COMMUNICATION OF AN EDUCATIONAL INNOVATION IN AN INSTITUTION OF HIGHER LEARNING

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This is to certify that the

thesis entitled

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IN AN INSTITUTION OF HIGHER LEARNING

presented by

William Grant Mitchell

has been accepted towards fulfillment
of the requirements for

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Date June 11, 1970

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Accepted by the faculty of the Department of Communication, College of Communication Arts, Michigan State University, in partial fulfillment of the requirements for the Doctor of Philosophy degree.

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ABSTRACT

COMMUNICATION OF AN EDUCATIONAL INNOVATION
IN AN INSTITUTION OF HIGHER LEARNING

By

William Grant Mitchell

The study reported here was designed to investigate the developmental process or life cycle of an educational innovation. It investigated the inception, diffusion, adoption and later modification and partial discontinuance of this educational innovation in a regional university in an attempt to better understand this process in a complex organization. The particular innovation studied was that of a curriculum change, instituting a general education system known as "the Common Learning" at Northern Michigan University.

While the curriculum change itself was the primary innovation studied, certain sub-innovations made in connection with the Common Learning were studied; chiefly that of the introduction of educational television as a teaching method in two of the course sequences. Also, the innovative organizational structure was considered, together with its effect on the total process.

The study was carried out as a participant-observer field study, utilizing as tools of study: 1. Non-reactive measures such as reports, memos, newspaper stories and historical records; 2. A questionnaire designed to, a. survey patterns of information flow

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within the organization at two time periods (before and after the formal adoption of the innovation), and b. test the perceptions of a change agent group by its clients; 3. Focused interviews with persons in a position to understand and interpret what took place during the planning stage, adoption of the innovation, its later utilization and final partial discontinuance.

An explanatory scheme was employed which involved certain aspects of the concepts of decision theory, general systems theory, and cybernetics -- as well as the findings of research on individual innovation behavior and the behavior of complex organizations -- to interpret and combine the results of the three methods of investigation noted above concerning the life cycle of the innovation.

As a result of this study, 15 tentative generalizations have been drawn, and presented as conclusions of the present study and as suggested working hypotheses for later investigation or for other researchers. These generalizations detail the operation of the process of innovation decision-making in the subject university during the life cycle of this innovation. Also, it appears that the method employed in the present study is a workable one for exploring the innovation decision-making process in complex organizations.

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Finally, the present study clearly points to the need for considerable additional research into the process of innovation decision-making in complex organizations. More research is needed to verify or reject the tentative generalizations mentioned above; to sample the communication flow within an organization during more periods within the life cycle of an innovation; to test the reactions of the larger organizational system to the introduction of the innovation, and the larger system's effect on the innovation; and finally to explore the personal characteristics of those identified as liaison persons or opinion leaders in the innovative structure.

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INTRODUCTION: THE PROBLEM

The Problem of Change or Innovation:

Innovation, or change, with all its implications, may well be the dominant characteristic of our age. Oppenheimer (1964, p. 115) put it this way:

> This world of ours is a new world, in which the unity of knowledge, the nature of human communities, the order of society, the order of ideas, the very nature of society and culture have changed, and will not return to what they have been in the past. . . . One thing that is new is the prevalence of newness, the changing scale and scope of change itself, so that the years of a man's life measure not some small growth or rearrangement or modernization of what he has learned in childhood, but a great upheaval!

Nowhere is the effect of change more evident than in the American institutions of higher learning. Changes of all kinds are sweeping our campuses today, as they are our society itself. And yet these institutions of higher learning often seem to find themselves unable or unwilling to adapt to changing conditions. An important question today, according to Cooper (1966, p. 44), is:

> Amidst these great social and intellectual forces now unleased in the world, will our present colleges and universities be swept along into hasty or irrational expedients, or will they gain command of the situation and by their efforts conquer them? . . . How can we initiate educational change congruent with the realities of the modern world and do so in a fashion that is orderly, rational, and constructive?

In this same vein, Eurich (1968, p. 4, 5) adds:

> The University, in short, has changed the world, but has not had the nerve to adapt itself to the new world which it has created. . . . Our educational system, as a whole, lags behind other institutions in our society in the use of technology. But within this backward sector, higher education is probably the most backward of all.

But some innovations do occur; we need better understanding of such innovations and the means by which they are brought about.

Innovation and Change in a Regional University:

The present study investigated the inception, diffusion, adoption, and later partial discontinuance of an educational innovation in a regional University in order to better understand this process of educational innovation decision-making in higher education. Rogers (1966) declares that such studies have been carried out in only a few cases in elementary and secondary education, and very infrequently, if at all, in higher education. Lin et al (1966, p. 4) also state:

> In reviewing the literature on educational change, it became clear that evidence on this problem was inadequate. The few available studies dealt mainly with the diffusion of innovation among schools. . . . The available studies did not make clear what indicators or factors might be associated with the successful introduction and utilization of an innovation within a school.

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The particular case of educational innovation being studied was that of a curriculum change program known as the "Common Learning" at Northern Michigan University. This program was being discussed and planned as early as 1962 and planning continued through 1965. The courses were first presented to students in the fall of 1966. This program continued, with the modifications and partial discontinuances mentioned above, through the time of this investigation. Thus it offered a viable subject for study.

While the curriculum of the Common Learning program itself was the primary innovation studied, certain other sub-innovations made in connection with this curriculum change were considered in this study. Some of the methods by which the program was taught were innovative. Two of the three sequences of courses were taught by means of an "instructional system" of media and methods, including educational television, discussion, laboratory work, and outside reading, as well as various visual aids. In the beginning, the third sequence of courses was taught altogether by conventional means, but later added innovative methods in certain courses, including "mirror" television and large group lecture-small group discussion. Mirror TV was used to help instruct students in oral communication, Humanities I.

The organizational structure of the total program of the Common Learning was also innovative; in the beginning the program was

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under the direction of a "Dean of Common Learning" and committees and coordinators for each of the three sequences (Mathematics-Natural Science, Social Science, and Humanities). However, it had no faculty of its own, responsible directly to the Dean. Instead, faculty were and are assigned to the departments who cooperate in the presentation of the program; they were and are responsible directly to their own disciplinary departmental heads. The flow of information and communication in this situation was unusual and seemed to have a considerable effect on the modification and partial discontinuance of the innovations used after the original decision to adopt was made. Later, the organizational structure described above was altered significantly. Additional coordinators were appointed, and the position of Dean was left vacant. The associate dean of Arts and Science administered the program. Still later, an associate dean of Common Learning was appointed under the Dean of Arts and Science.

The innovations noted above were adopted into an "open system" in an educational ecology much like that of other medium-sized institutions of higher learning throughout the United States. The students in this institution were average in ability, the faculty overall seemed no more or less inclined to be innovative than the average faculty, and the institution seemed no more nor less able to initiate change in terms of its economic capability or philosophical inclination than average. Thus the results of this study may be widely appli-

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Overview of the Study:

The study of the innovation described above was carried out by participant observation, using three primary techniques of investigation: 1. A study of the historical aspects of the process of the innovation, employing University records, campus newspaper accounts, and other non-reactive measures; 2. A mailed questionnaire designed to determine, (a) who talked with whom at two stages of the process of innovation, and (b) the faculty's perceptions of the activities of a change agent group; and 3. A series of focused interviews with persons in positions to have been aware of the events which took place -- these interviews were designed to determine the opinions and attitudes of these key persons in regard to the innovation.

The historical portion of the study, carried out using University records and other non-reactive measures, gave an overview of the process of the innovation. Against this background, the various decisions which were taken and the information flow which led to the decisions were evaluated. The focused interviews gave another balancing factor to this study -- that of the opinions and perceptions of individuals closely involved with the innovation in a variety of roles during its progress.

To determine the interaction and information exchange patterns which existed, the results of the questionnaire were analyzed and compared. Matrices were constructed to determine reciprocal communication between members of the institution at two time periods. This method also identified "totally communicant" groups within the University, and determined liaison role individuals with numerous reciprocated contacts among the groups.

Client perceptions of a change agent group are important to the effectiveness of that group. For this reason, the second part of the questionnaire probed faculty opinions concerning "proper" responsibilities for the Instructional Communications Department before and after the adoption of the Common Learning, and whether the faculty perceived the group as having carried out these activities.

The results of the above facets of the study were treated by means of an explanatory scheme consisting of elements of decision theory and cybernetics. A concept called "least negative fit" was also used to account for some of the happenings in the process of innovation. The decision-points which occurred both before and after the original, formal adoption decision were considered to determine the effect of the choices made at these times on the overall process of the educational innovation.

CHAPTER II

THEORETIC RATIONALE

As stated in the introduction, it seems that a need for studies concerning the process of innovation diffusion in organizational settings exists. This need seems to be especially pressing in educational organizations. The importance of organizational diffusion studies was pointed out by Carlson (1968) in a summary of research needs in educational innovation.

In fact, it appears that there is a dearth of research into the diffusion of innovation within any sort of complex organization. Rogers with Shoemaker (1970, chap. X) tell us that:

> The Diffusion Documents Center at Michigan State University contains more than 1,200 publications dealing with the spread and acceptance of new ideas. Most of these studies are concerned with the individual adoption of innovations. . . . Most empirical research on diffusion concentrates almost exclusively on the individual as the unit of adoption because the innovations which excite the interests of modern researchers tended to be appropriate for individual use. . . . This chapter was written under the assumption that: (1) It is worthwhile to explore the process of diffusion of innovations, or change, from the viewpoint of the organizations which adopt them, as well as the individual member's viewpoint, and (2) Behavior of organizations and of individuals who make up these organizations forms a unified whole capable of being studied and worthy of attention.

Organizational Innovation:

Innovation within complex organizations (such as Universities) is in reality a type of organizational decision-making. Rogers with Shoemaker (1970, Chap. I) called the process involved in individual innovation diffusion the innovation-decision process. They point out four functions in this process: 1. Knowledge (awareness), 2. persuasion (attitude formation and/or change), 3. decision (adoption), and 4. confirmation (reinforcement). It appears that the innovation diffusion process in organizations might equally well be considered a type of innovation-decision making, involving similar stages or functions to those noted above. It is clear, however, that these functions would be more complex, involving, as they would, many people in the organizational setting. All of these functions require communication of various sorts for their successful consummation. Thus research into the types, directions, and personnel engaged in such communication in an organizational innovative-decision process would seem to be a worthwhile study. It should reveal differences as well as points of similarity with the functions of individual decision-making.

Carlson (1968, p. 8, 16) reinforces this viewpoint by saying:

> Adoption decision-making in complex organizations must differ in some important ways from individual adoption

> decision-making. Those who study educational innovations have an opportunity to make a substantial contribution to knowledge of diffusion by describing the way in which adoption decisions are made in complex organizations, but so far they have failed to do this. . . . The fact that school systems are complex organizations has been generally overlooked. Even though a complex organization is the adopting unit few attempts have been made to move organizational theory into the area of diffusion study.

Therefore an important factor which needs to be considered in studying an innovation in an organization appears to be the type of decision process involved. Evidence exists that this decision process is very important to the later development of the innovation, and to its continuance or discontinuance as a practice. Rogers with Shoemaker (1970, Chap. X) point out that:

> Generally, the fastest rate of adoption of innovations can be by authority decision (in which the adoption is decided by the administration). . . Although made more rapidly, authority decisions are more likely to be circumvented and may eventually lead to a high rate of discontinuance of the innovation. Where change depends on compliance under public surveillance, it is not likely to remain once the surveillance is removed. . . So authority innovation-decisions often result in a rapid rate of adoption, but in a relatively low <u>quality</u> decision, that cannot effectively be put into action, at least over an extended period of time.

Rogers with Shoemaker (1970, Chap. X), as well as Lin et al (1966), propose a taxonomy of innovative decision types, as follows:

1. Optional decisions, which are made by individuals, and may be made without regard to the decisions of others in the social system;
2. Contingent decisions, made by individuals, but which can only be made after the social system has made a prior innovative-decision;

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3. Collective decisions, which are those which individuals in the social system agree to make by consensus (and which, therefore, according to Lin et al, are actually social system decisions); and finally, 4. Authority decisions, which are those "forced on the individual by someone in a superordinate power position, such as a supervisor, in a bureaucratic organization." It is obvious that the individual has little to say about the latter type of innovation-decision. Rogers with Shoemaker (1970, Chap. X) state: "Few research studies have yet been conducted of this type of innovation-decision, which must be a very common one in an organizational society such as the U.S. today."

However, it is possible that, in the long run, individual instructors do have a great deal to say about the innovation-decision (even in the authority decision form), in terms of whether or not it continues unchanged or whether it is discontinued altogether after a period of compliance. Individual faculty members, for example, have many ways of avoiding compliance with a mandate to teach using any given method of instruction when they do not agree -- or are dissonant -- with it. In fact, as operational decisions are made about how to use the innovation, a process similar to what Alexander (1964) calls "least negative fit" may come to modify the original decision. That is, small modifications may be made, not necessarily designed so much as to "improve" the operation as to

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minimize the perceived misfits of it. Again, in terms of dissonance or balance theory (Festinger, 1957, Osgood and Tannenbaum, 1955, Heider, 1958), such individuals could be expected to: 1. strive to change the innovation so that they would no longer be dissonant, or 2. change their opinions to fit the innovation.

Concerning faculty acceptance of an innovation, Lin et al (1966, p. 60) designate what they consider an important dependent variable in innovation research -- innovation internalization. This concept is defined as follows: "Innovation internalization is defined as the extent to which a teacher perceived the innovation as relevant and valuable to his role performance in the school. In other words, it is the degree of a teacher's attitudinal acceptance of a specific innovation." Thus, an important factor to be considered in the process of innovation would be the attitudes of the individual faculty members. The above writers state (p. 60), "It is evident that innovation internalization is a crucial factor in educational change research . . ."

Lin et al (1966, p. 67) also reported that another dependent variable was important in determining the progress and consequences of innovation in education. This was what these researchers called "change orientation, defined as an individual's degree of general predisposition toward change." The importance of this predisposition seems evident, and did indeed prove to be so in the Lin study.

A corollary to the change orientation of the individual would seem to be the general change orientation of the organization itself. Rogers (1962) and Rogers with Shoemaker (1970) point out that the degree of traditional or modern orientation in societies and communities has a definite effect on the rate of innovation adoption; it seems reasonable to think that organizations such as universities should also have such system biases. This factor and individual faculty opinions were investigated in the present study, in the historical analysis and the focused interviews.

Concerning the organizational orientation to change, Evans (1968, p. 2, 3) states:

> Past investigations by behavioral scientists and others interested in the dynamics of change have shown that social institutions rarely include mechanisms for facilitating change. Definitions of social institutions most commonly stress their enduring and perpetuating aspects. Not surprisingly, then, the greatest resistance to change will be found in those institutions whose traditional, primary function has been the perpetuation of a society's folkways, mores, and values, such as religious and educational institutions. Paradoxically, the common assumption is that educational institutions, since they are charged with imparting both old and new knowledge to the young, must themselves be highly dynamic, with frequent changes in teaching methods as well as content. . . . In general, changes in educational methods have been exceedingly slow, due primarily to the climate of resistance and the educators' often outright hostility toward change.

A Systems-Process Viewpoint:

It appears that a theoretically profitable method of doing a study of innovative decision-making in an organization would be

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from a system-process viewpoint. This would be done by studying the whole development process of the innovation-decision in its natural setting (i.e., its ecological background), and by following the innovation through its "life cycle." This concept was suggested by Carlson (1965, p. 4). Such an approach fits well with the systems approach thinking which is espoused by Katz and Kahn (1966), Ashby (1958), Berrient (1968), Churchman (1968), Grinker (1956), Miller (1955, 1965), Von Bertalanffy (1955, 1962), Weiner (1964), and others. (See General Systems Theory, later in this chapter.) To again quote Carlson (1968, p. 4):

> To begin, let me remind you that the terms 'adoption' and 'diffusion' describe only a very narrow slice of the world of change in education. One way to think about this change process is to focus on what has been called the natural history of an educational innovation. This natural history, or life cycle of an innovation (underline by the present writer), must consist of the story of the invention, development, promotion, adoption, diffusion, and demise of the innovation, along with an account of the problems encountered and solutions developed in introducing and maintaining the innovation in the school setting, and the unanticipated consequences growing out of its use.

It is further postulated that a cybernetic, systems approach to the study of innovation diffusion in an organization is necessary, since the complexity of the innovation decision process in an organization such as a University is too great for explanatory schemes based on an analysis of the individual parts of the process and their functioning (though such an analysis seems to have been fruitful in

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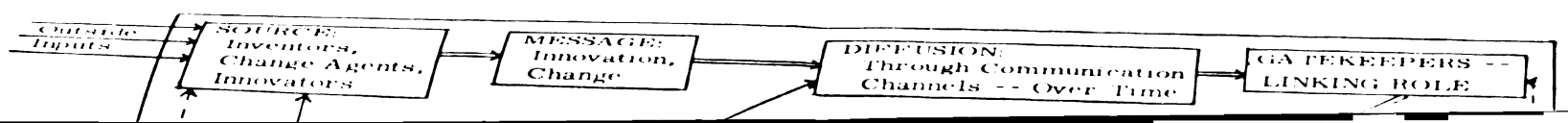
studying the diffusion of innovations among individuals). Along this line of thought, Rapoport and Horvath (1968, p. 73) point out that:

> The key concept is organized complexity as exemplified by, say, a living organism or any organized collection of entities, that is, a collection of entities interconnected by a complex net of relations, as distinguished from (1) organized simplicity and (2) chaotic complexity. . . . As soon as strict sequential or linear additivity is transcended, an organized system becomes rapidly more complex, usually too complex for detailed analysis into superposable parts or effects.

Therefore, the format of the present study has been predicated on the usefulness of an exploration of the events in a process of innovation decision making within an institution of higher learning. A systems-process model illustrating this approach is shown as Figure 1. It is adapted from information drawn from Rogers with Shoemaker (1970), Lin et al (1966), Berlo (1962), and Griffiths (1959).

Linking Roles:

One factor in the ecological "life cycle" of an innovation is particularly relevant to communication research. That is the role which key individuals in organizations seem to play in the innovation-decision-making process. These key individuals might be called "gatekeepers," following the terminology used by Lewin (1958, p. 197-211) in a World War II study of the dietary choices of families which were regulated by the housewives, or might be said to carry out liaison roles.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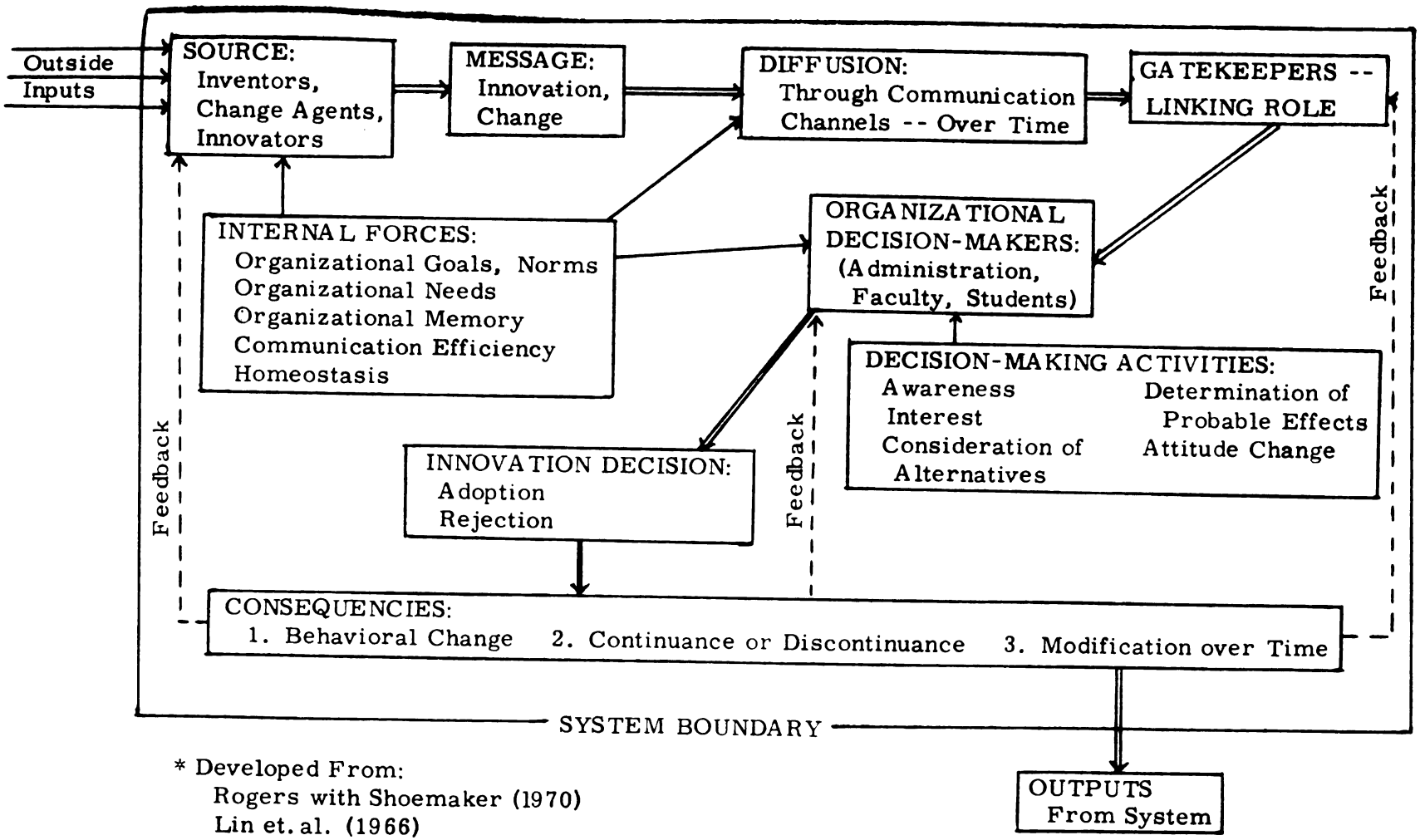

* Developed From:
Rogers with Shoemaker (1970)
Lin et. al. (1966)
Berlo (1960)
Griffiths (1959)

Figure 1-- A SYSTEMS-PROCESS MODEL OF INNOVATION DECISION-MAKING
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Organizational gatekeepers are those who regulate and control the flow of information in the system. They may be the same as or similar to liaison persons who link groups within the organizational structure, perform a legitimizing function and also regulate the flow of information. All of their complex activities influence the results of the innovation decision-making process. Lippitt and Havelock (1968, p. 20) in a talk on research utilization, called the role played by such individuals the "linking role" and called for more research on the effect of this role in the organizations. Rogers and Jain (1968) speak of "liaison" individuals, and point out that these people may link two or more cliques within a system. They state that the use of a "who-to-whom" matrix, coupled with matrix multiplication, can locate these liaison individuals. "One may then proceed to determine the characteristics of these liaison persons, who act as 'diffusion gatekeepers'" (p. 73).

Liaison individuals may or may not also be opinion leaders, but administrative leadership is quite important. The importance of such leadership in an institution of higher learning was pointed out by Splete (1968), who studied the role of the academic vice president at Syracue University. This administrator had a marked effect on the progress of innovations in his institution. He did this by linking various groups in the organization.

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Open system

A research focus on the role of liaison individuals was initiated by Jacobson and Seashore (1951), and followed by Weiss and Jacobson (1955). These researchers investigated organizations from the viewpoint of communications, and described the relationship of persons they call "liaison persons" with the organization. They stated that persons carrying out this liaison function have many, frequent, reciprocated and important contacts (or communications) which cut across the group structure. As a result, these liaison persons are in important positions to influence or control the flow of messages (communication) between groups, or cliques. It is easy to see that such persons must exercise a certain control over the diffusion of innovations, and over the fate of the innovations once they have been adopted. Thus they appear pertinent to an investigation such as the present one.

Innovation-Diffusion as a Communication Process:

Such studies as the present one on innovation diffusion in higher education certainly are within the province of the communication researcher. This is true for several reasons. First, from a systems viewpoint, organizational systems use information as a major regulator of their functioning. For example, Katz and Kahn (1966, Chap. 2) define organizations from an "open system" stance (Open systems receive inputs from the environment and produce

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outputs to it.), characterizing an organization as both an energy and an informational system, with the function of the informational system being the management of the system as a whole. Many writers on organizational structure and function agree that communication is essential to the functioning of complex organizations.

It also seems that a study of the process of diffusion, or change, is well within the realm of communication study. Rogers and Jain (1968, p. 82) declare:

> There is hardly any need at this point to discuss the importance of communication in the diffusion process. Diffusion is a communication process. It is that subset of communication which deals with messages that are new ideas, or innovations. . . . More specifically, certain aspects of the communication process in any organization seem crucial for the understanding and predicting of the diffusion of innovations. These aspects are (1) the amount of relevant communication, (2) direction of communication, and (3) asymmetry of communication.

Rogers with Shoemaker (1970) compare the innovation diffusion process with the communication process as outlined by Berlo (1960) in his SMCR model. They found the processes much the same if an E for effect were added to Berlo's model. However, the innovation diffusion process takes place over time, therefore this factor must be considered.

Planned Change

A part of the present study involves the activities of a change agent group (Instructional Communications) in helping to bring about

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the adoption of a sub-innovation -- that of television teaching. This is, of course, related to the whole concept of planned change in organizations and societies. The idea that we may be able to plan change so that it will occur in a rational and controlled manner is a very attractive one.

Definition of Planned Change:

The term "planned change" strikes one as somewhat akin to social engineering. Bennis (1966, p. 81, 82), writing about "changing organizations," has the following to say about the subject:

> Planned change is a method which employs social technology to solve the problems of society. The method encompasses the application of systematic and appropriate knowledge to human affairs for the purposes of creating intelligent action and choices. . . . Thus planned change can be viewed as a crucial link between theory and practice, between knowledge and action. . . .
>
> The process of planned change involves a change-agent, who is typically a behavioral scientist brought in to help a client-system, which refers to the target of change. The change-agent, in collaboration with the client-system, attempts to apply valid knowledge to the client's problems. These four elements in combination -- change-agent, client-system, valid knowledge and a deliberate and collaborative relationship -- circumscribe the class of activities referred to as "planned change." These four elements also help distinguish planned change from other forms of change.

Chin (1967, p. 333) gives a similar definition of the concept of planned change in the following:

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> Planned change is defined as a deliberate and collaborative process involving change agents and client systems. These systems are brought together to solve a problem or more generally to plan and attain an improved state of functioning in the client system by utilizing and applying valid knowledge. Planned change is implemented because of the quality of relationship between the change agent and the client system. This approach does not assume that the change agent has a solution he must get across to the client, and yet it does not reject the fact that the change agent does have some specialized valid knowledge about new technology and procedure.

