When departmental rankings on attitudes toward House (Table 2) are compared with the three rankings on preferences shown in Table 1, there are quite strong relationships across departments. The strongest predictor of attitudes toward House appears to have been preferences on the proportions of required and elective courses. These preferences varied systematically by department with attitudes toward House, and the rank orders are almost identical (rho=.97). Preferences on how long to keep students also show rankings very similar to attitudes toward House (rho=.89). Comfort with students in informal situations is a somewhat weaker predictor of attitudes toward House (rho = .74). From this comparison, it seems clear that teachers in the more structured, sequenced curricular areas were least favorable to this type of innovation.

Rankings of the major departments on their influence in determining policies, reportedly by the teachers in those departments (Table 3), also show interesting relationships to departmental attitudes toward House. The most influential departments (math and social studies) are practically at opposite poles in their attitudes toward the innovation.

Thus, it is not surprising that there was considerable tension and conflict between members of different departments.

TABLE 3

Departmental Rankings on Mean Reported Departmental Influence

(N=49)

Department	Rank on Influence (1= most influential)
Social Studies	1
Math	2
Science	3
English	4
Foreign Language	5
Physical Education	6

Criticism of the administration. As the crisis continued, more and more teachers became critical of the way the innovations were being implemented, and began to direct their criticism to the administration. Their statements convey a feeling of injustice. ("In previous years changes seemed to have a sense of legitimacy, but this year's innovations have a sense of imposition"; "The administration's lack of success in planning has increased. Those in charge of the innovation have presumed too much on the goodwill of Hillview teachers to help them out of the crises that the innovations have created.")

There were conflicting views on what the administration's role should be, however. Some felt that their current predicament pointed to a need for greater faculty participation in decision making, to ensure that such injustices would not be perpetrated again. Others looked for stronger leadership from the principal, feeling that it should be his role to deal with the problem rather than leaving decisions to the

teachers. ("There is too much decision making. Somewhere in the administration some decisions should be made for us." "Planning is too democratic. Are not administrators trained to organize schools in efficient patterns? Why let the staff vote itself into a noose?") Sometimes both views were expressed simultaneously in a single statement. ("We are lacking a quality of leadership. The faculty doesn't have any sense of participation in the decisions that are made.")

Administrative Response

The dilemma in leadership. The conflicting expectations of the teachers posed a difficult dilemma for the principal. Since the faculty were not united in their views, it was difficult to exert strong leadership; no matter what position he took, he was bound to offend some teachers further, something he could ill afford to do. On the other hand, the greater the chaos became, the greater also was the need to "pull things together" and make decisions that would resolve the difficulties. For a man who until this year had been a highly respected, well-liked principal, the unaccustomed criticism was a very uncomfortable experience.

Response to the dilemma. The principal by this point had used up much of his credit with the faculty. Perhaps for that reason, he did not take a strong public stand for or against the innovation, but instead responded with a number of interim measures which helped avert criticism and allowed him to ride out the storm.

One approach was to seek stronger support for the innovation from district administrators and, in so doing, to increase its legitimacy in the teachers' eyes. This measure met with little success. District backing was confined to encouragement and personal expressions of support. Another approach was to extend participation in the decision-making process on all fronts, including parents and students, and to increase the extent to which the principal consulted the faculty in making decisions. However, while this made decision making more representative, it also increased the variety of ideas

that had to be considered and took an inordinate amount of time, so
that decision making became even more confused than before, and
criticism of the principal's leadership grew rather than diminished.

The principal also extended the power and prominence of the faculty
senate, which served as an additional way of spreading the responsibility
for making decisions, and could be seen as a means of gaining the
approval of influential faculty members. At the same time, however,
he appeared to the faculty to be ambivalent about his own role, so the
members of the senate were never fully certain of the full extent of
their powers. These ambivalent attitudes made it difficult for the
faculty to know what to expect, and again served to intensify their
demands for stronger and more consistent leadership.

Support for an outside evaluation of the innovation proved to be
a more effective approach. It diverted attention from the school's
immediate problems and the principal's role in them. The evaluation
itself helped to clarify the way in which the school had "got itself
into this mess," and gave school members more systematic information
on faculty views of the innovation.

The End of the Innovation

The evaluation (carried out by the authors) established the fact
that most of the faculty members were heartily tired of the innovation,
although they still had different views of the value of its intended
goals. Overall the reaction was a shift toward greater conservatism,
with a "never again" attitude toward radical, system-wide change. The
innovation was dropped in its entirety at the end of the school year,
and by the following year there was little evidence to show that it had
ever taken place. Teachers were happier, their tasks were again
relatively stable and predictable, and the school had almost completely
returned to its old ways.