Change Agents:

The activity of a change-agent group within organizations is important in bringing about planned organizational change. Rogers with Shoemaker (1970, Chapter 1, p. 49) state that:

> A change agent is a professional who influences innovation-decisions in a direction deemed desirable by a change agency. He usually seeks to obtain the adoption of new ideas, but he may also attempt to slow down diffusion and prevent the adoption of undesirable innovations. Change agents often use opinion leaders within a given school system to prime the pump of planned change.

Lippitt and Havelock (1968, p. 47, 49) have underlined this type of what they call a "linking role," as follows:

> Earlier we suggested that there may be critical individuals who can be termed "change agents," who are outside the consuming system, and that there might be other critical individuals inside. I think that we are gradually moving toward a conception of a linking role, or a knowledge linking role, a defined position within our social system which can be filled by a variety of individuals, but which maintains a link between potential consumers (of new ideas) and expert resources, and does this self-consciously and perhaps even on a full-time basis.

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Miller (1967, p. 372) agrees with the above position, and advocates it for education:

> Pharmaceutical houses have detail men who introduce new drugs and medicines to the doctors. County agricultural agents have been instrumental over the years in persuading farmers to try new ideas and seeds. . . . A middle man -- one between the idea or program and its implementation -- is eminently sound. Clearly education needs a similar expertise -- change agents or "educational engineers". . . . A first order of business, however, is learning how to develop change agents.

Thus, the role of a change agent group in a complex organization in which a process of educational change is taking place would be worthy of research and analysis. However, not only the actual role but the perceptions of this role by other members of the organization during the development of the innovation would appear to be important, and within the province of a study of educational innovation. In fact, such perceptions may be the key factor in the success of the change agent.

Change Agent Strategies:

Since change-agentry appears to be a significant means of achieving planned change, a word is in order concerning the role and strategy of such change agents. Cooper (1966) points to seven such change agent strategies, which may be listed as follows:

1. The change agent should identify the characteristics and needs of the client system and base plans on them.

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2. The change agent should seek, and play a major role in, the establishment of rapport and the building of mutual trust and respect between the client system and itself.
3. The change agent should view the change process as a mutual, collaborative, reciprocal undertaking between the client system and itself.
4. The change agent should identify key leaders, formal and informal, in the client system and work through them.
5. The change agent should understand the communication-diffusion of innovations process and utilize it in a strategy in working with the client system.
6. The change agent should seek continued self-improvement in performing its role.
7. The change agent should teach the clients to be their own change agents, to understand the process of change, to develop self-renewing behavior.

Cooper (1966) also states that, in his view, the activities of an institutional change agent are basically no different from those of an individual change agent. Such a simplistic view may be extreme in that it does not consider the many complexities of institutional organizations. Nevertheless, there may be enough similarity so that the successful activities of countless county agents and their supporting state specialists in agricultural extension services should be worth the study of those interested in organizational improvement.

Along with the establishment of a change agent group in a university, Rogers (1968) points to several other strategies for change, many of which might be carried out by the change agent group itself. These are: 1. Develop and select innovations for the large university that have a clear-cut relative advantage and test their effectiveness under operational conditions before adopting

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them on a widespread scale; 2. Establish an organized procedure of informing those at the top, accurately and rapidly, of the needs for change at the lower levels of the hierarchy, and the actual consequences of innovations that are introduced; 3. Utilize personnel recruitment, selection, and training policies that encourage development of a staff oriented to innovative approaches; and 4. Utilize informal interpersonal channels of communication to diffuse innovations.

In spite of the optimistic statements above, in discussing the activities of change agents, Lippitt, Watson and Westley (1958, p. 65) point to some potential problems in the role of these specialists. These writers state:

> In the first place, the diagnostic orientation of the change agent is in many ways self-fulfilling. If he looks for difficulties in communication, for example, he will find them; and if his help is directed toward improving communication patterns, success will demonstrate to the client system that a solution of communication problems necessarily results in a more satisfactory state of affairs. . . . But in addition to organizing new forces which challenge the status quo and impel the client system toward change, the change agent usually gives active help in the process of change itself. He helps the client system to meet the challenge which he himself may have originated....
>
> One of the important questions about any process of change is whether or not the change which has been accomplished will remain stable and permanent characteristic of the system. Too often change which has been produced by painstaking and costly efforts tends to disappear after the change effort ceases, and the system, which wanted to change, slips back instead into its old ways.

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Educational change agents, when and if they become established, would be well advised to be on their guard against such problems as those listed above.

Research on Educational Change

Since this is a study of innovation in an institution of higher learning, a short review of educational innovation is in order. It is evident from a study of the literature on educational change that quite a body of research has been carried out on educational change and innovation. The pace of such studies is probably accelerating today. It is impossible to mention here all the studies which have been made.

It is possible, however, to evalute the extent and quality of such studies. In his summary and critique of educational diffusion research, Carlson (1968, p. 26) has the following comments concerning this research tradition:

> I have placed more emphasis on the deficiencies than I have on the results. This was done because of what I consider to be the magnitude of the deficiencies. Deficiencies noted include: (1) large variation in the meaning of acceptance of an innovation, (2) inadequate documentation of the fact of acceptance of an innovation, (3) insufficient attention paid to time of adoption, (4) failure to carefully identify the essential elements of an innovation and test whether or not all essential elements were present in scoring an adoption, and (5) the absence of a classification scheme of innovations which would permit comparisons of what now exist as discreet studies.

> In addition I have noted in the research literature a lack of concern with organizational theory even though users of educational innovations are either part of complex organizations or are complex organizations. Furthermore, extremely limited attention has been given to the roles of communications, social structure, and values systems in research on educational innovations.

Rogers and Jain (1968) also reflect the view that more research in diffusion of educational innovations needs to be done within organizational structures. They call for methodology in such research which emphasizes what they call relational analysis, in which the unit of analysis is a dyadic pair, a sociometric chain, or cliques or sub-systems as indicated by a matrix of communication relationships. A large portion of the present study is devoted to this type of analysis. These writers add (p. 98):

> We need to examine the effect of such communication variables as the amount of relevant communication, direction of communication patterns (downward, upward, or horizontal), and the asymmetry of communication flows. . . . (Also) we have often ignored the study of consequences variables which reflect the effects of innovation. We need to analyze such consequences variables as the productivity and quality, efficiency, morale, self-renewal, etc. Thus we need to enlarge our model of diffusion research in several directions: to include a class of more ultimate dependent variables dealing with innovation consequences, and also toward including social structural variables.

In discussing the literature on educational innovation, Lin et al (1966, p. 11) are also critical of the research which has been done in this field. These writers say:

> Although <u>improved</u> practices and innovations are desirable, there is no guarantee that the diffusion of an educational

> innovation will be a smooth, successful process. How can an innovation be introduced so that it will be maximally accepted by teachers? In reviewing the literature on educational change, it became obvious that evidence on this problem was inadequate. The few available studies dealt mainly with the diffusion of innovations among schools. Given, however, that a school had adopted an innovation, the question of how well the innovation was actually accepted and effectively used in the school still remained. The available studies did not make clear what indicators or factors might be associated with the successful introduction and utilization of an innovation within a school.

In spite of the rather pessimistic statements about educational diffusion research, such research has a rather long history, and a large number of such studies have, and are, being made. Rogers (1962) points out that educational innovation studies are among the six research traditions in the field of innovation diffusion. In fact, at that time, education had done more studies than any of the other traditions except rural sociology.

Carlson (1968, p. 2) also points out that quite a number of diffusion studies have been made in education. He explains that:

> Research on adoption of educational innovations has a rather long history. Throughout this history diffusion research has been most closely associated with the speciality in education called educational administration. It seems fair to say that the diffusion literature is as sophisticated and as well developed as any other area of scientific study to which those in educational administration have given their attention. This observation, however, should not be interpreted as laudatory. . . .
>
> Far more than in any other academic field, the history of diffusion research in education has been tied to one man, Paul Mort. Probably eighty to eighty-five percent of the

> work done was done under his direction at Teachers College, Columbia, from the late thirties to the early sixties, and virtually all of the research was carried out by his doctoral students.

In regard to the above, Rogers (1962) points out the work of Mort and his students also, but comments that very little cross-fertilization (if indeed, any at all) took place between this tradition and other diffusion research traditions. However, it seems at present that this fault is being remedied. Such meetings as the National Conference on Diffusion of Educational Ideas (1968) are bringing together scientists from various disciplines. It can be expected that diffusion research in the future will benefit from such cross-disciplinary fertilization.

To summarize, then, while a good bit of research on educational diffusion has been done, several commentors feel that a good deal of research still remains to be done in this area of innovation diffusion.

Rationale for Explanation of Data

It is useful and profitable in theory to explore the developmental "life cycle" of an educational innovation in an institution of higher learning by the historical survey and interview techniques described in the Methods Chapter. Nevertheless, it is obvious that some unifying scheme for the explanation of the phenomena observed is necessary if a coherent pattern is to be teased out of the situation

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which has validity and which might lend insight into similar situations of innovation diffusion elsewhere. The rationale presented here for such explanation draws primarily from two bodies of thought and study: 1. decision theory, and 2. general systems or cybernetic theory.

Decision Theory:

It is obvious that the diffusion process has at its heart decision-making, since each adopter (whether an individual or an organization) must make a decision to adopt the innovation. But decisions made to adopt an innovation are not the only decisions made in innovation-decision making. In the first place, decisions are made about which of a wide range of possible innovations to consider. Then planning decisions must be made in regard to the use of the innovation in one's own situation. After adoption, other decisions are made as to whether to continue or discontinue the innovation in following time periods, or whether to modify it in various regards.

The fact of the importance of decision-making to innovation diffusion has been noted by Rogers with Shoemaker (1970), as noted above, who have retermed the individual adoption process the innovation decision process. There seems every reason to believe that organizations, when they are the unit of adoption, would go through

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or follow similar functions to those noted by Rogers with Shoemaker, although they would doubtless be much more complex. The importance of innovation decision-making is also pointed up by Lin et al (1966), and by Carlson (1968). Carlson (p. 7) says: "There is concern about how school people or school systems go about making a decision. . . . The educational literature is strangely silent on the matter of the adoption decision."

As noted earlier in this document, Rogers and his fellow workers have specified four types of innovation-decision processes, in a continuum from voluntary individual decisions to organizational decisions which require the compliance of members of the organization. These four types of decision are: 1. Optional decisions, 2. Contingent decisions, 3. Collective decisions, and 4. Authority decisions.

No matter what type of decision is involved, however, several factors seem to be common in the process of decision-making. As Edwards and Tversky (1967, p. 7) point out, each decision-making case has two variables in common: 1. the utility of the chosen alternatives as perceived by the decision maker or makers, and 2. the probability of the choice. These are suggested as intervening variables in the decision process. Of course, the probability of the choice is strongly affected by the perceived utility or attractiveness of the chosen alternative. Savage (1954)

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ermed this factor the subjective expected utility. This subjective xpected utility, perceived utility, or attractiveness of an alter- ative appears to be strongly influenced, in turn, by the amount f information and the quality of information available to the hoicemaker concerning the alternatives involved in the decision.

Thus it may well be argued that the direction of the choice nd the quality of the choice in innovation decision making are both lirectly related to the amount and quality of the information (and its adequate communication) available to the decision maker or makers. Even after the original decision to adopt is made, the level (amount) and quality of information and communication concerning the innovation is crucial to its continuation and stability. The writing of Festinger (1957), Osgood and Tannenbaum (1955), Heider (1958), Newcomb (1953) and others concerning "balance theory" suggest that the alternative chosen at the first decision point in innovation adoption (which is usually considered the adoption of the innovation) is not the end of the matter; instead, adopters continue to seek information which tends to confirm or disconfirm the original adoption decision. In fact, the search for information about the chosen alternative may increase after the decision (Festinger, 1957).

Also, decisions of other levels may arise; for example, in the case of an innovation in education, decisions would be necessary

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Concerning such sequences of decisions as described above, Edwards (1967, p. 84) tells us:

> In real life decisions occur in sequences, and information available for later decisions is likely to be contingent on the nature and consequences of earlier ones. The study of decision processes in such changing situations might be called the study of dynamic decision making. Two cases can be distinguished. In one, the most frequently studied, the environment is (stochastically) unchanging, but the decision maker's information changes as a result of successive decisions, other events, or both. In the other, little studied because of its complexity, the environment changes its characteristics while the decision maker is obtaining information about it.

Thus, instead of a single decision-point -- the original adoption -- there appears to be a whole series or sequence of decision-points of varying magnitude and range of effect which occur throughout the "life cycle" of the innovation. A diagram might be drawn indicating the path of such decision making among alternatives; this diagram would effectively plot the development and alteration of the innovation throughout its life. It is postulated that each of the decision-points would be influenced by, and the quality of the decision made would be determined by, the amount and quality of the information available to the decision-maker at that decision point.

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ıl Systems Theory:

One of the theoretic areas best able to add new insight into
ıdy of organizational innovation decision-making is that of
l systems theory. The general systems theorist sees organi-
ı and societies, as well as living organisms, as cybernetic
ıs, complete with life histories, or with "life cycles." These
s have boundaries, and organization or structure; they seek
ıtasis or a steady state, or at very least system mainten-
ınd they are subject to internal stresses; they receive inputs
ıe environment, and have outputs into it; and they require the
energy and especially information to establish order against
. (See Von Bertalanffy [1956, 1962], Ashby [1958], Grinker
Hall & Fagan [1968], Miller [1955, 1965], and Weiner [1964].)
f all, they are seen as being controlled by information ex-
in some form, just as information in neural impulses govern
ıtrol the living human body. In such a "living organization,"
is necessary or decay sets in. Anatol Rapoport (1968, p.
eclares that:

> A whole which functions as a whole by virtue of the inter-dependence of its parts is called a system, and the method which aims at discovering how this is brought about in the widest variety of systems has been called general systems theory. General systems theory seeks to classify systems by the way their components are organized (interrelated) and to derive "laws" or typical patterns of behavior, for the different classes of systems singled out by the taxonomy.

> (P. XIX, XX) Cybernetics is the science of communication and control. . . . Certain methods of studying behavior apply to all organized "living" or "non-living" systems, namely inquires concerning the structure of the system, in particular the means by which it is enabled to receive, to store, to process, and to recall information; inquires concerning the functioning of the system, in particular the way in which, by processed and stored information, the system responds by "behavior outputs" to "sensory inputs" from the environment; and finally, inquires concerning the evolution of a system type.

From the above it is easy to see that a study of the change

volution of systems is a vital part of general systems study.

ct, one writer commenting on change as related to systems

s that change is a vital process to the survival of such systems.

allader (1959, p. 437, 438) tells us that:

> An open system, whether social or biological, in a changing environment either changes or perishes. In such a case, the only avenue to survival is change. The capacity to persist through a change of structure and behavior has been called "ultrastability." If a complex social organization is to survive critical changes in its environment, it can do so only by changing its structure and behavior. . . .
>
> By common convention, we are used to thinking in terms of individual human beings as inventing or innovating, but not of social groups. But it is valid to talk about innovations produced by a social organization taken as a whole, and this is not to deny the fact of individual innovation. Any such system capable of purposeful problem solving behavior and of learning from the past and innovating for the future is an ultrastable system.

Anatol Rapoport (1968) has some definitions, quoted above,

are valuable in assessing the applicability of systems theory

inquiry concerning organizational innovation. Rapoport tells

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at general systems theory seeks to classify systems in terms
interrelation of their parts, and their behavior. It inquires
he structure, functioning and evolution of systems.

It is obvious that a body of theory devoted to the study of
variables is applicable to the study of innovative change in
zations, which are, of course, systems under Rapoport's
ion. The productiveness of such a viewpoint is stressed by
inson (1967), who says that from bureaucracy to cybernetics,
ed to begin to see people and institutions not as static entities
systems in flux.

Of course, institutions of higher learning, such as we are
ned with in this study, are clearly "organizations," and so
e to treatment by the percepts of general systems theory, as
s other organization theory. Carlson (1968, p. 16) makes this
n the following way:

> The fact that school systems are organizations has been largely overlooked. Even though a complex organization is the adopting unit, few attempts have been made to move organizational theory into the area of diffusion studies. . . . I am further saddened by the lack of concern with organizational theory because it is on this score that I believe those doing research on diffusion of educational innovations can make a significant contribution to the total field of diffusion studies. Most research on diffusion has its setting in other than complex organizations.

To again quote from Rapoport (1968, p. XX, XXI):

> Once it is recognized that the structure, function, and evolution (or being, acting and becoming) are fundamental

> aspects of all organized systems, the concepts of organism can be broadened still further to include, for example, whole complexes of living organisms plus the inanimate artifacts functionally related to their structure, behavior and development. Such are societies, conceived in the broadest sense. . . . Human social aggregates (families, institutions, communities, nations) exhibit all of the features of organized systems.

If we accept the position of these writers, and approach the
of educational innovation from a systems viewpoint, what
this viewpoint reveal to us? Obviously, it would help us in
l ways. As noted above by Rapoport, general system theory
cerned with evolution and development (change, or innovation)
tems. Innovation is a communication process (Rogers and
1968), thus the transfer of information in systems is impor-
As we have seen, Norbert Weiner (1964) believes that con-
information feedback is the main function in cybernetics,
re should exist a close correspondence between cybernetics,
s theory, and innovation diffusion. Systems theorists treat
l stress and balance, input through the boundaries of the sys-
resistance to change known as homeostasis or steady state,
nsider development in a system as a process concept.
While there is definite heuristic value in a large number of
cepts and in the terminology of the general systems theorists
se interested in innovation diffusion, it would appear that
articular general systems concepts would be most helpful in

explaining innovation diffusion. These are: 1. The idea of the control, regulation and modification of systems by information flow; 2. The idea of homeostasis or "steady state" maintenance, together with the accompanying concept of balanced internal stresses; and finally, 3. The view that systems show adaptation to the environment in which they operate -- the ecological concept, which seems to have been borrowed from biology. Let us examine these three concepts in turn.

As noted above, Norbert Weiner (1964, p. 23-29) based the primary idea of cybernetics on the control of organizations, machine, and organisms by means of the feedback of information. Katz and Kahn (1966, p. 223), in discussing the place of communication in organizational systems, say that:

> In this sense, communication -- the exchange of information and the transmission of meaning -- is the very essence of a social system or an organization. The input of physical energy is dependent upon information about it, and the input of human energy is made possible through communicative acts. . . . The closer one gets to the organizational center of control and decision-making, the more pronounced is the emphasis on information exchange. . . . Human organizations are informational as well as energic systems, and both the exchange of energy and the exchange of information must be considered in order to understand the functioning of organizations. . . . In other words, information transmission is significant for what it implies, triggers, or controls.

Cadwallader (1959, p. 438) also comments on this view of the importance of feedback in organizational life, in the following manner:

> Any organization that is to change through learning and innovation, that is, to be ultrastable, must contain very specific feedback mechanisms, a certain variety of information, and certain kinds of input, channel, storage, and decision-making facilities. . . . In addition to the requisite structural components . . . the communication net must contain or acquire information that makes learning and innovating behavior possible. . . . Innovation by any system is subject to the limitations and possibilities established by the quantity and variety of information present in it at a particular time and by information available to it from the environment. . . . In order to innovate, the system must be able to analyze information, that is, must separate it into constituent parts. In a social system, this is a consequence of certain explicit operating rules about what can and should be done, by whom, when, and why.

Deutsch (1968, p. 391) also has something to add to the idea

rning (and thus innovating) in social systems and organizations.

s it this way:

> Simple learning is goal seeking feedback, as in a homing torpedo. It consists of adjusting responses, so as to reach a goal situation of a type which is given once and for all by certain internal arrangements of the (communication) net; these arrangements remain fixed throughout its life. A more complex type of learning is the self-modifying or <u>goal changing</u> feedback. It includes feedback readjustments also of those internal arrangements which implied its original goal, so that the net will change its goal, or set itself new goals which it will now have to reach if its disequilibrium is to be lessened. Goal changing feedback contrasts, therefore, with Aristotelian teleology, in which each thing was supposed to be characterized by its unchanging telos, but has its parallels in Darwinian evolution.

Concerning the process of "learning" (and of course, we may

nd innovation") in organizations, or systems, Norbert Weiner

p. 44) has the following to say:

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> An organized system may be said to be one which transforms a certain incoming message into an outgoing message according to some principle of transformation. If this principle of transformation is subject to a certain criterion of merit of performance, and if the method of transformation is adjusted so as to tend to improve the performance of the system according to the criterion, the system is said to learn.

Miller (1955) points to the effect of information flow and exchange on the concept of the system itself. He tells us that the process of coding provides the link between energy theory and information theory. That is, energy transmission is uncoded behavior; informtion transfer is coded behavior. Of course learning, as noted above, is one result of information transfer, and may lead to behavior change and innovation. Therefore, we see that the theory of information exchange and the control of organizations by information flow can be an important concept in studying change and innovation.

Another concept of system theory which has potential importance in understanding innovation diffusion in organizations such as institutions of higher learning is that of homeostasis, or "steady state." We have already discussed the ideas of Cadwallader concerning the "ultrastable system" which maintains its fundamental structure and integrity by changing to meet strains and stresses. In this way, its fundamental nature and entity remains the same, even though other aspects change. This same theme is voiced by Lippitt, Watson and Westley (1958, p. 10), as follows:

> We need always to remember that when examined closely all dynamic systems reveal a continuous process of change -- adaptation, adjustment, reorganization . . . But it is equally true . . . that all these systems exhibit a high degree of stability, constancy, or rigidity, in many aspects of their operation and organization. Often, as external observers, we can note that this stability is very uncomfortable or even dangerous not only for the system in question but for its neighboring systems. In other words, the natural dynamic processes of change do not occur fast enough to keep pace with the very rapidly changing conditions of the world today.

In spite of the fact that these writers feel organizations need to change, the fact is that they instead tend to remain quite stable. In fact, much of the feedback of information through such systems is designed to help them do just that -- maintain the system in its "normal" state, to fight against "disrupting changes." The concept which describes this tendency has been taken from the biological world, and thus has often been called homeostasis. Rapoport and Horvath (1968, p. 75) tell us that:

> There is some sense in considering a real organization as an organism, that is, there is reason to believe that this comparison need not be a sterile metaphorical analogy, such as was common in scholastic speculation about the body politic. Quasi-biological functions are demonstrable in organizations. They maintain themselves, they sometimes reproduce or metasticise; they respond to stresses; they age; they die.

It is the maintenance and responses to stress which interest us here. As a matter of fact, the homeostasis concept in systems theory should be viewed not as a static state but as a dynamic one

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of continual adjustments to internal and external stresses. This is made clear by Buckley (1967, p. 52), in the following:

> Thus it can be argued that, far from seeing any principle of "inertia" operating in complex adaptive systems, with "tension" occurring only occasionally or residually as a "disturbing" factor, we must see some level of tension as characteristic of and vital to such systems though it may manifest itself as now destructive, now constructive.

According to Deutsch (1951), it is a different thing to say that a system is in equilibrium and to say that it is what Cadwallader called "ultrastable." Equilibrium theories, according to Deutsch, are based on the restricted field of "steady state dynamics" in physics, and are not well suited to deal with transient events or to predict the consequences of sudden changes. He states (p. 198): "Altogether, in the world of equilibrium theory, there is no growth, no evolution, no sudden changes, no efficient prediction of the consequences of 'friction' over time."

Buckley (1967, p. 130) points out that structures of systems do tend to change, and that this is, actually, adaptation to the environment. He explains it in the following way:

> Structure is never self-maintaining; a constant expenditure of energy of some kind is required to maintain any open system's "steady state." . . . This means, not only that any given social structure must always fail, to some degree, to define, specify, or provide adequately for some exigencies or unstructured events, but that it will itself positively generate such exigencies; conflicts of interest, ambiguous standards, role discrepancies, and failure to achieve goals.

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> In an open system, then, the "normal operation" of its institutions constantly generates an input of variety and strains thereby contributing to a continuous process of "structure-elaboration" and reorganization. Not only are such inputs normal to such a system, they are inherent features contributing to, though not guaranteeing, its viability.

It cannot be denied, however, that organizations do have a "steady state-like" resistance to change. This is especially true of educational systems. Griffiths (1964, p. 425, 430) sees this resistance as related to societal goals:

> A social organization is the structural mechanism employed by a society to achieve one or more of its accepted goals. Since the goals do not change noticeably and each organization's activities are rather closely demarcated, any particular organization comes into existence with a great deal of stability. This stability is so great as to constitute a powerful resistance to change. On the other hand, it is clear that organizations do change. . . . It is proposed that systems theory serve as a model for a theory of administrative change.

The above discussion brings us naturally to the third feature of systems theory which seems important to students of change. That, of course, is the adaptation of systems to their environment; the idea of "ecology" in the biological sense, in which the system is a part of its environment, influenced by it and exerting an influence upon it. This view has been expressed or implied by several of the above quoted writers.

Buckley, in discussing the current general systems research, tells us that one feature of such research is a gradual development

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of a general paradigm of the basic mechanisms underlying the evolution of complex adaptive systems, such as we have discussed earlier in this paper. Buckley (1968, p. 493, 494) continues:

> Persistence or continuity of an adaptive system may require, as a necessary condition, change in its structure, the degree of change being a complex function of the internal state of the system, the state of its relevant environment, and the nature of the interchange between the two. . . . The highest level adaptive system -- the socio-cultural -- is capable of an even more rapid and refined mapping of the environment (including the social and non-social environment, as well as at least some aspects of its internal state) since socio-cultural structures are partially independent of both ontogenetic and phylogenetic structures, and the mappings of many individuals are selectively pooled and stored extra-somatically and made available to the system units as they enter and develop within the system.

In another book, Buckley (1967, p. 206) makes the following elaborations of the above statements:

> Modern systems analysis suggests that a sociocultural system with high adaptive potential, or integration as we might call it, requires some optimum level of both stability and flexibility. . . . A central feature of the complex adaptive system is its capacity to persist or develop by changing its own structure, sometimes in fundamental ways.

Another pair of writers who have noted the adaptive ability of open systems is Katz and Kahn (1966, p. 28), who state:

> Open system theory, with its entropy assumption, emphasizes the close relationship between a structure and its supporting environment, in that without continued inputs the structure would soon run down. . . . The feedback principle has to do with information input, which is a special kind of energic importation, a kind of signal to the system about environmental conditions and about the functioning of the system in relation to its environment. The feedback of such information enables the system to correct for its own malfunctioning

> or for changes in the environment, and thus to maintain a steady state or homeostasis. This is a dynamic rather than a static balance, however. Open systems are not at rest but tend toward differentiation and elaboration, both because of subsystem dynamics and because of the relationship between growth and survival.

Robert N. Lehrer (1965), in speaking of the management of improvement in organizations, takes into account the relationship between a system and its environment, also. Lehrer (p. 173) says:

> The correct approach (to improvement) will depend not only upon basic considerations of organizational and human behavior, but also upon the specific situation confronting the organization. The "personality" of the organization, the social and work mores, and the present organizational pattern . . . will have a profound effect upon what is a correct or profitable course of action.

Katz and Kahn (1966, p. 91-92), writing on organizational change, have some insights into what they call "the adaptive function" in organizations. These writers point out that:

> The adaptive function, like the maintenance function, is directed toward the survival of the organization. . . . The adaptive function can move, however, in both directions. It can strive to attain control over external forces and maintain predictability for its operations in this fashion, or it can seek internal modifications of its own organizational structure to meet the needs of a changing world. Both tendencies will be at work in some organizations and the apparent illogic of organizational action is sometimes due to the compromises effected between these opposing trends.

Before leaving the concept of adaptation to the environment, let us consider what is involved in the environment of a given

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organization. For an insight into what is involved here, let us turn to a discussion by Hall and Fagan (1958, p. 83, 84):

> For a given system, the environment is a set of objects a change in whose attributes affect the system, and also those objects whose attributes are changed by the behavior of the system. . . . To completely specify an environment one needs to know all the factors that affect or are affected by a system; this problem is in general as difficult as the specification of the system itself. As in any scientific activity, one includes in the universe of the system and environment all those objects which he feels are the most important, and describes the inter-relationships as thoroughly as possible and pays closest attention to those attributes of most interest, neglecting those attributes which do not play essential roles.

Unfortunately, the adaptation of systems to the needs of the environment is not always perfect. Organizations, like people, are likely to react in non-adaptive ways to the necessity for change. Bennis and Slater (1968), in The Temporary Society, state this proposition in the following way (p. 107, 108):

> Modern organizations, even more than individuals, are acutely vulnerable to the problem of responding flexibly and appropriately to new information. Symptoms of maladaptive responses, at the extremes, are: (1) a guarded, frozen, rigid response, denying the presence or avoiding the recognition of changes, resulting most typically in organizational paralysis, or (2) susceptibility to change resulting in a spastic, unreliable faddism.
>
> There is no easy solution to the tension between stability and change. We are not yet an emotionally adaptive society, though we are as close to having become one as any society in history.

There is, therefore, always the possibility that a system will not adapt properly, or quickly enough to the demands upon it for

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change. This is especially true of educational organizations today, when they are pressed for change from every side. On the other hand, perhaps too many changes would destroy the system. Vickers, in an article titled "Is Adaptability Enough?" (1968), makes the following statements:

> (P. 468) One danger is that the society may fail to adapt itself to the changes and may break down. The other is that the society will adapt itself only at the cost of some major and adverse change in valuation, that it may be able to survive only by the sacrifice of values which today it rightly deems essential.
>
> (P. 472) A system unduly pressed by change may seek to limit the rate of change to suit its capacity for regulation. It seems to me inherently probable that the rate of change, unless controlled, must progressively outstrip our adaptability; so that this recourse is likely to prove the most necessary and important of all; and I suspect that it is already the most active. It is, however, still ideologically unacceptable to many, so we should perhaps give it some thought. . . . There is room for debate as to how much disturbance the system can stand. There is need for inquiry, lest proposals to limit change prove to be only an easy alternative to save authority the painful but healthy alternative of raising its capacity for regulation. But when all is said, the limitation of the source of the disturbance is bound to be of ever greater importance among the means of dealing with it.

So, in this section we have considered the concepts and definitions of general systems theory which seem to have applicability in the explanation of change and innovation in organizations. The most important of these for this study seem to be 1. control, regulation, and modification of systems by information flow; 2.

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"steady state" maintenance, or resistance to change; and 3. system adaptation to the environment, the so-called ultrastable system. Finally, the idea that an innovation has a "life cycle" through which it goes is consistent with systems theory.

Introduction

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CHAPTER III

METHODS OF STUDY

Introduction:

The problem being addressed in this study, as stated in Chapter I, was to investigate an innovation, in its organizational setting within an institution of higher learning, from a systems-process viewpoint, in order to help explain the innovation process in such a setting. The whole process of the innovation was studied, from its inception, through the planning stages, its adoption by the institution, subsequent modifications, and final partial discontinuance. Since the process itself was quite complex, the study of its life cycle was also complex, and required a variety of approaches.

The innovation being studied was that of a curriculum change known as the Common Learning. Several sub-innovations were considered as a part of the overall study of the primary innovation. The major one of these was the adoption of educational television as a part of a teaching system in two areas of study within the Common Learning. The role of the Instructional Communications Department as a change agent group in bringing about the adoption of this innovative teaching method was probed. In regard

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to this role, the perceptions of the faculty members and administrators involved with the Common Learning were investigated, as these perceptions were considered as important as the actual events in explaining the process of innovation.

Since the viewpoint of the study was different from that of most of the diffusion studies in the literature, a different means of investigation had to be developed. The investigator acted as a participant-observer during the progress of the innovation. Three main methods were employed. These research methods are listed below:

1. A descriptive and historical case study of the life cycle of this innovation at Northern Michigan University, based on non-reactive, unobtrusive measures such as institutional, departmental, and personal records; evaluations used in the program, descriptions of the courses, and the like.
2. A survey by mailed questionnaire was conducted among a population as shown in "Population of the Study," which is included with this chapter. This survey was concerned with the following:
   a. The patterns of information flow within the organization under study (the University) among all of those who taught in the program from its beginning to the

present; administrators; members of a curriculum committee; and members of the Instructional Communications Department. This was done during two time periods (before the first use of Common Learning courses in the fall of 1966, and after this first use). Information flow patterns (a who-to-whom matrix) were determined by computer manipulation techniques.

b. The perceptions of the respondents as to the proper activities (roles and functions) of Instructional Communications staff, acting as a change agent group, during two time periods -- before and after the first use of television as a teaching method in the Common Learning program in the fall of 1966.

3. Special focused interviews with six key people who were -- and are still -- deeply involved with this innovation at Northern. These persons were chosen on the basis of the extent of their involvement in the program; the range of roles played by this group of individuals; and the fact all were present when the innovation was first being discussed and were still available to question at the time of the survey. Besides, all played liaison roles of varying importance. Several of the "stars" of this liaison group

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were included in the focused questionnaire.

These interviews were used to determine the attitudes of these representative people toward the innovation at various time periods; their concepts of Northern as an institution in terms of its ability and readiness to change; their views of the leadership in the institution; some of their beliefs as to the adequacy of communication; and their perceived reasons for the adoption and later modification of Common Learning.

I of the Study -- Historical Case Study

As stated above, the first part of this study, that of a des-
ve and historical case study, was conducted by means of non-
ve measures such as the study of various records, reports,
ng papers, memoranda, statements of purpose, and the like.
et al (1966, p. 1, 3) recommend such nonreactive research in
ocial sciences, stating that:

> Today, the dominant mass of social science research is based on interviews and questionnaires. We lament this overdependence on a single, fallible method. . . . They (the questionnaires) create as well as measure attitudes, they elicit atypical roles and responses, they are limited to those who are accessible and will cooperate, and the responses obtained are produced in part by dimensions of individual differences, irrelevant to the topics at hand.
>
> But the principal objection is that they are used alone. No research method is without bias. Interviews and questionnaires must be supplemented by methods testing the same social science variables but having different methodological weaknesses.

> Once a proposition has been confirmed by two or more independent measurement processes, the uncertainty of its interpretation is greatly reduced. The more persuasive evidence comes through a triangulation of measurement processes. If a proposition can survive the onslaught of a series of imperfect measures, with all their irrelevant error, confidence should be placed in it.

These writers continue to explain that, with studies of social change, the most practical method of research is to rely on available records, supplemented where necessary by verbal recall of those who participated in the social change. This is the method which was adopted for this part of the present study. Webb et al list several primary gains to be had from such a method: 1. protection against reactive measurement fallacies, 2. an easier method of determining long-term change, and 3. a potentially lower-cost substitute for some standard survey practices.

Of course, not all is perfect in this method of research. Webb et al (p. 56) point out that:

> In general, for trace evidence and archival records, a dominant concern is the possibility of selective deposit and selective survival of the research data. Through supporting research designed to learn of these errors, it is sometimes possible to apply corrections to what is available. At other times, the researcher must remain in ignorance and make assumptions.

In the present study, it is believed that using the nonreactive measures of records and the like to fill out and substantiate the information gained by the mailed questionnaires and by the focused interviews gave a more objective picture of the process of innovation

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diffusion which took place at Northern during the life cycle of Common Learning than would otherwise have been possible.

In studying the historical perspectives of this innovation process, the following documents were investigated: 1. Minutes of the Faculty Senate, 1963 through 1969; 2. Various memoranda and papers produced by the Senate and its sub-committees regarding the progress of the innovation; 3. Minutes of the Sub-Committee on a Common Learning and its reports to the Faculty Senate; 4. Voting records of the Faculty Organization in regard to the innovation and reports of the Organization's meetings; 5. Institutional records concerning number of students enrolled, number of faculty, faculty turnover, faculty members teaching in the Common Learning program, etc.; 6. Report of the Task Force on the Future of the University; 7. Issues of the campus newspaper; 8. Reports of evaluations of the Common Learning program; and 9. Private notes and memos concerning the program owned by persons involved in the innovation, including the present writer.

Part II of the Study -- the Communication Questionnaire

As stated above, information for this part of this study was collected by means of a mailed questionnaire consisting of two parts. A copy of this questionnaire is included in Appendix B. The first part of the questionnaire was in the form of a list of persons who were connected with Common Learning, followed by blocks under two

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time periods. Respondents were asked to place a check in the boxes to indicate message flow during these time periods. The purpose of this questionnaire was to determine the structure and function of the communication networks in the organization during two time periods during the life of the innovation.

Data collected by means of this questionnaire were reduced using a technique of computer manipulation developed by Mr. John Darlington and Mrs. Betty Darlington. (See Appendix A.) Mrs. Darlington is employed as a research specialist at Michigan State University's Computer Center. She received assistance from her husband, a computer programmer. This method accomplishes much the same results for a large number of respondents as the techniques of matrix multiplication as described by Guimaraes (1968, 1969), building on earlier work and reports by Festinger et al (1950), Forsyth and Katz (1946), Lindzey and Borgatta (1954), Proctor and Loomis (1951), Moreno (1967), and others. This method has the advantage of being faster, more efficient, and being able to produce more answers than other, earlier methods of communication net analysis.

In addition to the above analysis of the data obtained from the information flow questionnaire, the patterns of information and communication flow among and between groups were determined by consolidating the information for individual message flow into "totally

communicant" groups. These groups were identified as to the area of the University where most of the members of each group were involved. Liaison individuals who linked each of these groups to other groups were identified, and the number of these links for each liaison persons was determined.

Since innovation decision-making in an organization seems to be controlled and regulated by information flow, this analysis of the information structures and flow within the institution during two time periods -- when correlated with the results of the study of the historical events which took place during the process of innovation, and with the perceptions and attitudes of a group of key persons identified with the innovation as obtained in the focused interviews -- made possible a more thorough explanation of the complex process involved in the study. The approach used here is in line with both decision theory concepts and techniques, and with cybernetics or systems theory -- especially those parts of systems theory concerned with control through the feedback of information.

The second phase of the mailed questionnaire portion of the study was an examination of individual perceptions. It attempted to determine from those involved with this innovation what they felt the role and activities of the Instructional Communications (now Learning Resources) staff should have been as a change agent group. Two time periods were covered: before the decision to use television as

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a method of instruction in the Common Learning program was made, and during the period following this decision. These perceptions were compared with what actually took place, as shown by institutional records, in an attempt to determine what effect these perceptions had on the development and use of television as a teaching method.

Part III - Focused Interviews

The third portion of the study was focused interviews with several representative persons who took part in all stages of the diffusion process which introduced Common Learning to Northern, and which shaped its later changes. Merton, Fiske and Kendall, in The Focused Interview (1956, p. 5) say that:

> In the beginning, the primary, though not the exclusive, purpose of the focused interview was to provide some basis for interpreting statistically significant effects of mass communications. But, in general, experimental studies of effects, and inquiries into patterned definitions of social situations might well profit by the use of focused interviews in research. . . . The primary objective of the focused interview is to elicit as complete a report as possible of what was involved in the experience of a particular situation.

These writers point out several distinguishing characteristics of the focused interview, including: 1. The persons interviewed have all been known to be involved in a particular situation; 2. The hypothetically significant elements, patterns, processes, and total structure of the situation have been previously analyzed by the social

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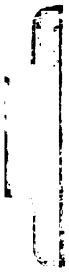
scientist; 3. From this analysis of the situation, he has developed an interview guide, setting forth the major areas of inquiry; and finally, 4. The interview is focused on the subjective experiences of the persons exposed to the pre-analyzed situation to ascertain their definitions of the situation.

Merton, et al (1956, p. 11, 12) point out several criteria of effective focused interviews:

> In order to achieve one or more of these several functions, the interviewer must develop the practice of continuously assessing the interview as it is in progress. . . . We have evolved a set of criteria which seem to distinguish between productive and unproductive interview materials. Briefly stated, these are:
>
> 1. Range. The interview should enable interviewees to maximize the reported range of evocative elements and patterns in the stimulus situation as well as the range of responses.
>
> 2. Specificity. The interview should elicit highly specific reports of the aspects of the stimulus situation to which interviewees have responded.
>
> 3. Depth. The interview should help interviewees to describe the effective, cognitive and evaluative meanings of the situation and the degree of their involvement in it.
>
> 4. Personal context. The interview should bring out the attributes and prior experience of the interviewees which endow the situation with these distinctive meanings.

Included in Appendix B is a set of questions designed to guide the focused interviews which were made with key persons in the Common Learning program in gathering their perceptions of the social situation involved -- that of the process of the diffusion of an



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educational innovation. The results of these interviews were sorted and analyzed to help explain the process which took place during the life cycle of this innovation.

In brief, the questions asked in the focused interviews explored the following points: Who the interviewees thought had first brought the idea of the innovation to campus; where the interviewee first learned about the innovation; whether or not the key people on campus were properly informed about the innovation; the attitude of the interviewees at several time periods toward the innovation; the role played by various groups in the institution with regard to the innovation; the change orientation of the institution; the state of perceived information flow and leadership style at critical portions of the innovation process; and the effect of the adoption of the innovation on the quality of education, as well as other effects of the innovation.

The method used in these focused interviews was to ask the questions verbally of the interviewees in a face-to-face interview situation. Supplementary questions, containing additional verbal cues, were available in case a response was tardy in coming. In most cases, these extra cues were found helpful. Answers to the questions were audio-taped, and later were transcribed and analyzed. The results of this method of interviewing have been correlated with the results of the other two techniques of research described above

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in order to obtain a complete and well-rounded picture of the total life of the innovation from its inception, through its adoption, modification and partial discontinuance.

Interviewees were chosen primarily on the basis of their key roles in regard to the planning, adoption, and operation of the innovation. All were present at the University when planning for the Common Learning began; all were still present during the period when the study was being conducted. All of those interviewed served in liaison roles in regard to various "totally communicant groups" or cliques. (Totally communicant groups were defined as groups, all members of which talked with all other members.) In fact, several of those interviewed played "star" roles in terms of communication about the innovation. Finally, those interviewed played a variety of roles and served a variety of functions in regard to the innovation. The group included regular faculty members, administrators, members of Committee "A" and its sub-committee on the Common Learning, persons who taught both by conventional means and by television in the Common Learning program, and persons identified with each of the three areas of study in the program. In short, the group was chosen as persons who could give the most information concerning the process of innovation investigated in this study.

Population of the Study:

In general, the population of the study included those persons who were involved with the innovation in some significant way during its life cycle. These included all of those persons who taught within the Common Learning program since its inception in 1966, including coordinators of the three subject areas, television teachers for the two sequences using television, and section faculty members for all sections. Also included were members of the top administration of the University (the presidents and vice presidents who have served during the life cycle of the innovation); deans, department heads and administrative personnel within the program itself; faculty leaders and members of "Committee A" and the Sub-Committee on a Common Learning; and members of the Instructional Communications Department (now Learning Resources) who were involved with the innovation. The total number of persons involved was 190 (this was the number of questionnaires mailed). Of the total, 112 replies were received. A good bit of overlapping was noticed in the groups listed above; for example, most of those who administered the program also taught in it, and the members of Committee "A" also filled other roles in the institution and in the Common Learning Program. Finally, different persons filled different roles at various periods during the life cycle of the program. Six persons were selected, by means noted earlier, to be interviewed by the focused interview method. All of these were included in the 190 noted above.

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CHAPTER IV

HISTORICAL PERSPECTIVES

Introduction:

One of the stated purposes of this study was to view the subject innovation (the curriculum change known as the Common Learning, with its sub-innovations -- teaching by television and the organizational structure of the program), not as a matter of a single decision, but as a living process. As such, it was planned to follow this innovation from its inception as an idea entering the "system" which is the University from outside, through its detailed planning, adoption, subsequent modifications, and partial discontinuance. It was felt that only through such a continued and methodical study could the total innovation process be thoroughly investigated.

This chapter gives the results of an historical study of the events making up the life cycle of the innovation, through the stages noted above. Information was gathered by reviewing institutional records of various kinds. Among these were: reports of the meetings of the Faculty Senate, its Curriculum Committee, and the Sub-Committee on the Common Learning; memoranda issued by members of the program's administration; notes and personal

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papers of several persons who were active in the development of the program; accounts of activities of the program as reported in the campus newspaper; and documents generated during the operation of the program itself, including several evaluations of the program. Results of this study are presented below.

Beginning of the Innovation, 1962-63:

The conception of the Common Learning program at Northern Michigan University, as indicated by official minutes of Committee A of the Faculty Senate -- the curriculum committee -- seems to have come about early in the 1962-63 academic year. At that early time, most of the action concerning the innovation took place within this committee. The first official record of the subject appeared in the minutes of March 1, 1963, when there was a discussion of "general education." At that time, the committee agreed on two matters: 1. that general education courses should come first in the student's college career, and that 2. they should be spread over the whole four years of the student's stay at Northern.

The idea of a general education sequence may have come about in part through the discussions of the consequences for Northern Michigan University of the state-proposed Teacher Certification Code. Of course, at the time it was first discussed, this general education program was not considered for all students, but

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for those who would be attempting teacher certification. Therefore, the term "general education," as first discussed in Committee A, was little like the idea which finally became the Common Learning program.

At the March 1, 1963, meeting of the committee, the dean of education pointed out that (to quote the minutes):

> Both elementary and secondary code provisions require that the student shall have completed not fewer than 40 semester hours in a program of general education that includes, "(a) practice in using the instruments essential to communication and investigation in modern society, and (b) an acquaintance with the substance, concepts, and methods of the principal areas of human knowledge." . . . A major change of importance to the committee is the general education program and the program for elementary teachers. The Department of Psychology and Education (Note: at this time, this was a combined department) has been working on recommendations in this area. It is at the present time almost at a standstill until the general education program is defined. A great deal of urgency is attached to the need to make this program definition in the area of general education.

Thus there was outside pressure (from the State Department of Education) for some sort of program in this area. However, the pressure was for a limited program, not for one which all students would have to take. It appears that the academic vice president had in mind something much more general, to be taken by all students at the University, and that he led the ensuing discussions toward this broader goal.

It is significant that in these very early discussions of the idea which became the Common Learning program, the academic

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vice president is credited in the minutes of Committee A with having initiated the discussions. He was also chairman of Committee A, the curriculum committee, during 1962-63. As such, he was in an ideal position to guide the discussions. From a study of official records, one gathers the impression that he did indeed engage in such guidance. In fact, the minutes show that during almost every committee meeting during the remainder of the year, the academic vice president again brought up this subject for discussion.

During the March 8, 1963 committee meeting, a book was suggested by the academic vice president to the group for reading, the title of which later became the name for the program of "general education" at Northern. The minutes state that:

> (The academic vice president) referred the group to The Search for a Common Learning, a study of liberal and general education in America since 1800 by Russell Thomas (of the University of Chicago). . . (The academic vice president) stated that the term "general education" has many different and some unfortunate connotations. The academic vice president wondered whether the term "liberal education," meaning the education of free men -- the non-specializing kind of education that a person in a democratic society should have -- might not be a more suitable term.

There is no indication in any later records that the term "liberal education" was considered as a designation for the program as it developed. However, the term "A Common Learning" was not actually adopted until later in the following academic year, as will

be noted later. Until that time, the discussion was of "general education."

During the remainder of the academic year of 1962-63, the committee continued sporadic discussions of the proposed concept. No decisions, however, were reached. The academic vice president seems to have continued to stimulate these discussions by posing such questions as, "What is college teaching?", "What are the objectives of Northern?", "What should a student who has graduated know?"

The minutes of the Curriculum Committee, Committee A, were circulated to all faculty members during this period, as they were throughout the development of this program. Thus all faculty members had ample opportunity to read about the discussions and developments which were taking place. However, as one reads the minutes, one wonders whether the highly general and theoretic tone of the discussions at this time may not have led many faculty members to conclude that nothing much would come of the talks.

The composition of Committee A at this time is interesting to a student of institutional communication and decision-making. At the beginning of the 1962-63 academic year, the membership consisted of the academic vice president as chairman, two deans, four department heads, and the member of the Public Services Division responsible for correspondence study and credit course extension.

On November 1, 1962, an invitation was extended to three ordinary, teaching faculty members to become members of the committee. However, even with the addition of the three, it is clear that the committee was heavily weighted toward administration. The average faculty member probably conceived of the committee as an instrument of the academic administration, especially since the whole faculty senate and its committee structure was new at the time, and the faculty had little experience with self-governance.

The Nature of the Concept:

It appears from the minutes of Committee A that the book, The Search for a Common Learning by Thomas, had a significant influence on the development of the innovation. Thus, it seems appropriate at this point to review the nature of the concepts presented in it.

In his account, Thomas (1962) traces the roots of the general or liberal education movement back to the beginnings of the 19th century. It is obvious that, although the program was indeed an innovation for Northern Michigan University, the concept itself was by no means new. The concept of a "liberal education" is traced back ot 1800. However, in the 20th century, general education became important. Thomas (p. 1) says:

> For more than a quarter of a century general education has been a major concern of higher education in America. In its name curriculums have been reorganized, administrative

> structures of colleges have been altered, and countless workshops, conferences, and self-study projects have been undertaken to the end that higher education might be improved. A forbidding volume of literature has been published on the subject. This literature reflects not only the immense amount of energy and thought which has been devoted to the idea and practice of general education; it reveals an almost staggering diversity of opinion about both the ends and means of general education, and no inconsiderable misunderstanding about many of the experiments which the idea has generated.

The same sort of diversity of opinion and thought noted above was certainly true of the discussions which led to the adoption of a Common Learning program at Northern. Let us consider the concept as expressed by Thomas (1962), who was a major resource for the Northern planners. This writer (p. 301) points out:

> The idea of liberal education was once consonant with the idea now commonly expressed in the term "general education." Except in rare instances, this is no longer true. Historically, the term "general education" has stood for the idea of a common learning, a knowledge of man's achievements and of the processes by which he has achieved greatness in intellectual inquiry, in social institutions, and in the products of the arts. The belief in the necessity of this common learning -- this general education -- rests upon the belief that no man realizes himself as an individual man except as he comes to understand through the breath of his knowledge his identity with all men.

It is easy to see from the above where the term "A Common Learning," which was adopted to describe the program initiated at Northern, had its origin.

Thomas goes on to point out the close ties with the idea of a liberal education which are embodied in the concept of a common learning in higher education. He says (p. 62):

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> It assumed that every man, though an individual, is none the less an individual man, and therefore united with his fellow man, past, present, and future. It asserted that as man he shared in the products of the accumulated wisdom of mankind and in the responsibilities that are the common obligation of all men. Though certain responsibilities must be discharged by each individual out of his special competence, others could be discharged only in the exercise of a kind of understanding which all men should strive to possess. . . . No reasonable person protested the advances of scholarship and research, but there were a few who understood that if it were to be attended by the neglect of a common learning and indifference to the importance of an understanding of the interrelationships of the manifold parts of knowledge, society itself would be the loser. . . . The idea of a common learning shared by the liberally educated was embodied in the adjective "general."

Another portion of Thomas' book was devoted to a series of case histories of colleges and universities who had adopted the idea of general education by 1960, when the book was written. This section literally gave a series of blueprints from which those seeking to adopt such a common learning program at Northern could pick and choose. That they spent considerable time in the selection is a matter of record. Though the idea of general education was first discussed during the 1962-63 academic year, the program was not formally adopted until June of 1965, and the first courses were taught to students in the fall of 1966.

While it is clear that the men in Committee A at Northern did read and use much of the information in the Thomas book and many others, it is not clear whether they took much heed of another portion of this same book. Thomas tells us that the whole idea of

a general education has not prospered in many cases. He says (p. 300):

> There have been signs in recent years which might be construed as a disenchantment with the whole business of general education. More than one of the colleges reviewed in this study have within the past five years abandoned or deemphasized the use of the term "general education" in descriptions of their academic programs. The trend, if it is a trend, seems to me to be a reaction to a name rather than to a basic educational idea. The fundamental principle for which the term has traditionally stood does not appear to have been rejected, since the same colleges continue to speak of the "broad foundation of learning" or "the common body of knowledge" or "the introduction to all major fields of knowledge" which they assert should be a part of every student's experience. Yet the substitution of one cliche for another solves no problems and illuminates nothing that was formally obscure. The substance of the "broad foundation" is likely to remain as uncertain and as much a matter of dispute as is the substance of "general education."

Thomas proved prophetic so far as the program of the common learning at Northern is concerned in the above statement. The choice of the name, "A Common Learning," solved none of the problems of establishing and maintaining such a program. There was considerable controversy during the gestation period of the innovation; this turmoil continued after its adoption, and led eventually to considerable change in the content of the courses, in the manner in which they were later taught, and in the total concept of the program itself.

It is clear from the records of the University that the idea of a common learning as expressed in the Thomas book and elsewhere

was taken to mean a discreet body of courses, taught to all students at the University, with certain exceptions for majors in given areas of emphasis, and continuing throughout the four years of undergraduate experience. Many variations on the above theme were considered, but the theme itself remained fairly constant.

The Gestation Period -- 1963-64:

During the academic year 1963-64, the Dean of the College of Education became chairman of the Committee on Academic Affairs (the successor to the curriculum committee, which was still unofficially known as Committee "A" by the faculty). Members of the Committee during 1963-64 were the academic vice president, three deans (all the University had at the time), four department heads, four regular faculty members, the assistant to the academic vice president, and the member of Public Services in charge of off-campus credit courses.

The Dean of Education stated at the first meeting that "One of our major responsibilities for the year will be that of curriculum reform" (Committee "A" minutes, September 1963).

Actually, this curriculum reform was to take two paths:

1. the establishment of a "four-course plan," in which the Carnegie units of hour credit for courses were dropped, each course was considered to be equal (and for comparison purposes with courses

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of other institutions was to equal four semester-hour credits), and a full load for a student was to be four courses per semester; and 2. the Common Learning program with which this study of innovation is concerned.