Discussion

The Interaction of Environment and Structure

This case study shows that the interaction of environmental pressures with the organizational characteristics of a school may have a profound effect on the process by which an innovation is planned and implemented, and on its eventual success or failure. In the case of Hillview, environmental demands were directed toward fundamental changes, but they were also vague, ambiguous, or even contradictory, and it was left to school members to decide on the nature of the changes. If the external forces had been united in demanding a specific change, the school would not have faced such a difficult problem in deciding what kind of response to make.

Two organizational characteristics of the school affecting its response to ambiguous and conflicting stimuli were (1) the limited power of its chief administrator and (2) its differentiated (departmentalized) structure. These together served to rule out a uniform, harmonious reaction to the pressures. Like most school administrators (although unlike head administrators in some other types of organizations), the Hillview principal was quite dependent on the goodwill of his faculty and could not simply impose his ideas upon them. He also was unable to fire those who might oppose him, and, since the school was a desirable place to teach, faculty members were loath to transfer. Owing to such limited administrative power, decision making had to be opened up to wider participation, including teachers who might not share common views.

A differentiated organizational structure, exemplified at Hillview by departmentalization, is frequently associated with the development of differences in preferences and attitudes among individuals in the various departments (Lawrence and Lorsch, 1967; March and Simon, 1958). This was certainly the case at Hillview, where departments had very different preferences regarding a number of issues quite closely related to the innovation (Table 1). Under some conditions, however, potential

differences may not become activated. When the problem is ambiguous
or unfamiliar the implications for existing interest groups may be
unclear, and the effect may be for potential differences to become
muted. By contrast, when an issue is familiar and clearly specified,
it may be seen as obviously partisan and may pit one department or
interest group against another, accentuating the differences between the
groups. At Hillview, the diffuse, ambiguous pressures for change led
to an agreement to "go along," and did not activate potentially con-
flicting interests. Thus, rather than resulting in bargaining between
articulated and recognized interest groups, the diffuse pressures
prompted a generally receptive, if unfocused, response from the faculty.

The vague and idealistic plans that were developed were not only
a result of an ambiguous problem, but were also caused by time
limitations and the expectation of potential conflicts arising from
the school's structure. Strong pressures to reach some kind of agreement
in time to implement the innovation by the following school year meant
that faculty members developing the plans had little time to work out
specific details. Moreover, doing so might have made differences
between them more obvious, particularly in light of the different
departmental preferences, and thereby have threatened agreement. The
end product was a vague plan couched in idealistic terms with which
few could disagree, and that therefore would "sell" to the whole of the
faculty. Hillview teachers in effect made a symbolic agreement to
"go with the plan," even though it was not at all clear what it entailed.

Symbolic agreements of this type, in which ideals are agreed upon
in lieu of a specific plan, appear most likely to be made when there
are potentially divergent interests; tenuous bonds between participants,
who are loosely allied in a common endeavor; and limited time for
reaching agreement. They are sufficiently vague to allow latitude for
each participant to imagine that his own preferences are represented.
Rather than reconciling divergent interests, symbolic agreements merely
tend to defer the time when differences have to be resolved. Similarly,
the vague and general nature of symbolic agreements makes them capable
of tolerating considerable inconsistency with respect to means or

procedures, an inconsistency that only becomes apparent when there is an attempt to put the "plans" into operation.

Two types of difficulties are likely to emerge when symbolic agreements have been made the basis for action: (1) unsolved technical difficulties and (2) unresolved goal conflicts. Technical difficulties place additional burdens on members of the organization and add to the confusion in their work, which often makes the innovation less desirable to them. In the attempts to resolve these difficulties, decisions have to be made that were previously deferred, and in the process latent conflicts are often brought out. At Hillview, implementation difficulties produced interdepartmental conflict and a sense of injustice over the unexpected burdens. Many of the participants withdrew support from the innovation with the claim that they had not realized what they were getting into, and began to question the legitimacy of the process by which the decision to innovate was made in the first place.

Deferring decisions until an innovation is under way usually means that time pressures increase, since the luxury of a planning phase no longer exists. Time limitations then have the effect of reducing participation in decision making, thus strengthening the sense of injustice felt by those not making the decisions. At Hillview, this resulted in a seemingly paradoxical call for both stronger leadership and more participation, and ultimately, in the collapse of the attempt at innovation.

Figure 1 summarizes much of the argument to this point.