As was no doubt inevitable, this consideration of two major curriculum innovations at the same time created confusion, both in the minds of the faculty members who were not close to the discussion in the centers of power on the campus, and in the minds of students who faced the prospect of change in their academic careers as a result of these proposed changes. Some of the problems which later arose with the adoption and implementation of the Common Learning program can no doubt be traced to this confusion. The innovative teaching methods and organizational structure of the Common Learning program as later adopted no doubt added to the confusion.

Committee "A", at least, was not confused. While most of the fall meetings were taken up with more or less routine matters, early in January 1964 a subcommittee under the chairmanship of the academic vice president was formed, and was first called the "Subcommittee on General Education." This name was changed to the "Subcommittee on a Common Learning" by official action of the Committee on Academic Affairs at its February 28, 1964,

meeting. The subcommittee's membership consisted of the academic vice president, three department heads (English, History, and Chemistry), and one faculty member. During the remainder of the year, the curriculum committee spent at least half of each of its meetings in hearing reports of this subcommittee, and in discussing these reports. Action on the four-course plan also continued; this plan was actually approved and put into operation before the Common Learning.

The work of the subcommittee continued at a rapid rate during the spring of 1964. By the April 15th meeting, the academic vice president -- acting in his capacity as chairman of the subcommittee -- reported to Committee "A" (April 15, 1964 minutes) that his group had tentatively decided on "four objectives which seem to include everything which might be approached realistically at this point." These objectives were:

> (1) to awaken the student's intellectual curiosity through the creation of a climate of learning on campus which will encourage the exploration of issues and the interplay of ideas, and which will serve as a basis to stimulate lifelong intellectual endeavors; (2) to cause the student to explore the essential facets of and the relationship among man's physical and natural environments, his economic, political, and social culture, and his literary and artistic achievement; (3) to equip the student with the basic intellectual skills and the necessary practice in their use so that he may react to all facets of the human condition with appropriate analytical responses leading to effective synthesis and valid judgment; (4) to develop the student's concern

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At the final committee meeting of the academic year, the academic vice president made a report of the work of his subcommittee. According to the minutes:

> (The academic vice president), chairman of the Subcommittee on a Common Learning, presented a summary report of the efforts of the Subcommittee. A list of tentative objectives (given above) for a program of a Common Learning has been produced and distributed to the faculty. A statement on a Common Learning program will be distributed to the entire faculty before the end of this academic year as a series of tentative observations -- by no means final.

Activities of 1964-65 -- Birth Pains:

While it is hard to assess with accuracy the success of such an attempt, at least the subcommittee made quite an effort to talk over their planning with a number of people, and to incorporate these ideas into their report. In its "Penultimate Report on a Program of Common Learning," December 1, 1964, the subcommittee stated that: "In all, our subcommittee or representatives from the subcommittee have met with some two score faculty members for discussion and exchange. In addition, we have received, read, and explored an equal number of faculty communications." They reported that they had engaged in dialog with the general faculty to collect and examine their concerns, objections, recommendations, and general thinking. In addition, part of the general faculty

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meeting of March 11, 1964, was given over to a general discussion on common learning. It seems that this should have given adequate exposure to the ideas involved in "a Common Learning."

Several documents were also issued to the general faculty during the calendar year 1964 by the Subcommittee. These included the memorandum containing the tentative objectives listed above, a Progress Report from the Subcommittee on a Common Learning (dated May 27, 1964), and The Penultimate Report on a Program of Common Learning (dated December 1, 1964). A Final Report on a Program of Common Learning was issued, and was sent to the Faculty Senate in January 1965. These documents should have increased the amount of knowledge held by faculty as well as the volume of communication concerning the proposed program. A copy of the final report is included in Appendix C.

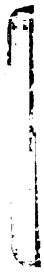
On February 22, 1965, the Faculty Senate, which was the parent organization for the Committee on Academic Affairs, issued a memorandum to the general Faculty Organization, in which it stated:

> In a meeting held on Monday, 1 February 1965, the Senate approved the following motion: "That the report on common learning be accepted as modified and that the Senate recommend its adoption by the faculty organization by closed ballot as soon as practicable after the general meeting of March 9, 1965."

Attached was a document which represented a modification of the report written by Committee "A" and its Subcommittee on a Common Learning. This modification was the result of Senate discussion with members of the Committee "A" and its subcommittee. The modified document retained the suggested objectives of the Common Learning; continued the proposed number of courses in the common learning sequence at 12; stated a number of significant features of the program; gave the proposed sequence of courses; pointed out certain important characteristics of the program; and outlined the administration of the program.

The content of the Common Learning as then envisioned was to include 12 courses: two courses in Thought and Expression, to be taught cooperatively by the English and Speech departments; three courses in mathematics and the natural sciences, Man's Perceptions of Nature; three courses in Man's Social Behavior, the Social Sciences; three courses in Man's Creative Imagination, The Humanities; and a final senior seminar, to be made of up small groups of students -- a so-called capstone course. This was later modified to be 10 courses, as will be noted later in this narrative.

Two votes on the Common Learning program were taken in the spring of 1965 -- the first, sent out late in March, received 83 "no" votes, 76 "yes" votes. Of the 183 persons eligible to



vote, percentages were thus 45% "no," 41% "yes." Twenty-four faculty members, or 14%, did not vote. The second attempt, after a considerable period of further explanation, consideration and modification, passed the Faculty Organization on June 7, 1965. A copy of this version of the plan is presented in Appendix C. The total number of votes cast was 140; 106 "yes" votes were cast at this time, for a total of 75.3%. This was 58% of the eligible 183 faculty. Another 34, or 24.7% of those voting, still were opposed. This was 18% of the total faculty. Twenty-four percent did not vote.

What was the final form of the Common Learning as it passed the Faculty Organization? Briefly, it consisted of three groups of courses, making up eight required courses, with two electives. The group courses were as follows: Group I -- Four courses -- Humanities I and II (Thought and Expression), Humanities III and IV (History, Arts, Literature, Philosophy); Group II -- two courses -- Integration of the natural sciences (Mathematics, Physical Sciences, Biological Sciences), or general education courses in each of the above (choice of two); and Group III -- two courses -- integration of Government, Sociology, Economics and Geography, or two general education courses, one in Government and one in either Geography, Anthropology, Sociology, or Economics. Electives were as follows: two courses, either two courses in a foreign language for students not majoring or minoring in the field, or a course (not

in the major or minor field) in Mathematics, Natural Science, Social Science or Psychology, and an interdisciplinary senior seminar dealing with major themes -- man and technology, peace, etc. It should be noted that Health and Physical Education were not included in the program of a Common Learning.

The approved proposal (June 7, 1965) stated that:

> A student majoring or minoring in a department in Group II or III may be exempted from one of the common learning or general education courses in that group, but must substitute a course in a department outside his major or minor field. A student majoring and minoring in departments in Group II or Group III may be exempted from two of the common learning or general education courses in that group, but must substitute courses in a department or departments outside his major and minor fields. These substitutions shall require the approval of the student's advisor.

One can see from the above that the "Common Learning," as approved, was actually something less than "common" to all when exemptions and options were all exercised. This flexibility seems to have been necessary to satisfy the original critics of the program, in order to insure its passage and adoption. Thus the original concept as stated by the Subcommittee was already subject to modification before its adoption.

The administration of the program, as stated in the final report of the Subcommittee on a Common Learning, was to have been somewhat as follows: A committee was to be appointed under Committee A to coordinate the development and implementation of

the program. As it actually occurred, three committees -- one each for Groups I, II, and III -- were named. These individual committees largely determined the course of the program as it developed during the 1965-66 academic year. The final report of the Subcommittee had recommended that the administration of the Common Learning be the responsibility of a coordinator. Actually, the committees guided the program during 1965-66, each group of courses had a coordinator and a dean of common learning was appointed during the fall of 1965. However, the committees in each area were given a fairly free hand to develop their courses as they wished.

One final point concerning the plan for administration during this period should be mentioned. The final report stated: "It is recommended that during the academic year of 1965-66 a pilot program of some of the common learning courses be initiated so that faculty members can have the opportunity to experiment and gain experience in the planning, development and teaching of such courses." This would have been in line with what the literature on innovation diffusion suggests is valuable in launching innovations. However, no such pilot program was in fact initiated. Courses in all sequences were planned during the academic year of 1965-66

and were developed during the summer of 1966, and the full-scale program was launched in the fall of 1966.

Though the percentage approval of the Common Learning program (75.3% in favor) was substantial, two things (which diluted this favorable response) should be noted. First, the vote was taken after a rather intensive campaign to get the proposal adopted by the leaders in the academic administration, including those in the faculty senate. The private opinion expressed by many faculty members was that they might as well go ahead, the project was so well supported by the leadership as to be inevitable. This seems to have had considerable impact on the future events in the "life history" of the innovation.

Second, at that time, there was a high rate of turnover among the faculty at Northern Michigan University. (See Table 1.) Also, since the institution was growing almost explosively at the time (a 22% gain in student body in 1964-65; see Table 2), many new faculty members were brought into the institution after the June 1965 vote, but before the start of Common Learning classes in the fall of 1966 (Table 1). These new faculty members, many of whom were hired explicitly to teach in the Common Learning itself, had not been exposed to the rhetoric, arguments for the program, and discussions which were a feature of the 1964-65

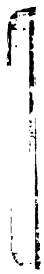


TABLE 1

Number of Faculty, 1963-69

	Total Faculty	% Increase
1963	126	
1964	134	6
1965	179	34
1966	252	41
1967	266*	6
1968	281*	6
1969	284	1

* 66 replacements hired. Total increase 32%.
**65 replacements hired. Total increase 30%.

TABLE 2

Percentage Increase in Enrollment, 1963-69

	No. of Students	% Increase
1963	3,947	
1964	4,550	15
1965	5,560	22
1966	6,897	24
1967	7,085	2.7
1968	7,286	2.9
1969	7,839	8

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academic year. Thus many of these new faculty did not understand, and did not agree with, the aims and objectives of the program. These new faculty members were a source of steady pressure (together with those dissidents remaining from the 1964-65 period) for change in the program. Much of this pressure was not officially stated, but was an undertone in private talks and complaint both before and after the start of actual classes.

Early Development of the Program -- 1965-66:

The academic year of 1965-66 was one of active development of the details of the courses which were to become the Common Learning in the fall of 1966. Committees were named to plan courses in each of the three groups of courses involved -- Humanities, Social Science, and Mathematics-Natural Sciences. These committees were drawn up from the departments whose disciplines were included in the given subject area. The usual pattern was to draw one committee member from each of the involved University departments. A coordinator was named to head each disciplinary area or group of courses.

The group coordinator and the committee for each group of courses spent a quite considerable amount of time during the 1965-66 academic year in the formulation and planning of what each of the

courses to be taught would be like. Of course, first consideration was for the course content, but soon the problem of staffing the courses became more important for these planning groups. They, the department heads involved with the problems of staffing, and the higher academic administration began to realize the problems which were to be faced in the logistics of teaching courses which would involve most of the freshmen and sophmores in the institution.

Originally, it was stated in the plan (June, 1965) that no one would be forced to teach in the Common Learning who did not wish to do so. Since many, if not most, of the older faculty members did not wish to teach in such lower level, large enrollment courses, operationally this meant the problem of recruiting a large body of new, and often untried and inexperienced, faculty members. (See Table 3 for details.) Most of this body of new faculty was hired at the instructor level, and actually arrived at Northern in the fall of 1966 -- just in time to begin their new duties, and without much preparation time for the teaching, or for learning about the program.

As the subject area committees began to consider the problems inherent in mounting such a large-scale effort as the Common Learning (as well as problems of new faculty, plus those of

inadequate financing), they began to consider possible teaching methods which could alleviate these difficulties.

TABLE 3

Faculty of Common Learning, Fall 1966

	New	Old	% in Rank
Professors		2	1.7
Assoc. Professors	1	5	5.5
Ass't Professors	16	14	27
Instructors	55	9	57
Grad. Ass'ts	9	1	8.8
Totals	81 (72%)	31 (28%)	100%

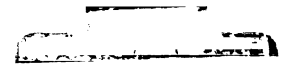
Grand Total: 112

TV and Media for Teaching:

Another development which had been taking place on the campus at Northern must now be discussed. For several years, the institution had been considering the installation of closed circuit television facilities, together with an off-campus distribution system utilizing microwave to reach the growing number of CATV or cable television systems going up in the Upper Peninsula. This proposed system was bought, installed, and put into partial operation during 1964. The first experimental off-campus distribution to schools in the area was made during the spring of 1965. Also, several faculty members experimented with the use of television in their own courses during the 1964-65 academic year.

In August of 1965, the present writer was hired to head what was then named the Instructional Communications Center. This organization included the campus radio station, the television operations, and the audio-visual services. This latter service was older than the other two services, but had been given rather short shrift in budgeting. One full-time person was hired in this area in July of 1965; the others who worked in the area were students who served part time.

In the fall of 1965, the writer found that committments had been made for the production and use of four credit television



courses. Due to the shortage of help and extremely low budget, only parts of three of these courses were actually produced. However, the coordinators of both the Common Learning Mathematics-Natural Science sequence and the Social Science sequence were among those who taught by television during the 1965-66 academic year, and so each of these men had gained some experience with the medium. They also had spent a considerable amount of time in discussion with members of the Instructional Communications Department concerning the potential of television for college instruction.

Thus, it was quite natural that, when the committees faced up to the problems of staffing, budget, and methods for teaching in the proposed Common Learning courses, they should think of the possibility of television teaching.

In October of 1965, the coordinator of the Mathematics-Natural Science sequence informally discussed this possibility with the writer. Later, he addressed a formal memorandum to the writer requesting an estimate of the cost in new equipment and personnel of teaching two "lectures" per week by means of television. The writer responded with a tentative budget, but at the same time requested a meeting to discuss pit-falls which might result from a too-hasty adoption of this method, as well as to plan possible techniques.

This exchange of memoranda resulted in a concentrated series of meetings in which the writer acquainted the coordinator with the problems as well as the possibilities of the use of television and the other media of education in such large enrollment courses as the proposed Common Learning. The coordinator of the Social Sciences sequence, hearing of what was being discussed with the Mathematics-Natural Science coordinator, also expressed an interest. The writer met with the whole social sciences committee, and spent considerable time in discussion with them. To aid in these discussions, at this time the writer prepared a paper, which was distributed to all faculty members, on "A Systems Approach to Education." This paper presented a plan for a systematic development of a teaching sequence, using behavioral objectives and all available media, as well as taking into consideration all other factors of the "educational system" and its ecology.

The series of talks outlined above culminated in several visits with the academic vice president in which the two coordinators and the writer (whose title was then Coordinator of Instructional Communications) discussed the possibility of using the newer educational media in teaching the Common Learning. The academic vice president agreed with their plan. A visit was also made to

the President to gain his approval of this plan of operation. He also agreed and asked for a formal proposal which could be presented to the Board of Control for their approval.

As a result of the above request, the two Common Learning group coordinators and the writer prepared a document titled "A Proposal for Teaching Parts of High Enrollment Courses by TV." They submitted it to the president, who obtained its adoption by the Board. Thus, television teaching became an official part of the methodology of the Common Learning. A copy of this document is included in Appendix D.

This proposal (1966) stated that:

> The rationale which follows describes a proposal to teach parts of high enrollment courses, such as those in common learning, by TV. It advocates dividing such courses into parts which will be taught by various media best adapted to teaching these specific portions of the courses. Such a systematic approach to teaching will take into consideration the goals of the course, the human and environmental factors involved, the available media and techniques, and the best and most up-to-date knowledge of human learning.
>
> The specific proposal here is to teach the lecture portions of two common learning courses, the natural science courses and the social science courses, by means of television. Other portions of both courses would be taught by small group discussion, and in the physical sciences by laboratory sessions. Teaching portions of the courses by television would conserve faculty time and allow close personal contact in small group discussions and laboratory sections with the students in other portions of the course.

The proposal went on to explain the situation in colleges and universities which was leading to higher enrollments; the growth and development of the communication media such as television which were making possible much more efficient as well as effective teaching; and the developments in the understanding of learning which could aid the use of these newer media of instruction. It stated the problem faced by those developing the common learning program as:

> . . .one of educating increasingly large numbers of students, and, just as importantly, providing them with the highest quality education possible -- based on the best and latest knowledge of the techniques and philosophies of human learning. Specifically, the present problem is to plan an instructional program by which a large number of students who will be taking Common Learning courses next fall can be given quality education within the realistic limitations of resources and faculty.

The proposal stated that the solution to the problem was to plan a systematic method of instruction, using a mixture of instruction by television and by small group meetings. It also proposed that a system of questioning interspersed into the lectures by TV would be used to emphasize points, stimulate recall and provide reinforcement. Replies were to be by mark-sense cards, which then could be run on the computer. Such a program of questioning had been used successfully in a previous course produced by the writer and an instructor in education during the fall of 1965.

The proposal then stated eleven reasons why the proposal should be adopted, and why it should prove successful if adopted. These reasons may be reviewed by consulting the original document in Appendix D.

After a section on the need for immediate action if the proposal were to be adopted, the final portion of the document suggested a system of dynamic feedback and evalution to supply an incentive for continual modification of the proposed system of teaching for increased effectiveness. This plan called for evaluation of the tapes for the program as produced; then continued evaluation of the total course in terms of student achievement toward stated objectives of the course during and after the actual teaching of the courses involved.

As stated above, the document was adopted, and plans were made to actually begin TV teaching in a systematic fashion in the fall.

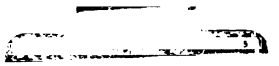
However, it should be stated that the actual events which took place altered in a number of significant ways the proposal as stated in the original document. These events included:

1. A delay in naming instructors to actually do the teaching -- both for the television tapes and in the small group sections. The television teachers were not actually selected and ready to start

taping until the summer of 1966. Most of the small-group instructors were not on the campus, as noted earlier, until early September, about ten days before the start of classes.

2. A delay in hiring producer-directors to carry out the television production portions of the courses. Instructional Communications did not have sufficient producer-directors on the staff to assume the load of production for these new courses, so new men had to be hired. However, the institutional budget did not allow hiring these two new directors until the start of the new fiscal year -- July 1, 1966. Even then, the short supply of producer-directors with at least a master's degree (desired so that these men could be given faculty rank) made it possible to find and hire only one of the two needed on July 1. The other producer-director was not hired until the middle of August, so had very little time to prepare tapes for the start of the fall semester. Moreover, little preparation was available for the use of the tapes that were produced.

3. A change in the coordinator for the Mathematics-Natural Science course sequence. The man who had originally suggested the use of TV in teaching these large enrollment courses became disenchanted with the progress of the program, and with his assignment, and asked to be relieved of his duties. In his place, a new faculty member was named as coordinator. However, this man did



not actually arrive on campus until July 1, and then did not totally agree with or understand many of the plans which had been made earlier.

4. Failure to follow procedures and practices in the development and production of the TV tapes and in their use which had proven their value in other parts of the country -- and which had been spelled out in detail in the original proposals. For details of these practices, refer to the original proposal in Appendix D.

5. Failure to establish adequate evaluation methods based on sound behavioral objectives. While there was a statement of objectives in a sense (chiefly the descriptive sense, definitely not behavioral objectives), these did not clarify the purposes of the course. For this reason, students and those new faculty members who were brought into portions of the courses could not identify with the objectives and carry them out. The only evaluations used were of the opinion-sampling type -- really variations of the questions, "how do you like the course?", and "what do you think of the methods used?" These gave little if any indication of the true teaching/learning value of the courses.

A final occurrence altered the plan and affected its development and maturation. This was the fact that the academic vice president who had been prominent in bringing about the adoption of the original plan for the Common Learning accepted a position as

president of a university in another state. He left Northern near the end of the 1965-66 academic year, before any Common Learning classes were taught. The loss of his leadership left an authority gap in the program. Though the program continued, some of its thrust was gone.

A word should be said here concerning the third of the three course sequences which made up the common learning -- Humanities. Since the first two courses in this sequence were skills courses in writing and speaking, those who were planning the courses in 1965-66 felt that these courses could be effectively taught only a low faculty-to-student ratios in conventional, small lecture-discussion groups. They saw no need for television or other media in these courses, and so did not include them. Later, a form of "mirror TV," in which students recorded short speeches and watched the replays of them, was employed in some of these courses. Also, a number of films, tapes and other media were used in the later courses in this sequence when the courses were initiated. But the media were never used extensively in Humanities Common Learning -- due in part to the problems encountered in the other parts of Common Learning, and in part to the nature of the subject matter.

Putting the Plan into Operation: 1966-67, 1967-68:

As was stated above, much of the summer of 1966 was spent in preparing to teach the first Common Learning courses in the fall

of 1966. Production of television tapes was begun in Mathematics-Natural Science and Social Science for the first courses in each sequence. Course outlines were worked out. Lab manuals were prepared, and reading lists developed. In Humanities, the first course was much like a combination of the first courses in Speech and English before the change to Common Learning, and it was conventionally taught. The main problem was selecting staff. However, the committee did have to decide what the emphasis in the course should be and how to divide the course between written and spoken communication.

Logistics had to be considered in all areas -- it was not easy to select the faculty which would teach in the Common Learning; which departments would supply them (since the Common Learning had no faculty of its own, but borrowed from the departments involved); where the courses would meet; and how to work out the television playback schedules so that everyone would be able to receive programs as needed. Equally, the load on the audio-visual section of Instructional Communications was heavy -- especially since the new courses leaned on this section heavier than any courses had before.

The first students to enroll in the Common Learning started taking courses in September, 1966. An effort was made to explain

the reason behind the introduction of the Common Learning, why the new techniques of teaching were employed, why the large class sections were used, etc., in the beginning of each course sequence. However, no trial period was mounted, and there was no institutional experience to draw upon. Problems did arise with the teaching methods used.

The program was unpopular as was the four-course plan -- with which it was often confused. Student grumbling and discontent was pronounced. This student discontent was matched or overshadowed by faculty discontent among many of the newer and less well-briefed faculty. The newer methods, especially the TV tapes, became the focal point for much of the discontent concerning the program felt by both faculty and students. The situation became critical before the original Common Learning plan had been in operation long enough to prove its value. Sweeping changes in thought took place among the faculty involved even before changes in the program itself were suggested, or were accepted.

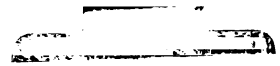
Tape production continued in the two sequences using television teaching during the 1966-67 academic year, and into the summer of 1967. However, the cast of television teachers changed, as did the objectives and techniques of the course. The new TV teachers in certain cases were better on the medium than those they

replaced, but were no more experienced. The net result was that the overall quality of the tapes did not significantly increase. The mechanical measures involved -- the actual distribution of lessons by means of the campus closed circuit system, the placement and reliability of receivers, the actual scheduling of replays, etc. -- improved, but early failures had left a residue of distaste for the technique in many minds. This was hard to dispel, even when technical reliability increased.

Organizational Structure:

The organizational structure of the Common Learning requires some special comment. As pointed out earlier, the original thinking for the Common Learning was done in the Curriculum Committee of the Faculty Senate, and later in its "Subcommittee on A Common Learning." However, when the program was actually adopted, it was entrusted to three curriculum groups, each under the supervision of a coordinator. These committees each represented one of the three subject-area groups of courses, and had a representative from each of the departments which had teaching responsibilities in the given area.

In addition, a Dean of Common Learning was appointed early in the first academic year when the first Common Learning courses



were taught. He was responsible after his appointment for the conduct of the program of A Common Learning.

However, the Dean had no faculty. The hiring and other personnel duties and responsibilities for the faculty of the Common Learning fell to the Department Heads of the academic departments involved. In fact, these faculty members continued to report to their academic department heads, rather than to the Dean of Common Learning. As might be expected, this situation caused considerable administrative trouble.

In the early years of the program, the Dean of Common Learning reported directly to the Academic Vice President, and was, on the organizational chart at least, on a par with the other academic deans in the University. He worked closely with the faculty of the Common Learning program, but had no direct authority over them. Neither did he have charge of the people who produced the television and audiovisual portions of the program. At that time, the Coordinator for Instructional Communications reported directly to the President of the University, though it was his responsibility to work closely with all units of the University structure. Later, he reported to the Academic Vice President, as he does at present.

The organizational structure of the Common Learning program during 1966-67 and 1967-68 is shown in Figure 2. For orientation in its environment, the larger system which was the University

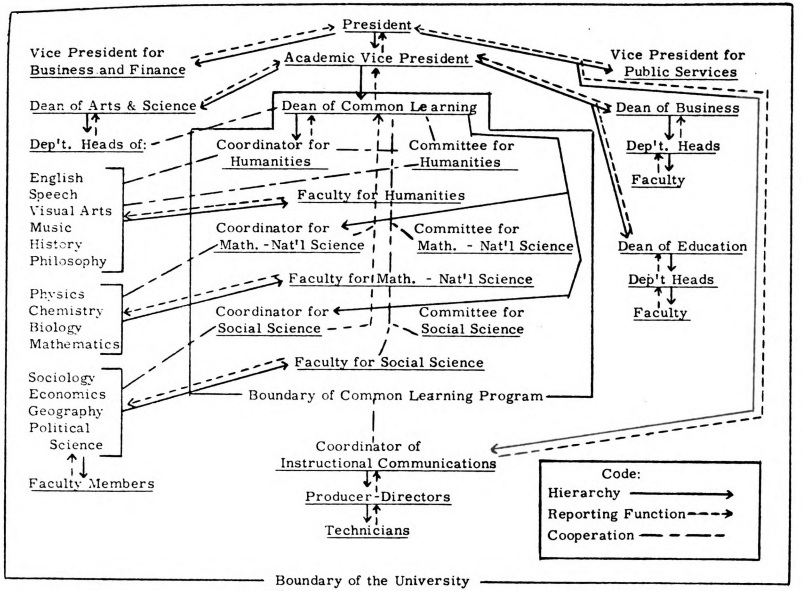


Figure 2 -- ORGANIZATIONAL STRUCTURE OF COMMON LEARNING: 1965 - 67

itself is shown surrounding the Common Learning system. Three functions of this structure are noted by appropriate lines with directional indications; 1. the hierarchical flow (with its formal communication) downward to descending levels of the organization; 2. the reporting function (formal communication), flowing upward in opposite relation to the hierarchical structure, and finally, 3. the probable flow of influence, cooperation, and the like (informal communication), as determined by observation, questioning of those in the organization, the who-to-whom survey, and review of University records.

It is apparent from a study of the chart in Figure 2 that most of the teaching in the Common Learning was actually done by faculty from the College of Arts and Sciences. Almost none was done by either those in the Business or Education Schools. This fact is important in view of a later change which put Common Learning entirely in the College of Arts and Sciences.

Information Flow:

Since this study is quite concerned with message flow, both in terms of innovation transmission, and the transmission of change in the adopted system, it seems worthwhile at this point to indicate the formal and informal message flow which seemed to exist at this period. This message flow is indicated in Figure 3, and can be seen to closely parallel the organizational chart shown in Figure 2. Down-flow of messages followed the lines of authority; up-flow of messages

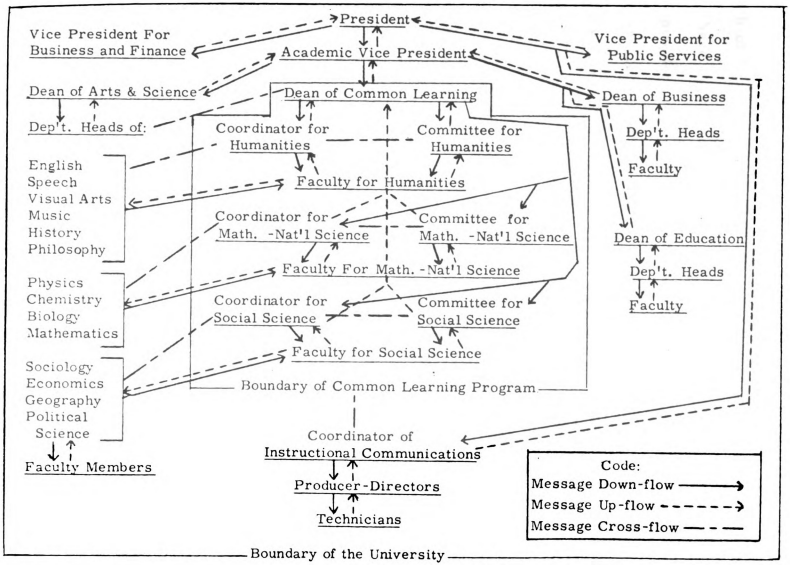
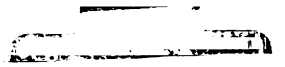


Figure 3 -- FORMAL MESSAGE FLOW IN COMMON LEARNING: 1965 - 67

followed the reporting function, while the cross-flow indicates the same type of flow as shown in Figure 2 for influence and cooperation. Much of this cross-flow was informal in nature. The important fact here is that, while the up and down flow of messages followed organizational lines, much of the more important message flow went across organizational lines by means of the routes of influence and cooperation. These were the messages which activated the day-by-day activities of Common Learning. Since these usually did not reach the department heads, these people later complained that they did not know what was going on in the program. The clique structure uncovered by the communication questionnaire existed mostly through the use of such informal cross-flow of messages.

The Program in Flux:

As noted earlier, the Common Learning program was in flux even before its formal start in the fall of 1966. Many operational and organizational changes from the original conception of the program had occurred by that time. These changes had come about for several reasons: 1. because of the departure of key individuals from the program (the Academic Vice President and the Mathematics-Natural Science Coordinator); 2. because of the failure to hire important individuals in time (the faculty which taught most of the sections, and some who taught TV lessons, as well as the two TV



producer-directors); and 3. because of changes in thought (the use of TV as a teaching device was actually a change from the original concept which the academic vice president had planted -- in the original concept, the courses would have been taught by very large lecture sections, followed up by small group discussions. The TV lessons were used to fill the "large group lecture" function.)

However, after the start of the use of the lessons in the Common Learning in the fall of 1966, changes continued to come about. These seem to have occurred primarily because new faculty, poorly oriented, were brought into the program; because many faculty members preferred to teach in their own disciplines, rather than in an inter-disciplinary program; and because relatively little effort was made to properly explain the program to the students. An interview with the Dean of Common Learning which appeared in January 1967 in the "Northern News," the student newspaper, indicated the extent of these changes.

By this time, television teaching had been selected by an "activist" group of students as a program to be opposed. Interestingly, most of these students were not themselves taking the courses. The paper's editor, who conducted the interview, pointed out that "a group of students" had become concerned with "the academic climate," and that he wished to question the Dean about "situations in the Common Learning which are going to be revised, or that are coming in

for study and possible change, including the television courses."

The Dean replied:

> Television is only one aspect of the instruction which takes place. It is not the whole course. Most of us believe that we are not using television to its best advantage yet. This is as much a fault of the human element as it is of the medium itself. . . . Next semester (the second one the course was taught) there will be some changes. Instruction in Math-Natural Science 122 will be in small groups three days per week. The television will still come through twice a week, but the tapes will only last from 25 to 30 minutes. There will be a teacher in the classroom with the students, who will introduce the tapes, discuss the tapes, answer questions about what took place on the tapes, and raise questions for discussion purposes. . . . Hopefully, there will be more integration between the lecture-discussion periods and the lab. . . . As we go into the next semester, the stress on mass common examinations is going to be minimized considerably, and may be abolished. This will put the total responsibility for examinations in the hands of the individual instructor, who will make up his own examinations. . . . In the area of the Social Science, there have never been mass examinations. . . .
>
> In the Social Science, we will run four sections. These will meet for two hours on two different days per week. During the first 30 minutes of the two-hour block, there will be a television tape, and the remaining hour and a half will be there (for discussion and follow-up). We think this will be an improvement over what we have done in the past. . . . A primary consideration was whether we should keep discussion classes down to thirty or less, and use some television as an integrating medium, or whether we should let them go to sixty or more. The feeling was that it would be better to have discussion classes of thirty or less, meeting two days a week with the instructor, than to meet four days a week with an excess of sixty students per section, and not have the benefit of the contributions of the various disciplines.
>
> Committees will be working again this spring to make further plans for next year. What they do and what they propose will come out of their experience with what we are doing now.

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> Not only are we learning from the students' reactions, but we are also learning from how the faculty reacts to the courses they are teaching. The more we learn about what we are doing, the more likely it is that we will continue to make changes -- hopefully to provide greater opportunity for students to receive what some of us still refer to as a basic liberal education. . . .

The Dean also pointed out that change was taking place in the Humanities area, but this seemed less than in the other two areas. He felt that some changes in organization would take place in Humanities as a result of committee work. The Dean also pointed out that the senior seminar would probably be offered on a limited scale in the fall (1967). Finally, he stated that he felt the faculty was enthusiastic about the whole program. He explained:

> I think our faculty are convinced now that this is not a fixed program and we can work with it and make qualitative improvements. They see, too, that the courses can be made respectable and satisfying. . . . We have a faculty that is responsive to students, and continually asks questions about what is being taught and how students react. They raise questions about student interest -- the kind of questions students ask, what kinds of things students find meaningful.
>
> From my point of view, this is important. It is a little bit too early to make any final decisions on whether everyone is satisfied with the way the Common Learning is developing. There are many people working, and we are discussing every aspect of each course in the program. . . .
>
> It is very difficult to measure the absolute success of a program. I think it must be looked at in light of what our past experience has been as well as what we would like to see. I think what we are doing right now is better, qualitatively, than what we were doing a year ago, two years ago, or three years ago in our introductory courses that were in general education. It is not, however, what those of us working in Common Learning want it to be.

It is easy to see from the above report of the Dean of Common Learning to the student newspaper that forces were at work for change in the program. It is also rather evident that a source of strong leadership -- the academic vice president who persuaded and guided the faculty to the original adoption of the program of Common Learning -- was no longer present to guide the plan.

The same ferment noted above continued during the remainder of the 1966-67 academic year and during the 1967-68 year. Techniques and subject matter taught in the Natural Sciences and the Social Sciences, as well as the Humanities, continued to change. For example, mathematics was dropped from the Natural Sciences.

Meanwhile, growth of the institution itself continued steeply upward, making another 23 percent growth in 1966-67, and close to the same amount in 1967-68 (see Figure 4). This growth meant that many more new instructors came to campus. Many older ones found different positions and moved on. Many of those who had taught in the first Common Learning courses left. (See Tables 1 & 2.) In addition, another academic vice president left the University. Finally, at the end of the 1967-68 academic year the Dean of Common Learning himself departed from the institution for a different position.

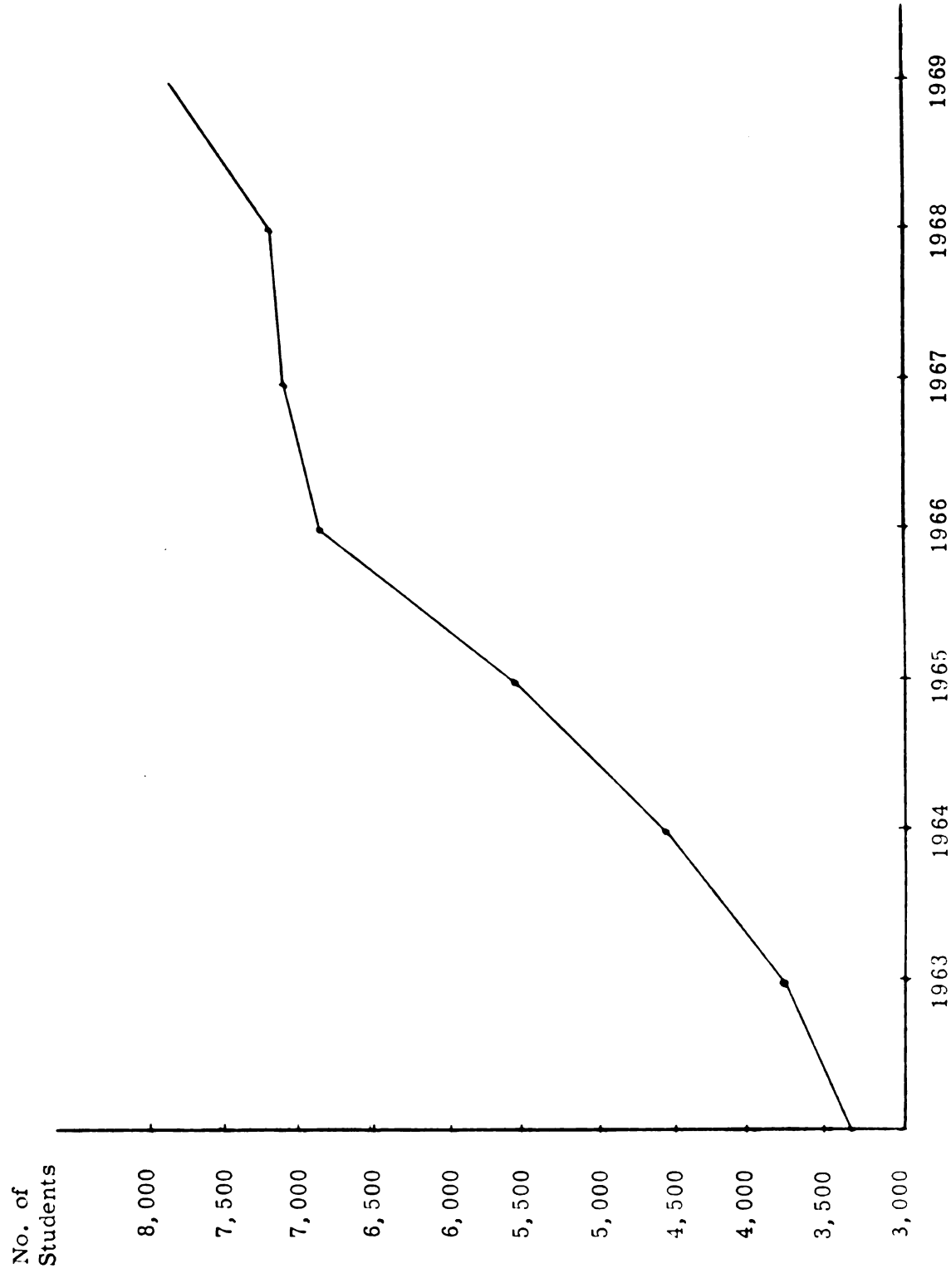

Figure 4 GROWTH OF THE UNIVERSITY, 1963-1969

Attempts at Evaluation:

As stated earlier in this account, a systematic and comprehensive plan for evaluation was projected as a part of the two Common Learning sequences incorporating television. No such objective evaluation was planned (or carried out) in Humanities. It was expected that this evaluation of the two science sequences would be carried on as a means of teaching (providing recall and reinforcement opportunities), and as negative feedback to act as a guidance mechanism for improvement of the courses. Of course, to be successful and useful, either of the above purposes depended on a statement of the behavioral objectives of the course, so that the evaluation could be, truly, systematic.

Such behavioral objectives were in fact never formulated in these courses. The coordinator who had originally planned this sort of objective statement and evaluation left the program. The objectives were actually specified only in general, descriptive terms.

Evaluations were made -- in fact they were made in large number, as this account indicates. However, these course evaluations were never objective, but were always subjective in nature. They never tested actual learning as judged by comparison with stated behavioral objectives, but only student opinion of the courses. To illustrate this approach, let us explore a report of one of the evaluations, printed in June 1967. This was an evaluation of the Social Science program. In it, the writer states:

> The term "evaluation" denotes the Common Learning students' subjective impressions of the program. . . . The purpose of this evaluation was to assess the merits of the different procedures employed by the instructors in the classrooms, to weigh the students' opinions of their learning experience, to rate the reading material, to appraise the effectiveness of the television panelist, and to gain an overall impression of the Common Learning program as viewed by the students. . . . In short, these data reported in this paper are based on the students' perception of the Social Science Common Learning 131 course.

The writer of the report points out that questionnaires were given to 1,346 students of the course. Sixty-two percent were male, 37% were female (one percent did not state sex). The conclusions of the study are of most interest here. In the Conclusion, the writer states that:

> Students gave a fair evaluation of the Social Science Common Learning program. 63% said that their work in the course had been beneficial and rewarding in terms of their future goals in life. Except for their perceptions of their discussion leaders' abilities, they saw the reading materials, the television panelist, and the course as a whole as adequate. . . .
>
> Most of the students perceived their instructors as having a negative attitude toward the course throughout the semester, as not taking an interest in giving a good course, as not encouraging questions in class, and as not permitting students to state their points of view.
>
> The television panelist seemed to fare better than all other categories on the questionnaire.

This last statement is in direct contradiction to the views expressed in the many student activist discussions, and in the committee deliberations -- in which the television portions of the courses

were perceived as the weakest elements in the whole fabric. Note, too, that the students realized their instructors were negative to the course. The complete results of this evaluation are included in Appendix E.

In January 1967, an attempt to evaluate the Natural Science program was made. This was in two parts: 1. A rating on a five-unit scale of six elements of the course -- television lessons, laboratory periods, recitation-discussion periods, evening review sections, text books, examinations, as well as the student's opinion on whether or not learning was achieved in the course, whether the course stimulated thought and action; and the student's general impression of the course; and 2. A "constructive criticism" of the course in essay form. It is obvious that this whole process was subjective on the part of the students.

The report on this study states (interestingly enough) that, "401 opinionaires were returned and carefully read. Only constructive opinions were counted. No count was kept of those who said 'drop the course'." A list of "constructive criticisms," in order of frequency, followed. The first seven of these, with numbers of replies above 42, follows:

1. Better correlation between lecture, discussion and lab (64)
2. Material should be less general or more detailed (58)
3. Better preparation of TV tapes, technical difficulties, misspoken words or statements, errors, boring, level of difficulty was third grade vs level of difficulty too great for non-science background, etc. (50)

4. Discussion should follow tape immediately (50)
5. Discussion sections should be handled by an expert in the field being discussed (50)
6. Different textbooks, better textbooks, fewer, more basic (43)
7. Longer periods for discussion or more of them (42)

It is clear from the above that many statements about TV lessons were grouped in this report to achieve the high rating in numbers of replies given. Incidentally, ten persons in this study stated that there were no objectives clearly stated in the course so they could know what was expected of them. Complete results are given in Appendix E.

The results of the analysis of the first part of the survey are shown in Table 4.

TABLE 4

Results of Social Science Student Survey

Course Elements	Excellent %	Good %	Average %	Fair %	Poor %
TV Tapes	1	8	34	32	25
Learning in the course	1	7	36	32	34
Entire Course	1	7	30	31	27
Evening Exam Review	15	35	30	11	6

The above review of two evaluations given to students in the Common Learning courses illustrates the type of evaluation methods which were used. Of course, grades were given in each course to all students. But, as far as can be determined, no comparisons were made with grades of comparable student groups under the previous "group distribution" system. In fact, it is doubtful if such comparisons would have been valid, in view of the radical curriculum changes. Of course, many faculty group discussions were held (see the following two sections of this chapter), but these too, were subjective, and seem to have had little or no objective criteria on which to base the conclusions reached.

A Tentative and Preliminary Report: On May 17, 1968, the Committee on Undergraduate Programs (successor to the older Committee "A", the curriculum committee) issued a "tentative and preliminary report" on the Common Learning program. It is revealing of the process which had gone on during the two academic years of the program's life to that point, as well as the subjective nature of the evaluations of the program which had taken place. The report stated:

> This past February the Committee on Undergraduate Programs began a study of the Common Learning Program. . . . The method of investigation used was to bring in a variety of faculty members, interspersing this with meetings in which the Committee collectively discussed its impressions. . . .

> It is perhaps premature to make a very thorough report at this time, especially in view of the fact that we intend to carry on the Committee's deliberations in the future. . . .
>
> It is clear that the Common Learning has been subjected to a good deal of criticism, constructive, or otherwise. The Humanities program was more favorably viewed by the Committee's visitors than Social Science or Natural Science. In light of the changes that are being made in the latter two programs, one has to be careful to distinguish whether the criticism is directed against last year's program, this year's program, or the program in principal.

The report went on to state that the department heads were especially critical of the Common Learning program. Their major complaints had to do with staffing and with the fact they perceived their commitments to Common Learning as decreasing the number of departmental courses they could offer. Faculty members with a desire to teach in the type of program which the Common Learning represents were hard to find, as were people with the ability to do so. Interestingly enough, while student protests were aimed at television, the department heads' dissent was not.

The report continued:

> Matters of administration and communication, also, were subjected to certain criticisms. Some department heads felt they were not always too much aware of what was going on and that they were out of touch with their staff members who had Common Learning commitments. . . . In some courses, parts of the individual course, texts, lectures, laboratories, discussions, etc., were not well coordinated. . . . Some argued that they demanded too much of our students, while others stated that some courses were merely a repetition of what students had covered in high school. This seeming inconsistency might reflect the

> fact that we are requiring all our students, regardless of their background, to take the same courses. . . .
>
> (The foregoing comments) are not necessarily so serious as to lead to a recommendation to make radical alterations in the Common Learning. In most instances, it was not so much the rationale of the program that was under attack as it was the organization or methods of instruction. . . . Another comment that might be made is there is a good deal of change going on within the program, although, perhaps, not all of those concerned are fully aware of it.

Changes listed as underway were: 1. Mathematics was dropped from the Math-Natural Science series after a year; 2. an experimental program in this area (without TV) was established; 3. reorganization was started in the Social Science courses (with TV continued), while some alternative courses were instituted; and certain modifications in Humanities, such as fewer lectures and more discussions, were planned. The report continues:

> A final question to be considered in terms of serious criticisms of the Common Learning is this: Are there better alternatives? Prior to the introduction of the Common Learning, Northern operated under the group distribution requirement system . . . If any serious thought would be given to eliminating the Common Learning entirely, there would have to be serious consideration as to whether this or some other possibility would be better.
>
> (For the coming year, 1968-69), there will be no immediate appointment of a new Dean of Common Learning. There will be about a half-a-dozen coordinators for the whole program . . . The overall coordination and administration . . . will fall into the office of the Dean of Arts and Sciences. The Common Learning will be subject to the continuing review that a program of this nature should have.

Though not stated above, the administration of the program actually went to the Associate Dean of Arts and Sciences, on a part-time basis. This arrangement was continued until the summer of 1969, when an Associate Dean for Common Learning was appointed and placed under the Dean of Arts and Sciences.

The program continued in ferment, as suggested by the last paragraph of the Committee on Undergraduate Affairs report during 1968-69, and is still continuing. In fact, conditions in the University as a whole acted as a spur to the continual change and re-evaluation which was taking place, as did certain events on the national scene. Let us trace some of these events in the larger environment of the program.

First, the president of the University, who had served it for almost 12 years, and who had brought about growth of the institution from a student body of about 700 to over 7,000, resigned in the spring of 1967. He was replaced on a temporary basis by a man who was then the Chairman of the Board of Control -- a pleasant, well-meaning man, but one who had only a Master's degree. Many faculty members did not respect this interim president. At the same time, the academic vice president (who had succeeded the academic vice president who first promoted the Common Learning) left to assume a new position; the Dean of

Arts and Science was promoted to become the new academic vice president. This man was quite able, but not very forceful. Thus, a lack of strong academic leadership was apparent during the 1967-68 period.

At the same time, a serious controversy arose over the failure of the University to renew the contract of an assistant professor who had been an activist opposing some of the policies of the old president. This quarrel was inherited by the acting president, who seemed quite unable to cope with it. The campus became polarized, with most of the "liberal" faculty and some who were not so liberal siding with the ousted assistant professor. Again, the establishment of Common Learning was viewed by both many newer faculty (who were not aware of the history of debate and planning which preceded the program) and most of the student body as an authority decision, fostered by the old president and his academic vice president (now both departed). For this reason, the program became a popular one to oppose, along with other "administration" activities. While little true educational reasoning went into this opposition, it was real enough. This was especially true in regard to television teaching, which everyone knew had been a favorite of the old president.

Meanwhile, the nationwide student unrest was being felt at Northern. At first, this took the form of opposition to the Common

Learning, especially the TV courses. Later, the case of the ousted professor became more important, but opposition to the Common Learning still continued.

A new president was appointed by the Board of Control, after an intensive search, in the spring of 1968. He officially took office in July, 1968, but had spent considerable time on the campus during the spring calming diverse elements and gaining an understanding of the problems which existed. During this time, the new president announced that he would establish three "task forces" when he took office; 1. on the future of the University; 2. on Academic governance, and 3. on student affairs. He also picked a new academic vice president, since the academic vice president (who had been promoted from Dean of Arts and Science) resigned in the spring of 1968, rather suddenly. Incidentally, the new academic vice president was the fourth since the start of the Common Learning program. Thus, a new top administration took office that summer.

The Task Force Study:

The new president did appoint a task force on the future of the University as one of his first official acts. This task force set out to study, among other things, the Common Learning program. During the fall and winter of 1968, meetings were held,

deliberations were carried out and hearings were conducted at which all members of the University were invited to testify concerning this program. Under a heading "Task Force Presents Tentative Common Learning Recommendations," the Northern News of February 14, 1969, reported the tentative results of these deliberations. The story said:

> The Task Force on the Future of the University has consulted with students, faculty members and administrators with respect to Liberal Education at Northern. We recommend the retention of a program which provides, in addition to specialized training in minor and major disciplines, a broadening and stimulating intellectual influence. . . . Most people feel that (the present Common Learning program) is sound in conception.
>
> We recommend adherence to the goals of the present Common Learning program . . . with increased emphasis on writing and discussion by the students. . . . The name of the program should be changed from Common Learning Program to Liberal Studies Program. This is suggested because the element of commonality in the present program has never been satisfactorily defined nor implemented, because the term "Common Learning" may imply "ordinary learning," and because the goals of the proposed program are primarily to provide a liberal education for our students. . . .
>
> A full-time Associate Dean should be appointed, who has special qualifications in the area of liberal education, to be responsible to the Dean of Arts and Science, and to be delegated the authority for seeing that appropriate special departmental courses and interdisciplinary courses are offered. . . . The Associate Dean of the Liberal Studies Program and the Department heads should work together to insure that the Liberal Studies Program instructors are: (1) qualified, (2) interested, (3) responsible, (4) notified of their teaching assignments far enough in advance for them to prepare their courses, (5) rewarded in some way for their willingness to teach in the Liberal Studies Program, (6) specifically

> recruited on the basis of their experience and interest in teaching in the Liberal Studies Program, and (7) enabled to teach what they are most qualified to teach while at the same time contributing to the Liberal Studies Program.

After the task force report noted above was published, the task force announced a series of hearings to get faculty and other University opinion on what they had proposed. These hearings were held on February 19 and 20, 1969. While the Task Force encountered some opposition to their proposals, and while some faculty defended the present system of a Common Learning, most of those who criticized the Task Force Report were displeased with details in the report, not in the total thrust of the new proposal.

Some of the recommendations concerning the Common Learning which the task force made have already been carried out. A new Associate Dean for Common Learning has been named under the Dean of Arts and Science, and he has started working with department heads to try to provide better faculty for the program. He has also worked with Learning Resources to plan the more effective use of the media of education in the whole Common Learning program. The spirit of the Task Force report is being implemented, though the name change which they recommended has still to take place.

Summary of the History, or Life Cycle, of the Common Learning Program:

In summary, the program which was named the Common Learning at Northern Michigan University seems to have developed, as far as a historical search can determine, partly as a result of an outside pressure (the new Michigan Teacher Certification Code) and partly because of the urging and pressure of an academic vice president who wished to have the institution adopt this innovation. This vice president was able to persuade and bring along with him enough faculty support to gain a majority faculty vote, though this majority was reached on the second trial, after extensive modifications were made to the original program.

After the vote, continued modifications were made in the program, largely by administrative fiat. It thus had already begun to change in format and conception before the first classes were taught. Because of continued opposition of some faculty and students, and a quite lukewarm acceptance on the part of others, the program continued to be modified, with courses being changed significantly each semester. These modifications were, however, not the result of a systematized negative feedback control, but seemed to assume a sort of random hunting technique which did not result in significant improvement of the program as judged by faculty and student

satisfaction. Improvement of learning is hard to evaluate in absence of course objectives or valid comparisons.

Continued modifications in the environment of the Common Learning program -- the University itself -- also affected the program in various ways. Most noticeable among these changes were 1. the rapid turnover of top academic administration during this period (resulting in a vacuum of leadership at this level), and 2. the controversy which embroiled the whole University over the dismissal of an assistant professor, and 3. a high level of faculty turnover. Common Learning was significantly affected by each of these institutional upheavals.

Finally, a Task Force on the Future of the University, appointed by the new President, has made a series of suggestions for redesigning the program, and for reconstituting it along "Liberal Studies" lines. This recommendation has brought the University close to the point at which it began -- with something very much resembling "group distribution" requirements for all students. Thus we have come full circle, and the life cycle of the program has run its course from birth to something close to system death.

In the realm of the use of media in education at Northern, a sub-innovation of the curriculum change -- television teaching -- was adopted on a large scale for the Common Learning program.

It was proposed for use in a systematic manner. Due to circumstances and time pressures, however, course objectives were never defined, and the TV lessons were not skillfully produced or properly used. Young instructors who had no television experience were employed as TV teachers. The producer-directors were also inexperienced, and neither producer-directors nor faculty were hired early enough to allow adequate lead time for proper planning and production. The result was that many low-grade tapes were produced in a very short time. Also, these tended to become the scape-goat for those who did not like the total program, and who wished to discontinue it. Critics of the program succeeded in having most of the television portions dropped, except in the Social Science sequence. By 1969-70, all of the original TV tapes had been dropped, even in Social Science. The perceived failure of TV in the Common Learning has, in turn, set back the use of mediated instruction at Northern, since many faculty now blame the media for "the failure of Common Learning."