Figure 1

Interaction of Environment and Structure on the Process of Innovation
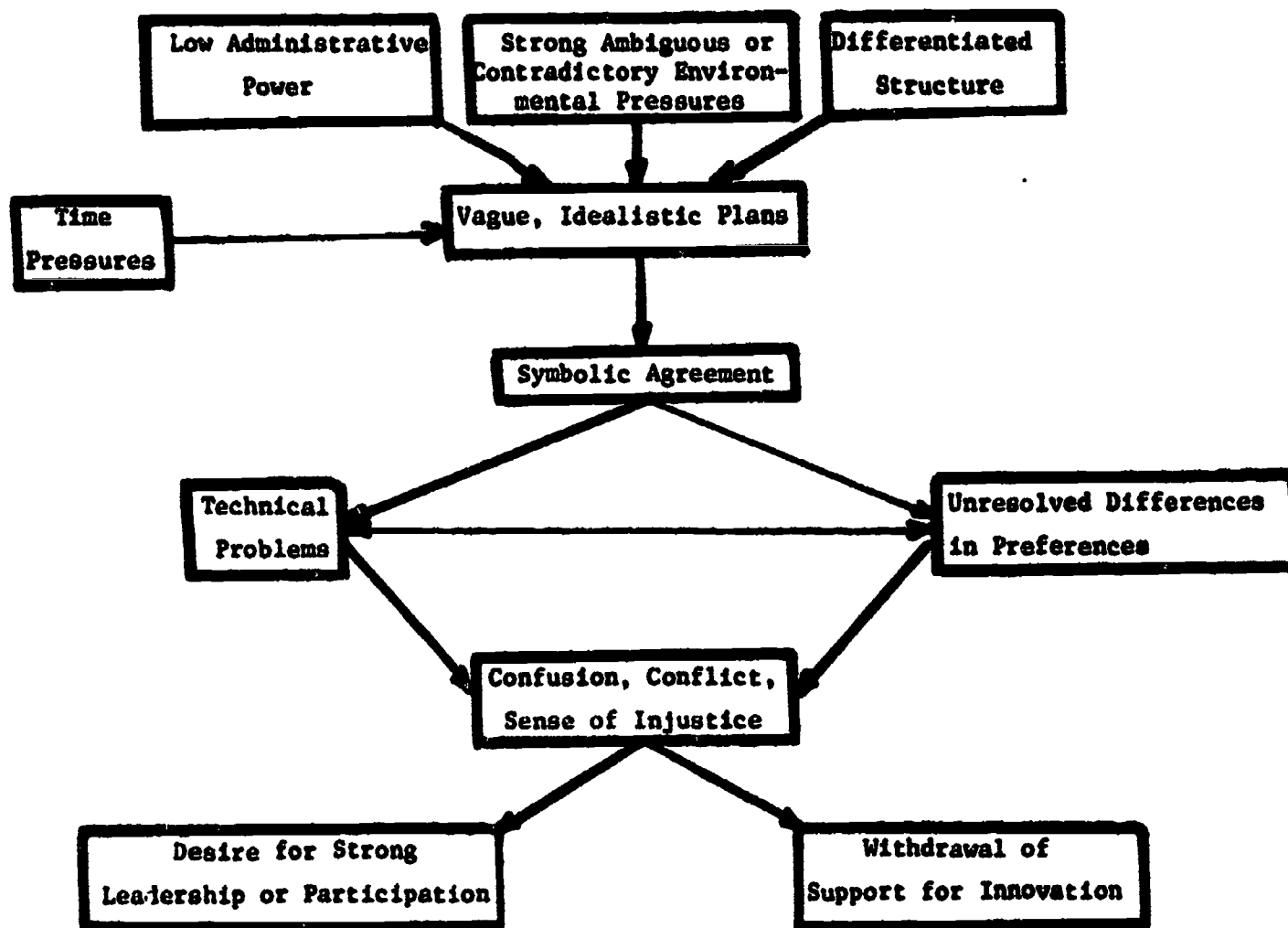
What might have been done differently at Hillview and with better results? We suggest two alternative approaches to innovation and some possibly effective means of improving coordination and reducing conflict.

Alternative Approaches to Innovation

Incrementalism. One approach to innovation is to introduce changes more gradually, on an incremental basis. When only minor innovations are made at any one time, more time and resources are available to deal with difficulties as they arise. At Hillview, many facets of the school were changed, and problems of all kinds emerged at the same time. Small changes are less difficult to sell, so that the cycle of exuberant early idealism and subsequent disappointment can more successfully be avoided. External pressures for major change can easily lead to overreaction, which in retrospect seems to have occurred at Hillview. The school would certainly have done better with a series of successful small changes than with one large failure.