CHAPTER V

RESULTS: PART I OF QUESTIONNAIRE

Who Communicated with Whom?

In all, 190 questionnaires were sent to persons who had taught in the Common Learning program, administration members, and others who had a part in planning or operating the program at Northern. The first portion of these questionnaires asked whom each respondent had communicated with at two different time periods -- before 1966 and after 1966. The results of this portion of the questionnaire are reported below. Results of the second part of the questionnaire are reported in the following chapter.

Not everyone to whom questionnaires were sent was able to fill out both parts of the questionnaire. Of the 190 persons to whom questionnaires were mailed, only 106, or 56%, were at Northern before 1966. Eighty-four, or 44%, arrived after that period. Of the 106 who were able to comment, 71 persons, or 68%, actually answered the portion of the questionnaire concerning the pre-1966 period. One hundred and twelve, or 59% of

the 190 total, returned replies for the second half of the questionnaire. (See Table 5.)

As can be seen by Table 5, the percentage of persons responding in the pre-1966 group was 9% higher than in the total group, while that of those present after 1966 was 10.3% lower. The response by those in the pre-1966 group was about 20% higher than by those in the post-1966 group. Several factors may have contributed to this differential response rate: 1. Those present before 1966 may have been more interested in the progress of the innovation, and thus have been more willing to respond; 2. The pre-1966 group may have felt more knowledgeable about the innovation; 3. The post-1966 group may have felt unqualified to answer by reason of their late arrival on campus.

Table 6 shows the results of the questionnaire by function in the University of those responding. The percentage of answers by the administrative group were larger in both the pre-1966 period and the post-1966 period. Twenty-four percent more administrators than faculty answered the pre-1966 section of the questionnaire, while 21% more answered the post-1966 section. This may well have been due to the fact that only 14% of the administrative group was new since 1966, as shown in Table 6, while 47% of the faculty was new.

TABLE 5

Total Population of Study, by Arrival Date and Response

	Response		No Response		Totals	
	No.	%	No.	%	No.	%
Group 1*	71	68	35	32	106	56
Group 2**	41	48.7	43	51.3	84	44
Totals	112	59	78	41	190	100

*Present before 1966
**Not present before 1966

TABLE 6

Respondents to Part I of Questionnaire by Function

	Response		No Response	
	Pre-1966	Post-1966	Pre-1966	Post-1966
Administration				
No.	21	23	8	7
%*	72	76	28	24
Faculty				
No.	44	85	11	70
%*	56	55	44	45
Other				
No.	4	4	0	0
%	100	100	0	0

*Pre-1966 figures based on number present before 1966:
Administration - N=25. Faculty - N=76.

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Table 7 shows the response to Part I of the questionnaire by present location. Of those responding to the pre-1966 section only 62.5% were still at Northern in 1969, while 79% of those responding to the post-1966 section were present in 1969. Twenty-seven percent of those responding to the pre-1966 questions had left the University, while 21% of those responding to the post-1966 questions had left. Obviously, a high turnover of personnel existed during the life cycle of the innovation. This, as discussed in Chapter XI, contributed to the trend toward modification of the innovation.

As noted in the methods section, data from the questionnaires was reduced by computer manipulation, and was presented in three forms: 1. As a raw data print-out, 2. in a form showing all those respondents who had reciprocating co-respondents (i.e., each of a responding pair communicated with the other), and 3. as "Totally Communicant Groups." This later term means that of the groups shown, each member reported communicating with each other member of that group. Persons with links to a number of groups are thus liaison persons. Those having the most links are the most important as group liaisons, since each link connects with a totally communicant group.

Two further steps were taken with the data: 1. By inspection of the listing, the number of links between groups was

Administ

Faculty

Other

Total Popu
tion, 1969

At Northern

Departed by

Total N

TABLE 7

Population of Study by Function and Time of Arrival at Northern

	Present Pre-1966		Not Present Pre-1966		Total N, 1969
	No.	%	No.	%	
Administration	25	86	4	14	29
Faculty	77	53	80	47	157
Other	4	100			4
Total Population, 1969	106	56	84	44	190

TABLE 8

Respondents to Part I of Questionnaire by Present Location

	Pre-1966		Post-1966	
	No.	%	No.	%
At Northern, 1969	44	62.5	89	79
Departed by 1969	27	37.5	23	21
Total N	71	100	112	100

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determined for each person showing multiple links, and 2. groups were classified or categorized according to the type of persons making up their membership. Table 9 shows a summary of the findings.

Results at T_1, Pre-1966

As noted above, 71 replies were received for this part of the questionnaire. The number of subjects who had responding communicants (i.e., persons who responded to their communications) was 58, or 83%, at this time period, and the average number of communicants per subject was 6.71. The number of "totally communicant groups" identified was 37, and the number of members per group was 3.59, with a standard error of .72.

As originally presented, the results of the computer manipulation indicated an inflated number of "totally communicant groups." The term "totally communicant groups" referred to groups each member of which reported communicating with all other members. Inspection of the data revealed that the 37 groups, listed above, could be collapsed into 30 groups. This was due to the fact that several of the groups shown actually contained the same members, but with the addition of a single liaison person or satellite person. (A satellite person was defined as one who appeared to have only a single link communication with the group and who was not a

TABLE 9

Summary of Data from Part I
of the Questionnaire

	Pre-1966	Post-1966
Total Population	106	190
Responding Sample	71	112
Percent Returns	68%	59%
No. with Responding Communicants	58 (54%)	111 (58%)
Avg. No. of Communicants Per Subject	6.71	11.8
Totally Communicant Groups:		
1. As printed	37	146
Avg. No. per Group	3.59	3.85
2. Collapsed	30	102
Avg. No. per Group	3.7	3.5
No. Liaison Persons	18	50
Avg. No. of Links	4.7	5.9

liaison person with other groups.) Using this method, five such multiply-listed groups were found. Four were listed twice, while one was listed four times. Thus the total number of groups was reduced by seven. Listed with these five groups was a total of ten different liaison persons and five satellites. (See Figure 5 for a demonstration of the collapse of such a group. In this case, the true totally communicant group was numbers 15-22-23. The other persons were liaison persons and satellites.)

Before:	8*	15	22	23	114**
	9*	15	22	23	120**
After:		15	22	23	

*Liaison persons
**Satellites

Figure 5 -- Collapse of a Multiply Listed Group

Categorizing Groups:

In order to determine what units or portion of the University were represented in each of the groups reported, a categorization of them was made. The results are shown in Table 10.

It seems obvious that the administrative group was quite active during this time period in communicating with each other about Common Learning. Four totally communicant groups, or

TABLE 10

Categorization of Groups, Pre-1966

Category of Group	No. of Groups	No. of Persons	Avg. No. of Persons per group
Administration	4	17	4.2
Departmental	6	17	2.8
Administration - Faculty (joint)	10	37	3.7
Natural Science	2	8	4
Natural Science (television)	3	10	3.3
Social Science	1	3	3
Social Science (television)	2	6	3
Senate	2	7	3.5
Total:	30	105	3.5

cliques, were composed of administrative members alone. Seventeen administrators of a total of 29, or 59%, were involved in these cliques. Also, there was considerable cross-communication with the faculty at this period. Ten cliques, including 37 people, were made up jointly of faculty and administrators. Actually, the departmental groups also contained a member of the administration -- the department head -- in every case except one. Finally, 13 of the 18 liaison persons identified at this time were members of the administration.

The subject area-television links were working cliques engaged in making TV lessons. They each contained a TV producer-director and TV teachers.

The Natural Science and Social Science area cliques were composed of persons engaged in planning in these areas. The senate groups were composed of members of the faculty senate, most of whom were also members of Committee "A".

Liaison Role Persons: Liaison role individuals were selected as indicated by the number of contacts these persons had between groups. Results of this determination are given in Table 11. Liaison persons are defined, for this purpose, as those with three or more reciprocated contacts between groups after the groups were collapsed by the method discussed above. Persons with one

Numerical Designation	
8	
22	
7	
13	
24	
21	
9	
114	
6	
128	
25	
18	
183	
139	
23	
184	
52	
16	

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TABLE 11

Liaison Individuals, Pre-1966, by Role and Links

Numerical Designation	Role in the Organization	Total No. of Links	Groups Linked
8	Dep't Head (Hist) Com. "A"	8	Dep't, Nat. Sci., Administration (3)* Admin.-Faculty (3)
22	Dep't Head (Eng) Acad. Dean	6	Administration (2), Admin.-Faculty (3), Senate
7	Faculty Member Acad. Senate	6	Senate, Admin.-Faculty (3), History Dep't.
13	Dep't Head (Physics) C. L. Coordinator, Senate	6	Senate, Nat. Sci (2), Admin.-Faculty, Nat. Sci. TV (2)
24	Dep't Head (Soc.), C. L. Coordinator	6	Admin.-Faculty (3), Soc. Sci., Senate, Soc. Sci. (TV)
21	Grad. Dean	5	Admin (3), Admin.-Fac., Nat. Sci.
9	Dept' Head (Eng.) Senate	5	Admin. (2), Admin.-Faculty, Dep't., Senate
114	Faculty (Bio.), Com. "A"	5	Admin.-Faculty (4), Nat. Sci.
6	Dept. Head (Chem)	4	Nat. Sci. (2), Admin., Admin-Faculty
128	Faculty (Geo.)	4	Admin.-Faculty (3), Dep't.
25	Dep't Head (Bio.)	4	Nat. Sci., Admin.-Faculty, Nat. Sci. (TV) (2)
18	Dep't Head (Geo.)	4	Admin.-Faculty (3), Dep't.
183	Faculty (TV-Nat. Sci)	4	Nat. Sci. (TV) (3), Dep't.
139	Faculty (Bio.)	3	Nat. Sci. (2), Admin.-Faculty
23	Faculty (Hist.), Com. "A"	3	Admin.-Faculty (2), Dep't.
184	Dep't Head (I. C.), TV Production	3	Nat. Sci. (TV), Soc. Sci. (TV), Dept.
52	Faculty (TV-Soc. Sci)	3	Soc. Sci. (TV) (2), Dep't.
16	Dep't Head (Pol. Sci.)	3	Admin., Admin.-Faculty, Dep't.

Total Liaison Persons - 18
Average No. Contacts - 4.06

*Numbers in parentheses indicate number of groups of the type linked.

or two between-groups contacts were ignored in this determination, as suggested by Weiss (1956), as being "bridge persons." They are important in the total communication structure, but are not considered to hold a true liaison role.

As can be seen from the above table, eleven of the liaison persons listed were department heads or held another administrative position at the time period in question. Seven of these persons were "ordinary" faculty members, though most of them also filled other roles. Only one of them had no other pertinent role in regards to Common Learning. Three of these persons were members of Committee "A", the curriculum committee of the Faculty Senate, and another was a member of the Senate itself. Three of these liaison role persons were concerned with the production of the television lessons which became a part of Common Learning in the fall of 1966. Of the 18 persons identified, only seven had single roles. Said in another way, 11 persons played multiple roles in regard to Common Learning and the University during this period.

Considering the "stars" of this group -- those persons with five or more contacts -- the most important liaison person appears to have been the History Department head, who had also been a member of the Faculty Senate's Committee "A" since its inception, and who was chairman of Committee "A" during 1965-66. Of the

other six persons in this "star" group, only one was not a member of the administration at this time period. This faculty member was an important member of the faculty senate at this time, and became its president in the following year. He later became the first Dean of Common Learning.

Contacts with Top Administration, Before 1966:

Neither the President of Northern during the period before 1966 nor the Academic Vice President during this period responded to the questionnaire, though both were sent personal follow-up requests. The President replied that he "did not feel that he should comment"; no reply of any sort was received from the Academic Vice President. Neither of these top administrators was at Northern at the time the survey was taken; the Academic Vice President had left for the presidency of another University in the summer of 1966, while the President had resigned in the spring of 1967 to return to industry.

Even though no reciprocal communication contacts can be established in the case of these two top individuals, it is of interest to record the number of persons who said they communicated with these officials. Sixteen persons reported communicating with the President during this time period, but 44 persons reported communication contacts with the Academic Vice President. Of these

44 persons, 19 were members of the administration, while 25 were faculty members. This amounted to 66% of the administrative group at that time, and 40% of the faculty present at that time.

Results at T_2, Post-1966

As noted above, the results of the questionnaire for the second time period of the study, post-1966, showed 112 respondents, or 59% of those receiving questionnaires. Obviously, a larger number of persons was available to answer this portion of the questionnaire, since the faculty increased by 67 between 1965 and 1966, partly due to increased enrollments and partly to deal with the new Common Learning program. Figure 6 shows the increase in faculty members during the years from 1964 through 1969. (Also, see Table 1.)

The average number of respondents reported by each person who returned a questionnaire concerning the post-1966 period was considerably greater than pre-1966 -- 26.48 per subject as compared with 14. Finally, the number of subjects who had reciprocal communicants at this time period was also higher than in the pre-1966 period. One hundred and eleven respondents had reciprocal contacts. This amounted to 99% of those who returned questionnaires, compared with 83% reporting reciprocal contacts in the pre-1966 period. The average number of reciprocated contacts per respondent post-1966 was 11.8, while pre-1966 it was 6.71.

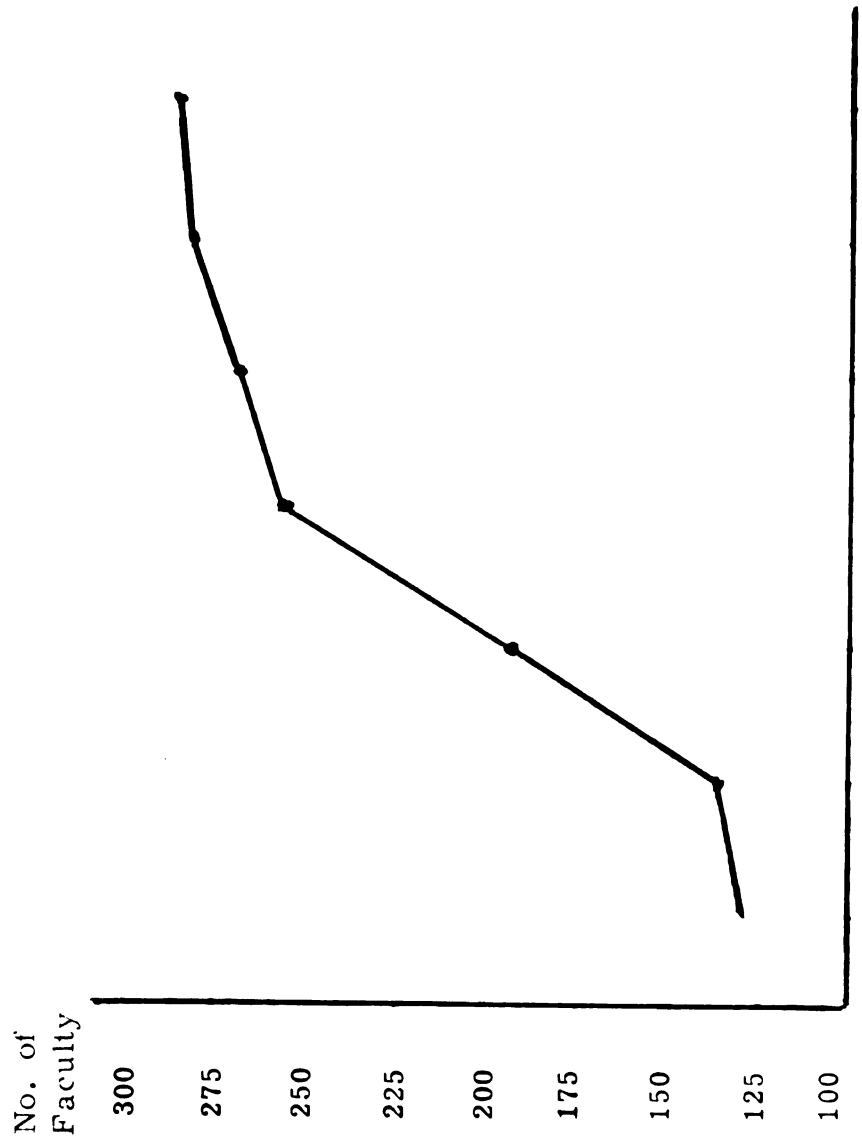

Figure 6 -- GROWTH IN FACULTY, 1963-1969

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The number of "totally communicant groups" at the T_2 period was 146. As noted above, this figure was inflated by an artifact of the computer manipulation. After being collapsed by inspection the number was reduced to 102 groups. This means that 26 of the 146 groups included the same persons as other groups, printed two or more times by the program, each time with the addition of at least one liaison person or satellite. (See Figure 5, above.) The 26 groups identified by inspection had an average number of 2.8 persons per group. Thirty different liaison persons and satellites were connected with these 26 groups.

Categorizing Groups:

The groups forming the totally communicant group complex were categorized by analyzing the institutional roles of those making up these groups, as noted in the results at T_1. Table 16 gives the results of this categorization.

Tables 12 and 13 show that a sharp increase occurred between T_1 and T_2 in numbers of "totally communicant groups" in Humanities, Natural Science, and Social Science -- the three subject areas of the Common Learning. This probably was the result of a major increase in personnel and in work groups. Before 1966, only a few committees were working on the program, while, after 1966, 112 persons were teaching in the program. (See Table 3.) There

TABLE 12

Categorization of Groups, Post-1966

Category of Group	No. of Groups	No. of Persons	Avg. No.
Administration	11	41	3.7
Faculty-Administration (joint)	17	57	3.4
Departmental	11	35	3.2
Humanities	17	69	4
Natural Science	23	82	3.7
Natural Science (television)	4	15	3.7
Social Science	9	36	4
Faculty (general)	6	18	3
Common Learning (technical TV)	1	4	4
Coordinators of Common Learning	1	3	3
Senate	1	3	3
Production Television	1	4	4
Totals:	102	367	3.5

TABLE 13

Comparison of "Totally Communicant Groups," T_1 and T_2

Group Category	No. Pre-1966	No. Post-1966	Increase
Administration	4	11	7
Administration-Faculty (joint)	10	17	7
Departmental	6	11	5
Humanities		17	17
Natural Science	2	23	21
Natural Science (television)	3	4	1
Social Science	1	9	8
Social Science (television)	2	-	- 2
Senate	2	1	- 1
Faculty (general)		6	6
Common Learning - Technical TV		1	1
Production - Television		1	1
Coordinator of Common Learning		1	1
Totals:	30	102	72

was also a large increase in administration-faculty groups, though not as large as in the subject areas. This indicates increased work within the program as well.

An interesting aspect of the results is that at T_2 a general faculty category appears. Evidently there was cross-fertilization and communication across areas as well as within areas. There was also an increase of sizable proportions in the departmental groups.

Natural Science television remained almost constant, indicating little increase in activity and communication. Social Science television disappeared, as a distinct group, although the producer-director for social science appeared in several of the general faculty groups. Less activity in the senate category also was evident.

Three new groups appeared -- two in the television area, and one group of Common Learning Coordinators.

Liaison Role Persons: As in the number of groups, a considerably larger number of persons with liaison roles was identified during the post-1966 period than the pre-1966 one. A total of 46 persons showed three contacts or more, while the top person showed a total of 26 contacts with various groups. There were a total of 306 links for the 46 persons identified, or an average of 6.6 links per liaison person. Table 14 gives the results of this liaison person determination.

From Tables 14 and 15, it appears that the top persons as far as communication contacts were concerned during the post-1966 period was the administrators and Common Learning coordinators. While more faculty members were liaison persons, a much larger percent of administrators and coordinators (48% and 50%, as compared to 17% of the faculty) were in this group. Also, the average number of groups linked was higher for administration and for coordinators (8.6 and 13, respectively) than for faculty (4.9 links per individual). The coordinators were operational leaders, who probably made their large number of contacts within the framework of day-to-day activities of the program, and so would have been expected to rate high on this measure. Probably the same could be said of administrators.

Among the group of persons having 8 or more contacts, several persons stand out. The first three persons on the list each served as administrative head of the Common Learning program. The first person was the first head of the program, the Dean of Common Learning. His 26 communication links were by far larger than any other. He also linked a wider variety of groups than any other person. The second listed person was the second head, who took over when the Dean left. He, too, had a large number of contacts and a wide variety. The third person is the present Assistant Dean of Common Learning. While his number of contacts

L

Numerical Designations
7
23
64
40
9
139
22
6
98
24
154
13
15
76
183
114
94
8

mbers i

TABLE 14

Liaison Individuals, Post-1966, by Role and Links

Numerical Designations	Role Description	Total No. of Links	Groups Linked
7	Dean of Common Learning	26	Nat. Sci. (7)*, Admin. (6), Ad.-Faculty (4), Soc.Sci. (3), Dept. (3), Hum. (2), Tech. TV.
23	Associate Dean of Common Learning	19	Admin.(5), Ad-Faculty (4), Nat. Sci.(4), Hum. (3), Soc. Sci. (2), Dep't.
64	Assistant Dean of Common Learning, Coordinator	14	Nat. Sci.(6), Hum (2), Dept (2), C. L. Coord., Ad-Faculty, Nat.Sci. (TV), Senate
40	Coordinator - Humanities	14	Hum. (8), Dept (3), Admin. (2), Ad.-Faculty
9	Department Head (English)	11	Admin. (5), Dept. (4), Ad-Faculty, Hum.
139	Faculty Member (Bio.)	11	Nat.Sci. (8), Nat.Sci.(TV), Fac.
22	Dean, later Academic V. P.	10	Admin.(7), Ad-Faculty, Nat. Sci., Hum.
6	Dept. Head (Chem.) later Dean	10	Admin.(4), Nat.Sci.(4), Ad.-Faculty, Hum.
98	Faculty Member (Bio)	10	Nat.Sci. (8), Ad-Faculty, Faculty
24	Coord. C. L., Dept. Head (Econ. & Soc.)	9	Soc.Sci. (8), Admin., Coord., Dept. Nat.Sci., TV Prod.
154	Faculty Member (Visual Arts)	9	Hum. (6), Ad-Faculty (2), Dept.
13	Coord., Faculty Member (Physics)	8	Nat.Sci. (3), Admin., Ad-Faculty Nat. Sci. (TV), Tech. TV.
15	Dept. Head (Speech)	8	Ad.-Faculty (3), Admin (2), Dept. (2), Hum.
76	Faculty Member (Chem.)	7	Nat. Sci. (4), Ad-Faculty (2), Faculty
183	TV Producer-director (Nat. Sci.)	7	Nat. Sci. (TV), Nat.Sci., Faculty, Tech. TV, Prod. TV.
114	Faculty Member (Bio.)	7	Nat. Sci. (5), Ad-Fac, Nat.Sci.(TV)
94	Faculty Member (Speech)	7	Hum (5), Dept., Ad-Faculty
8	Director of Summer School (History)	6	Admin. (4), Nat. Sci., Dept.

*Numbers in parentheses indicate number of groups of the type linked.

TABLE 14

Numerical Designations	
42	
30	
91	
184	
21	
10	
72	
128	
121	
25	
60	
104	
35	
37	
73	
45	
159	
82	
11	
150	
18	
19	
67	
5	
16	
39	
44	
78	
124	
47	Tot

TABLE 14 - Continued

Numerical Designations	Role Description	Total No. of Links	Groups Linked
42	Faculty member (Geo.)	6	Admin.-Faculty (4), Soc. Sci., Nat. Sci.
30	Faculty member (Eng.)	5	Hum. (2), Dept., Ad-Fac., Senate
91	Faculty member (Hist.)	5	Faculty (3), Ad-Fac., Dept.
184	Director of Learning Resources	5	Admin., Ad-Faculty, Nat. Sci. (TV), Tech. TV, Prod. TV.
21	Graduate Dean, Acad. VP	5	Admin. (4), Ad-Faculty
10	Dept Head (Physics)	5	Nat. Sci. (2), Ad-Fac. (2), Admin.
72	Faculty member (Math), TV Teacher	5	Nat. Sci. (3), Nat. Sci. (TV) (2)
128	Faculty member (Geo)	5	Nat. Sci. (4), Dept.
121	Faculty member (Hist.)	5	Ad-Faculty (2), Nat. Sci., Hum., Faculty
25	Dep't Head (Bio.)	4	Nat. Sci. (2), Adm., Nat. Sci. (TV)
60	Faculty member (Geo.) TV Teacher	4	Soc. Sci. (4), Ad-Faculty, Dept., Prod. TV.
104	Faculty member (Physics) TV Teacher	4	Nat. Sci. (2), Nat. Sci. (TV) (2)
35	Faculty member (Soc.)	4	Soc. Sci. (3), Faculty
37	Faculty member (Physics)	4	Nat. Sci. (2), Nat. Sci. (TV) (2)
73	Faculty member (Soc.)	4	Soc. Sci. (3), Ad-Faculty
45	Faculty member (Bio.)	4	Nat. Sci. (3), Senate
159	Faculty member (Bio.)	3	Ad.-Faculty, Nat. Sci., Nat. Sci. (TV)
82	Faculty member (Eng.)	3	Dept. (2), Hum.
11	Dept. Head (Chem.)	3	Admin., Dept., Nat. Sci.
150	Faculty member (Speech)	3	Faculty (2), Ad-Faculty
18	Dept. Head (Geo.)	3	Admin., Ad-Faculty, Dept.
19	Dept. Head (Visual Arts)	3	Admin. (2), Hum.
67	Faculty member (Pol. Sci.)	3	Ad-Faculty (2), Soc. Sci.
5	Vice President (Admin.)	3	Admin. (3)
16	Dept. Head (Pol. Sci.)	3	Admin. (3)
39	Faculty member (Speech)	3	Hum. (2), Faculty
44	Faculty member (Chem.)	3	Dept., Faculty, Nat. Sci.
78	Faculty member (Eng.)	3	Hum. (2), Ad-Faculty
124	Faculty member (Eng.)	3	Hum. (2), Dept.
47 Total		308 Total	

TABLE 15

Summary of Liaison Individuals, Post-1966

Total No.	%	Role Designations	Total No. of Links	Avg. per Individual
25	17	Faculty Members	127	4.9
15	48	Administrators (V.P.'s, Deans, Department Heads	130	8.6
3	50	Coordinators, Common Learning	36	13
3	33	TV Teachers	13	4.3
2	66	TV (Producer-Directors, Producer)	12	6

is impressive, they do not exceed Number 40, who is fourth on the list. All of the top three persons might have been expected to show large numbers of communication links by virtue of their roles in the structure of the organization. Their links follow the organizational chart structure, both in upward and downward flow, as well as showing considerable cross-flow of communication.

In many ways, however, another group of liaison individuals is more interesting than the top three. These are Numbers 40, 139, 98, and 13, who had 14, 11, 10, and 8 contacts, respectively. One of these, No. 98, never filled any other role than that of a faculty member, though he did take part in a few TV lessons. Yet his contacts were numerous, and covered a wide range of persons in the program and outside it. Thus it appears that his was a true opinion leadership role. Much the same can be said of No. 139, though he did not link any administrative groups. An analysis of No. 40's contacts indicates that, though he was a coordinator, he had a very wide range of contacts, extending to groups other than those in his department and in his discipline of Common Learning. Thus it appears that he, too, probably played an opinion leadership role.

The role played by many people changed during the life cycle of this program. This happened with eight of the top ten persons

in the list of liaison individuals. A particular example is No. 13. He was a department head and a coordinator before 1966, but had resigned these roles by the start of the Common Learning lessons in the fall of 1966. He was, however, president of the Senate during several of the years which followed. His variety of contacts was among the widest discovered. He appears to have been a true opinion leader.

Table 16 presents a comparison of the roles played in the communication structure of the Common Learning program at T_1 and T_2. The top eight individuals at T_1 were chosen for comparison, since each of these persons had five or more contacts at that time.

TABLE 16

Comparison of Liaison Individuals*, Pre-1966 and Post-1966

Numerical Designation	Role Description	No. of Pre-1966 Contacts	No. of Post-1966 Contacts
8	Dep't Head (Hist.), Com. "A" (later Dir. of Summer School)	8	66
22	Dep't Head (Eng.), Acad. Dean	6	10
7	Faculty, Acad. Senate, 1st Dean of Com. Learning	6	26
13	Dep't Head (Physics), Coord. of Nat. Sci., (later) Faculty Senate	6	8
24	Dept Head (Econ.-Soc.), C. L. Coordinator	6	9
21	Grad. Dean, Acad. V. P.	5	5
9	Dept. Head (Eng.), Senate	5	11
114	Faculty (Bio.), Com. "A"	5	7

*Having 5 or more contacts Pre-1966

Only one of these persons had fewer contacts at T_2 than at T_1. This person moved to a position in very little contact with the program. He also resigned his post as Chairman of Committee "A" about the beginning of 1966. These facts would seem to account for his drop in contacts.

The most dramatic increase in communication contacts during this period was made by the person who became the first Dean of the Common Learning program. His role and wide variety of contacts has been discussed earlier.

One thing that Table 16 does not clarify is the status of Numbers 40 and 98 during the Pre-1966 period. Interestingly enough, both of these faculty members were among the first group of faculty hired to teach in the Common Learning Program during the summer of 1966. They did not arrive on campus until the fall of 1966. They thus attained their opinion leadership status in a very short time, and apparently through exceptional ability or persuasiveness.

Summary of Results of Part 1 of the Questionnaire:

One is tempted in giving results of such a study to present them in more detail than the scale of the measuring instrument would allow. In reviewing the results presented here, it should be kept in mind that much of the information presented was recalled

by the respondents from several years in the past. This was especially true of that information concerning the Pre-1966 period. Some clarity was no doubt lost in this way. Also, far from 100% returns were received. Since the bulk of the data presented represented reciprocated contacts, it is quite possible that more "totally communicant groups" or cliques would have emerged if all those involved with the innovation had replied. Finally, the numbers of persons involved in this study over-burdened the computer program in use at Michigan State University for the reduction of matrices by multiplication; for this reason, a different approach had to be taken by the programmer. This approach needs more testing before it can be totally relied upon.

In spite of the caveats noted above, the data produced by the first part of the mailed questionnaire presented a picture of organizational communication which meshes in large degree with the facts revealed by the Historical study and by the recollections and opinions obtained in the focused interviews. This is a picture as follows: At first, a relatively small number of persons was engaged in intense communication and planning, with little communication with the large bulk of the persons in the University. Most of these persons were in the administration, led by the academic vice president; but a few (rising) faculty members were also

engaged in the communication structure at this time. Later, the flow of communication enlarged to include the institution as a whole, as the planning group turned to the academic community for legitimization of their brainchild. This actual legitimization occurred with the second faculty vote, in late May, 1965. During the whole Pre-1966 period, however, the communication structure was relatively simple.

Both complexity and considerable growth may be seen to have taken place in the Post-1966 period. A much enlarged teaching force, engaged in the actual day-by-day teaching of the Common Learning, broke into many more cliques. The number of liaison persons increased dramatically, as did their number of contacts. Lines of communication may be seen both to have followed organizational lines upward and downward in the organization, and to have crossed organizational lines. (This was suggested in Figure 3, Historical Perspectives.) In addition, considerable horizontal communication took place during this period, both within departments and within the faculty and administration as a whole.

The most important liaison roles were played by persons holding positions in the structure of the program which invited volumes of communication. However, several faculty members appeared to hold significant opinion leadership roles in terms of the numbers and variety of their contacts. Their influence seemed quite widespread, as judged by the results obtained here.

CHAPTER VI

RESULTS: PART II OF QUESTIONNAIRE

Perceptions of Instructional Communications Activities

Introduction:

The second part of the mailed questionnaire had to do with the perceptions persons in the Common Learning program had of the activities of the Instructional Communications department at Northern in regard to the program. This department was charged with providing the audiovisual services, and with television production and distribution for the courses which utilized television as a teaching method. It also was charged with an overall responsibility -- that of acquainting the faculty with newer educational media, and with attempting to bring about the adoption, in a suitable manner, of such innovations.

Operationally, the Coordinator of Instructional Communications was the individual who chiefly functioned in the above role during the period when the Common Learning was in preparation. His efforts culminated, as noted above, with the development of a

paper -- jointly authored with two of the coordinators for the Common Learning program -- designed to present a rationale for the use of television in teaching high enrollment courses, especially in the Common Learning. This, in turn, laid the foundation for the adoption of television as a part of the overall teaching system used in two of the Common Learning sequences. (The development of this paper was discussed above, in the History chapter. A copy of the paper itself is included in Appendix D.) Thus, the Instructional Communications Department, especially through the efforts of its coordinator, functioned as a "change agent group," as defined by Rogers (1968), Bennis (1966), Carlson (1968), Chin (1967), and others, in bringing about the use of TV as a teaching medium.

The question explored in this portion of the study, however, is whether the Instructional Communications group was <u>perceived</u> as having a legitimate change-agent function, what this function was perceived to include, and whether the majority of the Common Learning faculty perceived the group as having carried out this function of change agentry. The perception of the faculty in this case was at least as important as the actual events -- perhaps even more important.

<u>Results of the Study:</u>

To attempt to discover the answers to the above questions, a sub-section of the general questionnaire was prepared which

asked two sets of questions, differentiated on the basis of time. (See the Methods chapter.) Each group of questions asked whether a set of four related activities, each slightly more inclusive and at a higher level than the preceding one, were proper activities for this group to be engaged in at two different time periods -- pre-adoption of Common Learning (1966), and post-adoption (after 1966). The second question in each group then asked which of the above listed activities was the most important one the group could have undertaken. The third question in each group asked if Instructional Communications actually did carry out the activity chosen during each of the time periods. Finally, an open-ended question asked what other activities, besides those listed, should the group have undertaken at each of the time periods.

Considerably fewer respondents replied to this portion of the questionnaire than to the first part (the question of who talked with whom). While 59% of the persons to whom questionnaires were sent answered the first part of the questionnaire, only 53% replied to the second half of the questionnaire. This was probably due to the fact that the television teaching method was not used in the Humanities portion of Common Learning (at least, this was true at first -- during 1967 and later, some television supplements [produced elsewhere] were used, as were numerous films. Also, "mirror TV" was used in parts of the Humanities I course.) A

number of respondents claimed that they could not answer this section, since TV was not used in their courses. Many others in the Humanities did, however, answer the question. Of course, many persons who were not present before 1966 did not answer this part of the questionnaire.

Replies to "Before" Questions:

As noted above, the first question concerned appropriate activities of Instructional Communications before the decision to adopt Common Learning was made. Of the 102 people who replied, 72, or 71%, thought that providing technical information was appropriate; 57, or 56%, said that providing information on the probable cost of TV was appropriate; 69, or 68%, thought providing information concerning production techniques was useful; while 78, or 76%, felt that it was appropriate for the Instructional Communications group to help develop a learning system. (See Table 17.) It is clear from the above listing of frequencies that many people thought that most of these activities were appropriate at this time period.

The second question, "Which of the above activities do you consider the most important which Instructional Communications could have engaged in?" was actually the key to the perceptions of the major role of this change agent group. The writer had felt that most respondents would choose one of the lessor level activities.

However, this was not the case. Sixty-eight persons, or 67% of the respondents, stated that the most important activity for this agency of the University would have been the development of a system of learning for the Common Learning program, alternative "D". Of the other answers, 19 respondents, or 19%, chose alternative "C" (production information); 7 persons, or 7%, chose alternative "A" (technical information); while 4 people, or 4% of those answering, chose probable cost, alternative "B". (See Table 18.) Thus, it was clear that by far the majority of the respondents perceived the Instructional Communications as having an important change-agent role in helping bring about the adoption of improved teaching methods.

Question 3 asked the respondents whether they felt that the Instructional Communications group actually engaged in the activity each chose as the most important one. While a fair percentage of those responding (31% or 32 persons) felt that it did so, a considerably larger portion (43%, or 44 persons) said that it did not carry out the most important activity chosen in question 2. (See Table 19.) Quite a number of those who responded tried to soften this answer by saying such things as, "Through no fault of their own," or "Even though they tried." But it was clear that most people did not perceive that the Instructional Communications group carried out their proper change agent role at this time period.

TABLE 17

Q. 1: Proper Activities of Instructional Communications Before 1966

	No. of Replies	% of Replies	% of Total Pop.
a. Providing Technical Information	72	71	37.8
b. Information on Probable Cost	57	56	30
c. Information on Production Techniques	69	68	36
d. Develop a Learning System	78	76	41

TABLE 18

Q. 2: Most Important Activities for Instructional Communications Before 1966

	No. of Replies	% of Replies	% of Total Pop.
a. Providing Technical Information	7	7	3.7
b. Information on Probable Cost	4	4	2.6
c. Information on Production Techniques	19	19	10
d. Develop a Learning System	68	67	36

TABLE 19

Q. 3: Performance of Most Important Activity by Instructional Communications

	No. of Replies	% of Replies	% of Total Pop.
Did Perform	32	31	16
Did Not Perform	44	43	23

The open-end question concerning other activities during this time period showed little clustering of opinion, but a wide range of ideas. Forty-three persons, 42% of those responding, and 23% of the total population, answered this question. The most often mentioned activity for Instructional Communications was that of pre-service and in-service training for those who produced the television lessons for Common Learning. Seven persons mentioned this. Six persons also said that Instructional Communications should have produced demonstration projects, pilot films or tapes, or examples of good teaching by television for training both those who produced the tapes, and those who were to receive them in the classroom. Two people said training in all visual aids to education should have been carried out. Three people mentioned that the group should have studied what other institutions were doing with television teaching. (Actually, this was done.) Two people also stated that the group should have screened faculty members who were scheduled to teach on TV as to their ability (however, Instructional Communications was not given this option by the administration); and two respondents said it should have kept the faculty better informed on all new teaching methods.

Other statements in answer to this question were: "Evaluate lessons from both technical and content standpoints," "Instructional

Communications was not allowed to participate 'in depth' in Common Learning planning," "Resources of the Instructional Communications were most adequately provided to our department," "Instructional Communications needed better equipment and better trained personnel," "Instructional Communications should demand better equipment," "Report on probable virtues and disadvantages of television instruction (actually, a paper on this subject was sent to all faculty in the spring of 1966)," "Build materials library," "Develop new instructional methods," "Use commercially produced programs," "Assist and advise faculty on multimedia approach to education," and "Instructional Communications should have been involved in the scheduling of the Common Learning programs."

One point seems clear from the above -- most of the respondents who answered this question seemed to feel that the Instructional Communication department did have a legitimate role to play in helping to develop and improve instruction at Northern. Of course, it is not clear what the opinion of the rest of those involved in Common Learning was, or what most thought, since question 4 was answered by only 43 people, or 42% of those replying to this part of the questionnaire. It must be remembered, too, that the questionnaire was sent to 190 persons in total.

Replies to "After" Questions:

Questions 5, 6, 7, and 8 concerned the perception of the respondents as to the proper activities of Instructional Communications after the adoption of the Common Learning program in 1966. Eighty-two people, or 80% of those who replied, thought that handling the technical aspects of recording and playback was appropriate; 72 persons, or 71% thought helping TV teachers with production techniques was suitable; 57 people, or 56% found keeping costs down appropriate; while 86 people, or 84%, thought that it was appropriate for the Instructional Communications group to help implement the instructional system planned before the adoption of the Common Learning. (See Table 20.) Again, it was unexpected that this high percentage should have chosen alternative "D", the learning system implementation. The writer had hypothesized that more people would see a lessor role for this group.

Of the four alternatives suggested as possible activities in Question 6, 58 persons, or 56% of those replying, said they felt helping implement the learning system was the most important activity Instructional Communications could have engaged in after the adoption of the Common Learning program. Again, this was unexpected, since the writer had thought more respondents would chose the A, B, or C alternatives. Instead, only 3 people, or 3%, chose alternative "C", helping keep costs down, while 19 persons,

or 19% of the respondents, chose alternative "A", and 19% alternative "B". (See Table 21.) (The fact that percentages do not equal 100 is due to the fact not all respondents answered this question.)

Opinion was almost equally divided as to whether or not the Instructional Communication Department actually carried out the most important activity. (See Table 22.) In fact, 38 respondents, or 37%, answered they did not. It should be noted that in both Question 3 and Question 7 the type of activity carried out is not indicated here -- simply that the most important activity chosen by the respondent was or was not carried out.

As in Question 4, 43 people, or 42% of those who replied, answered the final, open-ended question, "What other activities should Instructional Communications have engaged in <u>after</u> the decision was made to use TV?" This was 23% of the total population of the study. Again, few of the expressed ideas clustered. In fact, the spread was even wider here than in Question 4. Two people stated that the Instructional Communications group should have determined the relative cost of television, as well as its relative effectiveness. Similar answers were, "Conduct experimental evaluation of the teaching method," "Evaluate television teaching tapes from both the technical and content aspects," "Continue to study how to improve teaching by TV." Two people

TABLE 20

Q. 5: Proper Activities of Instructional Communications After 1966

	No. of Replies	% of Replies	% of Total Pop.
a. Technical Aspects	82	80	43
b. Keeping costs low	57	56	29
c. Production techniques	72	71	38
d. Implement a Learning System	86	84	45

TABLE 21

Q. 6: Most Important Activities for Instructional Communications after 1966

	No. of Replies	% of Replies	% of Total Pop.
a. Technical Aspects	19	19	10
b. Production techniques	19	19	10
c. Keeping costs low	3	3	2
d. Implement Learning System	58	56	31

TABLE 22

Q. 7: Performance of Most Important Activity by Instructional Communications

	No. of Replies	% of Replies	% of Total Pop.
Did Perform	38	37	20
Did Not Perform	39	38	21

also mentioned that Instructional Communications should have chosen people with ability to teach on television. (As noted above, Instructional Communications had no control over who was chosen to teach.) A similar answer was "Devise criteria for the selection of television teachers." Criteria were available, but were not requested by the Common Learning administration.

Other answers given to this question were: "Organize learning system teams with adequate equipment," "Inform faculty about instructional aids," "Give leadership roles in the program to qualified persons in Instructional Communications," "Take more initiative in giving information to faculty on availability of software," "Provide more inservice training," "Instructional Communications has done its part to be of service," "More direct liaison with the Common Learning program is needed," "Give more aid in production," "Assure more reliable TV signals on campus," "Provide better signal quality," "Start tapes on time," "Give more direct technical aid to instructors in AV," "Do more follow-up evaluation," "Evolve new instructional modes," "Demand better equipment and more production funds," "Provide information on the unique properties of the medium," and "Prepare demonstration taped lessons."

Thus, it is clear that many people felt that the Instructional Communication Department had a follow-up role to play in continuing

the sub-innovation (television in instruction), as well as a change-agent role in getting it adopted in the first place. Perhaps it also shares in the responsibility for its discontinuance. A discussion of the situational variables which affected the ability of this group to operate in this manner will be found in the Discussion chapter.

TABLE 23

Summary of Activities Favored, by Rank Order

Before 1966	%'s	After 1966	%'s
d. Develop Learning System	76	d. Implement System	84
a. Provide technical Information	71	a. Technical Aspects	80
c. Production Techniques	68	c. Production Techniques	71
b. Probable Cost	56	b. Keeping costs low	56

CHAPTER VII

RESULTS OF FOCUSED INTERVIEWS

Introduction:

One of the methods of studying the "life cycle" of the innovation of the Common Learning at Northern Michigan University was that of focused interviews to find out what some key people who participated in the program thought concerning it at various time periods. These people were chosen because they were at the University during the whole process of innovation and because they played a wide variety of roles in relation to the innovation. In addition all were determined to have been liaison-role persons.

As stated in the Methods section, the purpose of the interviews was to determine the attitudes of these knowledgeable people; their concept of institutional readiness to accept change; their concept of the leadership of the institution; their perception of communication adequacy during the introduction and use of the innovation; and what they considered the reasons for the adoption and later modification of the innovation.

Of the six who were interviewed, two were "ordinary" faculty members; one was a member of Committee A who later became an

associate dean and part-time head of the Common Learning program; one was a department head and a coordinator of one area of Common Learning, but resigned both positions and returned to teaching and also to acting as chairman of the Senate; another was an area coordinator of Common Learning; while the final one of the six was a teaching faculty member who was later named department head. One of the two "regular" faculty members was a member of Committee A. Thus two of those interviewed were members of Committee A; one was a member of the Common Learning Subcommittee of Committee A, but never a member of the Committee itself. All of the six were at Northern before the Common Learning was begun, and were still present at the time of the study. All had at least some connection with the program.

All of those interviewed acted in some degree as liaison persons. This is shown in Table 24.

TABLE 24

Liaison Links of Interviewees

	Number of Links	
	Before 1966	After 1966
No. 11	2	3
No. 13	6	8
No. 23	3	19
No. 24	6	6
No. 114	4	7
No. 139	3	6
Total	24	49
Avg. No. Links	4	8.1

Those interviewed belonged to a wide variety of "Total Communicant Group" types, including administrative, departmental, Natural Science, Social Science, and TV work groups. These wide contacts made it possible for these people to express valid opinions on the Common Learning Program.

The technique used in these interviews was as follows: a set of standard questions was developed, following the model of Merton, Fiske, and Kendall (1956). (See Methods chapter.) These questions all had back-up questions for clarification, which were asked as needed. All were read verbatim in each interview to reduce interviewer bias. They were asked verbally of each respondent. An audio tape recorder was used to record the replies, which were then transcribed to paper. Results were then tabulated, with variations noted where suggestive or otherwise pertinent.

Results of The Interviews:

Answers to some of the questions were quite varied; while answers to others showed remarkable agreement among all six of those questioned. The following are the results of this portion of the study. The questions are paraphrased. For exact wording, see the actual questions, included in Appendix B.

Question 1: How did the idea originate at Northern? All interviewees were unanimous in stating that the idea of the Common

Learning originated with academic vice president of the University. It was he who first presented the idea, as they remembered it. One person remembered that the AVP had heard of similar ideas in use elsewhere. The others did not know where he got the idea.

Typical replies to this question were: "The chief motivating force here was the academic vice president." "The idea originated primarily with Dr. _____, the academic vice president." "I think the academic vice president had a great deal to do with this." "Certainly (the academic vice president) was the sparkplug and focused what he no doubt sensed among the faculty, as well as, I dare say, something he wanted to do himself."

Question 2: Where did you first learn of the idea? Three interviewees thought that they first heard of the idea from the academic vice president. Two first heard of it from Committee A, while one was told about it by his department chairman. Thus awareness of the idea was gained in various ways.

Question 3: Were the right people informed about the program, and were they well enough informed? A majority of those questioned -- four -- felt that people were (or should have been) well enough informed. One was emphatic that they were well informed. The majority mentioned that all Committee A minutes were circulated to all faculty, and that the idea was discussed in faculty meetings of the whole faculty organization, and in departmental meetings. They

were less sure that people actually understood what was going on, though sufficient opportunity existed. Two interviewees said that people were not well enough informed, especially the general faculty.

Some answers were, "I think the whole faculty was pretty well aware of what was being discussed. But there were a lot of misinterpretations." "I think the right people were well informed, that is, the people who were asked to make the decision as to whether or not we should have the Common Learning program. I have a feeling though, that when it was time to break it down to the general faculty, there was a breakdown in communication." "I would say that never in my experience has an entire faculty been so thoroughly immersed in the discussions of curriculum."

Question 4: What was your original reaction to Common Learning? Here opinion was quite evenly divided. Three were against the idea; two were for it. One person felt that the idea was quite good and commendable in theory, but unworkable in practice.

"I thought it was not the (right) idea at all," one interviewee reported. Other answers were, "My first reaction was negative . . . (but) my vote against the program was not a strong negative." "I was and still am in favor of my concept of Common Learning." "My own original reaction was highly favorable."

Question 5: What was the part played by faculty, administration, and students in the development and adoption of Common Learning? Here, it was clear that this representative group saw the administration (primarily the academic vice president) as the main force in the development and adoption of the innovation. Five of the six so perceived it. Four thought that the faculty had a small part to play; one thought the faculty played a median role, while one person felt the faculty played a large part and the administration a small one. No one saw students as playing more than a very small role, if any at all. Clearly, they saw the program as an administration one.

Answers typical of the whole were, "The faculty as a whole probably played a limited role, except in answering yes or no questions." "I'm afraid I feel that the total faculty did not have much of a role to play in the original planning. I feel the administration played the biggest part. (The program) more or less originated at that level." "There is no secret that the academic vice president was pushing this through very hard, although he professed not to be. . . . If this suggestion had come from the faculty, and if (the academic vice president) had not been there, I think it would have gone slower and much more peacefully." The one maverick in the group answered, "I think the faculty had a tremendous role,

given to it from the start by (the academic vice president). Given the encouragement and the push, there was a tremendous (faculty) involvement . . ."

Question 6: Was the decision process used a good one? Answers tended to be rather equivocal on this. It seemed the interviewees did not really know. One said yes, one no. The other four said fairly good. One said the process used seemed to him to be the only one to use.

As noted, answers varied, as follows: "I think it was a realistic way to do it. I'm not sure it was the best way." "Everyone who had an opinion to express had a chance to express it and I don't know how the process could have been improved as far as argument, discussion and voting in it. There were some faculty members who felt they were at a shotgun wedding, though, I suspect." "I think, in outline, this is the logical way. . . . In detail, there might have been things done differently. I have a feeling that maybe if we had moved a little less abruptly . . . we might have had a better condition." "It was good in the sense that there was heavy faculty involvement and administrative encouragement."

Question 7: What was the main reason why Common Learning was adopted? Here, a wide range of answers was received: There was a need for a better type of education; a need to educate in the broad sense; dissatisfaction with things as they were, or people

were in a mood for change; it was an administrative decision for the academic vice president's reasons; and that, in its modified form, it seemed much like the old group distribution requirements. Some rationalization took place; the real reasons for the change seem unclear. They may never have been known.

Some of the statements made were: "It was probably the idea of some administrator, or group of administrators, who thought it would be a good thing." "I think that at many schools there is a feeling that we must educate people in a broad sense. I think that was the main reason as far as I'm concerned." "I think people were dissatisfied with the operation of the mainly freshman level courses that were introductory to certain areas." "I think we were in a mood for change. We were in a period of (institutional) change . . . People were hoping they could contribute to these changes in a way that the institution would be improved."

Question 8: How receptive to change was Northern? Again, the answers showed a split of opinion and perception. Three felt it was quite receptive to change at that time, while two persons felt that it was traditional in nature. Some replied that actually there were two camps -- a number of older Ph.D.'s who resisted change, and a much larger number of young master's degree holders who were seeking change, almost for its own sake. This

latter group was courted and led by the academic vice president, who wished to encourage change to help make his own reputation. Thus, the ultimate condition was a readiness for change in the majority of those on campus.

Answers contained the following statements: "One very large group was interested in change . . . Another group was quite satisfied with things as they had been done in the past. I think this group was in the minority." "I think it was traditional. I think it was very unreceptive to change when I first came here (in 1964)."

Question 9: What was the style of leadership? In answer to this question, there was unanimous agreement; the academic leadership was pictured as strong, able, and persuasive. The president, who was also a strong leader, seems to have had relatively little to do with this academic innovation, though one person said he made the decisions. Almost everyone felt that the leadership for this change came almost exclusively from the academic vice president. In effect, they felt that the decision to adopt was an administration decision.

Some of the statements made in answer were: "I think it was fairly clear at the time the president made the decisions." "One of the driving forces . . . was the academic vice president." "Decisions were being made at levels above the departmental

level. . . . I think they were being made at the vice presidential level." "(The academic vice president) certainly pushed and promoted and used all the persuasive nature he exerted . . . I would say that one man pushed and pushed until the program was adopted."

Question 10: What was the communication style of Northern? The answers to this question are among the most interesting received. Three persons felt that the faculty as a whole was poorly informed about the innovation, while two felt they were fairly well informed. And yet, all pointed out that nothing was kept secret during the deliberations. In fact, one gets the idea that the academic leadership went out of its way to attempt to inform people, much like the old-time company president, who boasted that "his door was always open." Yet, the communication seems not to have been totally persuasive, since in its original form the innovation was voted down by the faculty.

"I think the faculty was informed after the fact. I think they were well informed, but not really consulted very much," one respondent said. Others commented, "As regards the Common Learning, I think there was enough information, as I've indicated, for a good deal of communication to occur." "I don't think they did a very good job of keeping the University informed. This is what has led to our problems." "There was considerable communication with the administration. I wouldn't want to say, however, that communication

was complete in the sense that all aspects of the University were discussed . . ."

Question 11: Did top administration listen to the rest of the University? Three people felt that it did do so, one said no, and two did not know. One person said that top administration as embodied in the academic vice president listened very well -- but in order to find out what people thought so that he could counter their arguments or nullify these arguments. The respondents seemed to feel that the administration listened, but then went its own way when there was disagreement.

Question 12: Did you think the leadership style would affect Common Learning? Here, the answers were uniformly yes. However, the perceptions as to what would be the results of that influence varied. Most seemed to feel that the program would be adversely affected.

Some of the statements made concerning this question were: "Certainly, I think the leadership, the leadership style, did affect the program, though it was not the sole force. . . . There is little doubt that (the academic vice president's) style was critical. It's almost impossible to discuss the program for 30 seconds without bringing him into it." "Now that I look back, it certainly had an effect. In fact, without that kind of administrative leadership, I'm not sure the Common Learning program would have gone through.

I think there was a lot of push going on at the top levels, and this influenced the decision a great deal."

Question 13: Did the quality of leadership that developed after the program was adopted affect the program itself?" Four of those interviewed did feel it had an effect, one did not comment directly, one said that while it had an effect, it was a negative one.