Incrementalism seems a particularly useful strategy in situations where (1) environmental demands are for specific changes, (2) consequences of proposed changes are unknown, or (3) time pressures preclude careful planning. When specific changes are implemented one at a time, adaptation is made easier, and the likelihood of major confusion and conflict is reduced. If the consequences of the changes cannot be ascertained in advance, incrementalism provides greater safety. The success of each minor change can be evaluated, and if the results are unexpectedly negative, they are at least limited in scope. When time pressures are too great to work out careful plans for a major change, especially in cases where divergent interests are involved, incrementalism again seems preferable, since less time is required to plan for a few minor changes in any one period.

Localized change. Another alternative to major systemic change is the strategy of localizing the change to only a part of an organization or to a subset of its members. Even major changes can be made much more easily if only small units are involved, since coordination and decision-making difficulties are reduced. Localized change also means

that different preferences and commitments can be taken into account--
only those who want to, need be involved--and potential conflict can be
avoided.

Localized change might be a useful strategy where (1) there are
external demands for fundamental change, (2) the organization is highly
differentiated and composed of relatively strong interest groups, and
(3) there is insufficient time to work out the differences between
different interests. At Hillview, where all three of these conditions
existed at once, systemic change magnified different preferences into
major conflicts of interests, antagonized those adversely affected by
the innovation, and created major rifts between opposing factions. If
only those who are committed to making a change are included as parti-
cipants, such conflicts are less likely to arise. Moreover, it allows
for a "trial" of the change on a smaller scale. The rest of the school
faculty could, for instance, adopt a "wait and see" attitude while some
of their colleagues tried out a new innovation.

Ways of Reducing Problems of Coordination and Conflict

Both of the strategies outlined above represent ways of minimizing
interdependence between organizational members or subunits: incre-
mentalism limits the total number of task areas affected, and localized
change limits the number of members or subunits affected. However, at
times an organization may decide to go ahead with major system-wide
changes, either through ignorance of the potential problems or from a
conviction that the pressures for such change are so great as to allow
no other choice. If such a decision is made, there are still a number
of ways in which the problems of coordination and conflict resulting
from increased interdependence may be reduced. The most important of
these are: (1) planning, (2) strong administrative leadership, and (3)
increased participation and communication.

Planning. Planning may simplify the implementation process of
innovation by providing procedures and programs to deal with contin-
gencies before they occur, so that the need for spur-of-the-moment
problem solving and decision making is reduced. In addition, clear

plans make explicit the commitment or contract of each participant, so that later questions over legitimacy or perceived injustices are less likely. The limitations of this approach are that a great deal of time is often required to work out detailed plans for a major change, and that the implications and consequences of the change must be clear beforehand to permit appropriate provision for contingencies. If time is short and outcomes are difficult to anticipate, as was true at Hillview, planning is less likely to be effective.

Strong administrative leadership. Strong administrative leadership may be an effective approach to implementing major change, particularly in the case of resistance from some of the organization's members. Administrators may bolster their position by enlisting increased support from superiors (in the case of schools, from the district office), in the form of policy commitments, resources, or enhanced formal powers. If such support is not forthcoming, and if an administrator is weak or no longer has the confidence of the staff, attempts to impose changes are not likely to meet with success.

Increased participation and communication. Increasing participation in the decision-making process often has the effect of increasing the legitimacy of the decisions to the participants. Thus, when individuals have taken part in a decision to make a change they are less likely to oppose the change later, and the chance of conflict is reduced. Increased participation also has some drawbacks, however. It tends to make the decision-making process rather cumbersome. With an increased number of individuals, the extent of communication and the number of different opinions is also increased, and a great deal of time may be needed to take all of the different views into account, resolve the differences, and reach a solution. At times such a solution may not be reached at all, as the Hillview example shows. Thus increased participation requires considerable time as well as some way of reducing the number of choices and of clarifying proposals.

Conclusions

Many studies have examined the effects of environmental pressures
or of organizational structure on innovation. While our study deals with
both of these factors, it is less concerned with their independent
effects than with the way their interaction may help determine the
process of innovation, affecting the type of innovation that is adopted,
the way it is implemented, and the response to its attempted implementation.
The Hillview case study has documented an example of an innovative
process that was strongly, and adversely, affected by the interaction of
these factors. Diffuse pressures for major change were imposed upon a
differentiated structure with weak leadership, resulting in a poorly
articulated response, and, ultimately, in the rejection of the innovation.
A similar process may have led to the failure of many other educational
innovations.

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