Statements made in answer to this question included these: "I think that without the leadership that certainly was here, the program would have been on shaky ground. . . . Unfortunately, (the Dean of Common Learning) was trying to do two jobs." "We were handicapped because (the academic vice president) left (after the program was started). (The Dean of Common Learning) was more or less just feeling his way in this new administrative position, and not really sure of where he stood . . ." "In this case, with (the academic vice president) leaving . . . you had a vacuum in that particular area. You had most of the leadership in the hands of the new dean . . . who was dynamic in his own way, but differently dynamic in expressing his ideas." "I would say that leadership didn't exist."

Question 14: What was your opinion of the Common Learning just after its adoption in the fall of 1966? Two people thought that it was good; two thought it was poor. One said that he thought it

was a second-rate program, and one felt that the program needed change at that time.

Some of the answers which were received were: "I really thought that we were on the threshold of a very good program. I think most people were committed to the basic philosophy of common learning." "We attempted to do too much too soon and we offered a second-rate program. . . . I would say the program was a failure -- although quite remarkable when you consider what we attempted to do in a couple of months." (Note: most of the actual course development took place during the summer of 1966.) "I thought the orientation at that time was the proper orientation." "The program which developed and which finally went into being in the fall of that year was not really the program that I think I voted for."

Incidentally, most of those responding felt that the rest of the University shared their own opinions of the program at that time.

Question 15: What brought about change in the Common Learning program? Answers here were wide-spread. Some were: Lack of leadership; various perceptions of the basic philosophy of the course; reluctance of the faculty to go along, the problem of interdisciplinary teaching, the lack of a suitable trial period, faculty discussion among themselves, the need for substantive change; the fact

that different people actually operated the program than those who planned it, problems of implementation, the unhappiness of department heads with the program, and the fact that the coordinators had responsibility but no authority.

Some statements were: "I would say essentially faculty reaction, because there has not been since the inception a great deal of administrative leadership direction." "I think the main factor was that instructors were teaching subjects they did not feel they were prepared to teach nor that they were interested in teaching." "I think (the reason was) the reticence of the teachers themselves to really go along 1000 percent with everything."

Question 16: What was the dominant faculty opinion at that time? Most of the interviewees said that it varied. Some said that the faculty didn't understand the program, others that they were unconcerned with it.

Some specific answers were: (Concerning the attitude of the many new faculty members who were brought in that year) "They came here and they were told this is it, we are going to teach this. That is a bad approach . . . We were trying to do too much. We couldn't possibly do the kind of job we should, and I think that bothers most academic people." "A number of people were highly distressed to see at such an early date a departure from the

philosophy of the original Common Learning (concept)." "I think a lot of those on the outside (of the program) were a little more negative . . ."

Question 17: Did you think the program's organizational structure had any effect on its success? In this question, the answers were all emphatically yes. Perhaps the best way to illustrate this is to quote some of the answers, as follows: "Oh yes, I would say that the organizational structure contributed more problems in Common Learning than anything else." "Definitely. It was not clear to me where the authority was at all and I must say I had difficulty in getting anyone to tell me." "There was an air of disorganization about it that I was aware of." "I think the administrative structure was the downfall of the program. I can't think of any other single reason."

Question 18: Were the teaching methods used successful in terms of student learning achieved? Many indeterminate answers were given. Only one person termed them successful, three said they could have been better, while two said the methods varied in effectiveness. The interviewee's role(s) in the program and in the institution no doubt influenced these replies. Some of the actual answers were quite interesting, as shown by the following:

"I don't think . . . we had clearly laid down what we were going to accomplish. . . . Some of the methods turned out I guess

not to be as desirable to certain instructors. . . . Others liked them all. So I don't feel you can really say that the methods were really good or bad, successful or unsuccessful, you have to qualify your answers so much." "We were convinced that students learned as much by TV as they did with live lecture. . . . I think the problem was not primarily with the tapes themselves -- though as I say, they could have been improved -- I think the problem was more our fault, I guess." "We were attempting to use a new device for most of us, television, and we were thinking in terms of the old ways, of using it as a substitute for a lecture. . . . I would say the tragedy of it is that the things we learned we were never able to use simply because the program changed so drastically by the time we had the experiences that could have been helpful." "I have the feeling that there wasn't too much learning on the part of the students. Now, as to whether it was a matter of method, I'm not sure. The students probably weren't impressed because the teacher himself wasn't. . . . I believe that the audiovisual method, if properly used, is the best method."

Question 19: What is your opinion of Common Learning? In this answer, again, opinion varied widely among the six respondents. One person said it has not lived up to its potential. Another thought it is still not a good idea, while a third felt we are back where we

started -- with a thinly disguised group distribution system. Two persons said that it is a good thing -- that it is coming along; while one person said that it is much better than earlier.

Specific statements included the following: "Given the present power structure, where the power lies with the department heads, we have eliminated the inter-disciplinary courses generally. . . . I don't think we even look on it as Common Learning or general education even though we use the term general or liberal education. . . ." "I think it is a good thing. I think it's coming along. I think we need to continue it." "It's not Common Learning. It's not even close -- something entirely different, I'm afraid. The basic philosophy that we discussed and voted for has been lost. . . . I thought that (the basic philosophy) was crucial to the achievement of a real Common Learning program." "Oh, I think it's much better. I'm much happier. . . ."

Question 20: Has the quality of education at Northern changed as a result of the Common Learning program's adoption? Again, perceptions were widely varied. Three people did not take a definite position, simply saying either that it is about the same, that one can't say because we are back where we started, or that it is too early to say. Two felt that the quality of education has gone up, while one said it has decreased.

Specifically, the following statements were made: "Yes, I think the quality has changed (for the worst). . . . We have offered some pretty shabby courses, shabby in the sense that the subject matter was inappropriate or was dreadfully handled." "Overall, if you average all your plusses and minuses, I would say it is probably about the same." "I think the quality of education has gone up overall. . . . I think (Common Learning) helped. I think it can work." "It's like a comet that comes in and creates a lot of excitement but when it's gone things are about the same as they were before." "In a general way, I guess yes (it has improved) because it has stirred up some faculty members who would otherwise gone along in a routine way doing the same thing year after year."

Question 21: What has been the main consequence of the Common Learning program? Answers to this question were even more disparate than to the above. To illustrate, let us note the following: "I doubt that in the near future we'll ever attempt to bring about such massive changes on a short term basis. I think the experience is one which will live with Northern for a long time, even if the people change." "The most obvious (consequence) was we spent a hell of a lot of time worrying about it. It involves a strain on the faculty. (However), I think I am a better teacher for having wrestled with (the academic vice president) some . . ." "Chaos has been the

main consequence. Somehow we have never come out of the initial stage of disorganization that must arise when you change programs of a magnitude of this one."

Question 22: Were the consequences intended or unintended? Three persons answered intended, three unintended. These answers seemed to be based on their present perceptions of the value of the program. Those who thought consequences were intended tended to be positive toward the program; the others negative.

Some specific comments were: "I'm sure they were all unintended." "I don't believe that those who originally drew up the program would be very happy with the results." "To me, the results achieved were those that were intended." "Obviously not, they just came about." "I'm sure it was all intended. I would hope so. I'm sure the goal of everyone in Common Learning from the top right on down was to do the best possible job, to give all these people a good background. . . ."

Question 23: If you had known then what you know now, what changes would you have suggested in Common Learning? This wrap-up question was designed to smoke out any attitudes not revealed before. One of the most striking was that a trial period should have been used. Quite predictably, this question brought a barrage of different statements. These included the following:

"We should have attempted to do this first of all on an experimental basis, with a few students. We should have spent a year or two planning with television, not a month or two. . . . We should have had an administrative structure that would have given people with responsibility some authority, and I think the way to have done this would have been through a separate department of Common Learning." "We should have gone along with the gradual approach. It may have been wiser to put in a few sections and build up." "Pilot programs (should have been run) with small sections so that we could appreciate more the significance of problems we saw and discovered some we did not see. . . . I would say in retrospect that Instructional Communications should have had a bigger, more obvious role, say in the committee discussions of the Common Learning program. I don't think many people appreciated the capabilities of the Instructional Communications staff." "I believed it then and I believe it now that if they had experimented with this on a small scale, if they had put the people in there that were enthusiastic about it, they would have been more successful in getting the program going. . . . I think they forced too many faculty to teach these things." "I would have done several things: 1. pre-tested first, 2. divided the students up into their competency groups and used special teachers for each group, and 3. I would have made more of an effort to use visual aids. . . ."

It is also significant that four of the six people mentioned a better organizational structure than the one used. Evidently, many people were disturbed by the organization which was used.

Summary of Interview Results:

In summary, interviews were made with a group of persons able to represent the members of the faculty and administrators of Northern involved with the innovation. They filled a number of vital roles in the University; including department head, faculty member, coordinator, member of Committee A, member of Common Learning Sub-Committee, and associate dean. Together, they filled 24 liaison positions before 1966 and 49 after. They were parts of "totally communicant groups" representing administration, Social Science Common Learning, Natural Science Common Learning, TV work groups, and departments. In short, these persons played wide and pervasive roles throughout the life cycle of the innovation.

Having looked at the details of the focused interview portion of this study, let us try for a moment to gather the results of these interviews together into a coherent picture, as perceived by these knowledgeable faculty members and administrators. The picture is not a bright one. Opinions varied, but many were bitter concerning the Common Learning program, and indeed it does not seem that the scars of the adoption, trial and partial rejection

and discontinuance of this educational innovation will soon disappear from Northern.

First, it seems obvious that these people felt the decision to adopt the Common Learning program was an administrative one, even though the academic vice president who brought the idea to campus was willing to discuss it with the faculty and did attempt to bring them along with him. When the plan failed at the first vote, the AVP did not let it die, but instead altered it sufficiently and exerted enough pressure to gain a token acceptance. After this, during the 1965-66 academic year, he quietly moved to restore many of the controversial parts of the program, so that when it was actually first taught, it was much like the plan that was defeated by vote of the majority of the faculty.

Second, it seems clear that there was a deep division within the institution itself. It was in the process of almost explosive growth. Many older faculty (among them, most though not all of the department heads), were opposed in varying degrees to this growth and attendant change. However, a large group of new faculty members, probably the majority of them, wanted change, almost for its own sake. The academic vice president also wanted change (one interviewee said to forward his own career), and used the enthusiasm of this group of new faculty members to promote several innovations (among them a Common Learning).

In regard to the communication climate at this institution, communication did exist. But it was seen by those interviewed as chiefly downward -- letting the faculty know what was being done, but not letting them influence action. Feedback information was perceived as being used by the academic vice president like a member of a debate team would use the opponents' arguments -- as a means of learning how to defeat those arguments. After the program was voted in, the faculty members who were hired to teach in the new program received little information concerning the original plans and goals of the program. The interviewees felt they were not convinced of the value of these programs.

Those questioned thought a trial period might have been used. Although many wanted it, no trial period or course-by-course development was employed. All incoming freshmen in 1966 were required to take the courses. Yet, little development time was allowed, and little released time was given to those who had to prepare to teach it that fall. The group interviewed perceived this as a rushed manner of implementation. They thought it came from the decision of the academic vice president. Incidentally, the academic vice president left the University during the summer of 1966. The strong leadership that had existed before that time was never restored.

Most of those interviewed were agreed that the administrative structure of the program caused a number of problems. The Common Learning program was perceived as a beggar before the powerful departments, from whom it had to get its faculty and its budget in large part. The Dean of Common Learning, though responsible for the program, actually had little authority over any part of the program -- none over the faculty -- and had very little budget. He soon left, never to be replaced.

At the time of the study, three and one-half years after the first courses were taught, the perception of the interviewees was that the program was so changed as to have little resemblance to the original innovation. In fact, one respondent said that the program was no longer "a common learning" or a "general education," even though the name has been retained.

Problems not withstanding, several of those interviewed felt that the Common Learning idea was still a worthwhile one, with goals which still need to be accomplished. They also felt that the original plan for its accomplishment could have worked, if time had been allowed to develop it -- to work out the techniques, to "debug" the system, and to properly establish educational goals and objectives. This could not have taken place, however, without an organizational structure which would have allowed the program a chance to develop properly.

CHAPTER VIII

DISCUSSION

Introduction:

It is obvious that the adoption and utilization of an educational innovation such as the Common Learning at Northern Michigan University is a process -- a process involving large numbers of people, in intricate relationships to each other, over an extended period of time. If one wishes to study such a process with the aim of explaining it -- so that it may be better understood and so better predicted and perhaps controlled in the future -- he has at least two alternatives. The first is to excerpt from the multiplicity of events which make up the process, and elect to study one phase of the process in detail or one type of event whenever it occurs. The other is to elect to view the process whole, in its entirety, and to try to develop an explanatory scheme which will allow a reasonable pattern to be discerned as a result of such a wholistic view of the process.

While a detailed knowledge of organizational innovation decision making would be well worthwhile, it may be beyond our present

exploratory capacity. In fact, it may be argued (Rapoport and Hogarth, 1968) that a living, organized system is too complex for analysis in detail. For this reason, it seems better to study the process whole through the use of some unifying scheme, while concentrating on certain functions where possible. As noted in the Methods section, the unifying scheme chosen in this investigation has been a combination of the compatible ones of decision theory and cybernetics.

Alternatives and Choices:

If considered in decision theory terms, the life cycle of the Common Learning may be seen as a series of choices between possible alternatives. Each of these choices was influenced by a number of factors: by feedback from the results of the decisions which went before it -- some even before the conception of the Common Learning; by the amount and quality of the information concerning the possible alternatives available to those making the choice (and of course their interpretation of this information); and by the "ecology" of the educational institution or system in which the decsions were made.

In most of these decisions (except the original decision to adopt the program), feedback of information was a major factor in the choice of alternatives at the next "decision-point"; therefore

the system seems to have operated as described by Weiner (1964) and others in discussing a cybernetic system. In the technical sense, this type of information flow can be called "negative feedback."

Of course, the quality and quantity of information available was a decisive factor in the original adoption decision, as well as in the several planning decisions. The information available in the system at the inception of the program might be called feedback in that conditions in the ecology of the system -- pressure of student numbers, the new State requirements, etc. -- helped set the stage for the development of the new program. At very least, they predisposed the planners toward the program adopted.

The events which made up the life cycle of the Common Learning at Northern Michigan University may be charted as a series of decision-points, as shown in Figures 7, 8, 9, and 10. Let us consider how these decisions were arrived at and how they were controlled by information feedback and by situational or ecological factors.

Decisions before 1966

The decisions which were taken before the fall of 1966 had to do mainly with the form and extent of the innovation, rather than with its modification, though some modification of the originally voted-on

format of the program did take place between June 1965 and the fall of 1966. The most important decision of the whole program -- that to adopt it -- of course took place within this time period (June 1965).

Early Planning Decisions:

It is somewhat difficult to state what was the first decision point within the life cycle of the innovation. In fact, in a very real sense, the program during its gestation had faced several points of decision before the adoption decision stage. The decisions made at those times were planning decisions reached in Committee A and its sub-committee, the Committee on A Common Learning. (See Figure 7.) These decisions were: first, whether or not to consider a program of general education; then, what form this program would take; and finally whether or not to recommend the program in final form to the Faculty Senate. During this period, a relatively few members of the faculty were intensively occupied with the program, and the decisions taken were individually small but almost continuous. Much time was spent in searching for information upon which to form an opinion as to what the program should be like and in planning the actual program.

In terms of Rogers with Shoemaker's (1970) model of the innovation decision process, the awareness stage came rather early to those on the Committee, when the concept was brought before

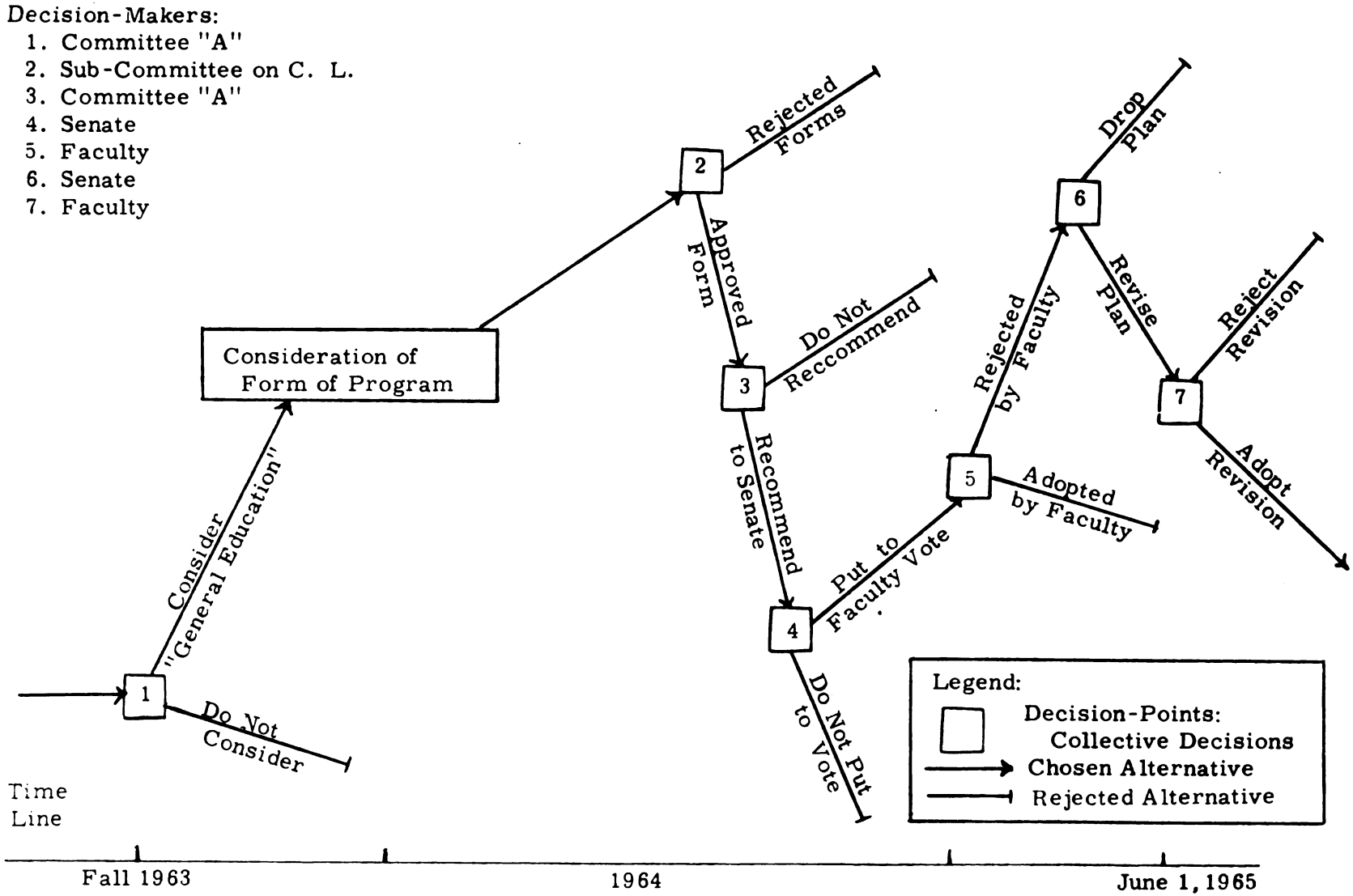

Figure 7 DECISION-POINTS: 1963-June 1, 1965

them by the Academic Vice President (in fact it is probable that some had heard of this sort of program before). The period of awareness for the faculty as a whole came later, as they were apprised of what was going on through a series of reports. Even so, they had a chance to be aware of the existence of the innovation at least as early as during the 1963-64 academic year.

Opinion formation for those at work on the program seems to have occupied a considerable period, since they reserved judgment until they had rather thoroughly studied all the alternatives available to them. It seems fair to state that for them this study was intensive and exhaustive. For the whole faculty, however, opinion formation obviously took a much shorter time, through a two- or multistep flow of knowledge, and was accompanied by a great deal less information transfer than for the members of Committee A and its sub-committee. However, even the faculty at this time had considerably more information on which to form an opinion than those who arrived during the summer of 1966 to start teaching in the fall, or than those who came to Northern even later.

Adoption Decision:

The culmination of the series of planning decisions was the decision by the whole faculty to adopt the innovation. However, at

the first vote in January 1965, the faculty rejected the program, and it had to go back to the drawing boards for a quick reworking before being accepted in June of 1965. For this reason, the chart in Figure 7 shows both Decision-Point 5, the lost vote, and Decision-Point 7, when the program was actually adopted by faculty vote. It is obvious that attention to feedback by the Faculty Senate (in the form of a questionnaire sent to all faculty) made possible the second, positive vote. Considerable revision was made to the plan during this period.

Quality of the Decisions:

It would seem that, in terms of available information and the quality of that information, the decisions made by those on the two committees should have been quite high in quality. Members of the Sub-Committee on a Common Learning spent an estimated minimum of 60 hours of discussion in meetings over approximately a year and a half, plus an undetermined amount of discussion and study outside of the actual meetings. They not only talked informally with other faculty, but invited many faculty members to meet with the committee for discussion. Reading the book "A Common Learning" by Thomas (1962) alone would have occupied from three to six hours study time. While such time spent does not mean, of necessity, that the quality of the information was high, at least these people spent sufficient time to make a quality decision possible.

Members of Committee A spent less time in considering the program, but they, too, seem to have spent as much as 30 hours in meetings and even more time outside their meetings in consideration of the program. The average faculty member during this time period spent much less time learning about the program, probably most of it being spent in reading the reports of the two committees or in discussion with committee members. The reading probably averaged less than two hours. Of course, varying (and unknown) amounts of time were spent in interpersonal discussion with those in their own groups, and with opinion leaders. In any case, the general faculty had much less information on which to base its decision than did the Committee members who recommended it.

Also, it is probable that the opinions of the faculty were based more on interpersonal contacts in regard to the program with liaison persons or opinion leaders than on actual study of what the program itself was like and what alternative existed to its adoption. Analysis of the results of the who-to-whom survey at this time period bears this assumption out. Of those liaison persons who had contacts with five or more "totally communicant" groups during that time period, all except one were members of the administration (i.e., department heads or higher). The one exception was a member of the faculty senate, parent body of the committees which developed

the Common Learning. Three of these top seven liaison persons were also members of Committee A or the Sub-committee. If we include the academic vice president (who showed no reciprocal communicants because he did not return a questionnaire, but with whom 42 persons reported communicating) then four of a top group of eight liaison individuals were members of the committees. Thus all of these liaison persons were in a position to have detailed and inside information concerning the development of the program.

Perceived Utility of Choices:

One of the criteria which decision theory uses to predict the way a decision will go is the perceived utility of the alternative choices to the decision-makers (Edwards and Tversky, 1967, and Savage, 1954). In the case of the decision to adopt the Common Learning, it seems clear that the leaders of opinion at that time (the academic vice president, the eight "star" liaison people, shown in Table 11, and others with three or more group contacts) perceived great personal utility in the adoption of the program, as well as positive utility for the University. As pointed out by those interviewed in depth in the focused interviews, this was especially true of the academic vice president, whom they remembered as the driving force behind the adoption of the program. They felt that he saw this development as a great step in his own career; in point of fact, he did achieve a step upward in his career which

took him to the presidency of a larger college than Northern before the program was actually put into effect in the fall of 1966.

The program also provided several others who were active in its development with considerable advancement. Of the seven "stars" in terms of number of group contacts, mentioned above, at least four received substantial advancement in the University in the years which have passed. Two of the group became academic vice president, in turn, and later left Northern for better posts. Another became the first Dean of Common Learning and later left for a better position. The fourth became Dean of the Summer School and Assistant to the Academic Vice President, and has since departed for a more responsible position. A fifth member of the "star" group was for several years a leading member and the chairman of the Faculty Senate, a position of considerable power. He is still a member of the executive committee of the Senate. Whether or not these men perceived personal utility in the development of the Common Learning, the facts show that it did pay off for them; it seems safe to surmise that they did expect personal utility from the program.

The utility of the choice of the Common Learning for the University also seems clear. As noted before, the institution was in a period of rapid growth. The old departmental lower-level

courses were not able to handle the increased numbers of students which were arriving, nor were these students getting a well-rounded educational experience. Besides, State requirements were not being met in terms of general requirements for those expecting to get teaching certificates. In addition, it was thought that this program would lend more academic respectability to Northern. A leading institution with a large enrollment elsewhere in the state had such a program. Thus several advantages were perceived as accruing to the institution from the adoption of this general education program.

Finally, it may be concluded from the focused interviews that the institution as a whole was ready for change at this time; the climate or situation was right for innovation. Many of the faculty members were relatively new to the campus (See Table 3) and were impatient with the old ways of the institution. They were out to make their marks in education. This was true, too, of the top administration. The President and Academic Vice President were determined to build Northern into a true University from its old status as a teachers' college. The Common Learning was one of the avenues of change and growth they chose.

In summary, concerning the original adoption decision of the Common Learning, it appears that considerable information about such an innovation was available to those planning it; that those

most concerned with the details of the program had studied the alternatives thoroughly, or at least had spent considerable time doing so; and that interpersonal communications concerning the development were intensive and persuasive. The planning decisions were, in a sense, authority decisions, since the body of the faculty was not able to vote on them. The two adoption votes were, however, collective decisions in the sense that they were submitted to all-faculty vote. Finally, it seems the ecological conditions within the institution were right for change.

Developmental Decisions:

The adoption decisions (one against adoption, the second in favor of adoption) were voted on by the faculty, and in this sense were what Rogers with Shoemaker (1970) call collective decisions, as noted above. However, these were the last decisions to be taken by means of a total faculty vote in the life cycle of the innovation to date. A whole series of important decisions followed before the time when the first courses were taught to students in the fall of 1966. These decisions are shown in Figure 8 as Decision-Point No.'s 1, 2, 3, 4, 5, and 6. They were decided in most part by the academic administration and coordinating committees, led and (according to some of those interviewed) dominated by the academic vice president. This series of decisions began the series of mutations which took place in the originally planned program of the

Common Learning, as well as defining it in detail and in fact. Feedback of information from each decision affected the decision which followed.

The first decision-point in this series had to do with the organizational structure of the Common Learning. The alternatives were to establish a separate school with its own faculty and administration; or to simply draw the faculty from the existing departments and set up a "coordinating" administration for the program itself. It is not known how much information about the possible alternatives was collected, but the choice was made by the top administration to draw faculty from the departments. This decision set up the organizational structure noted in Figure 2 and has been a source of continuing irritation to the departments, as indicated by the focused interview.

The second decision-point concerning the development of the program dealt with whether or not to institute the program on a trial basis before proceeding to full-scale use. In this case, considerable discussion took place within the committees who were planning the program, according to those interviewed. Many faculty members favored a trial period. Discussion also took place in Committee A (the curriculum committee) and within the academic administration itself. According to those interviewed, a considerable body of opinion in these areas also favored a trial period.

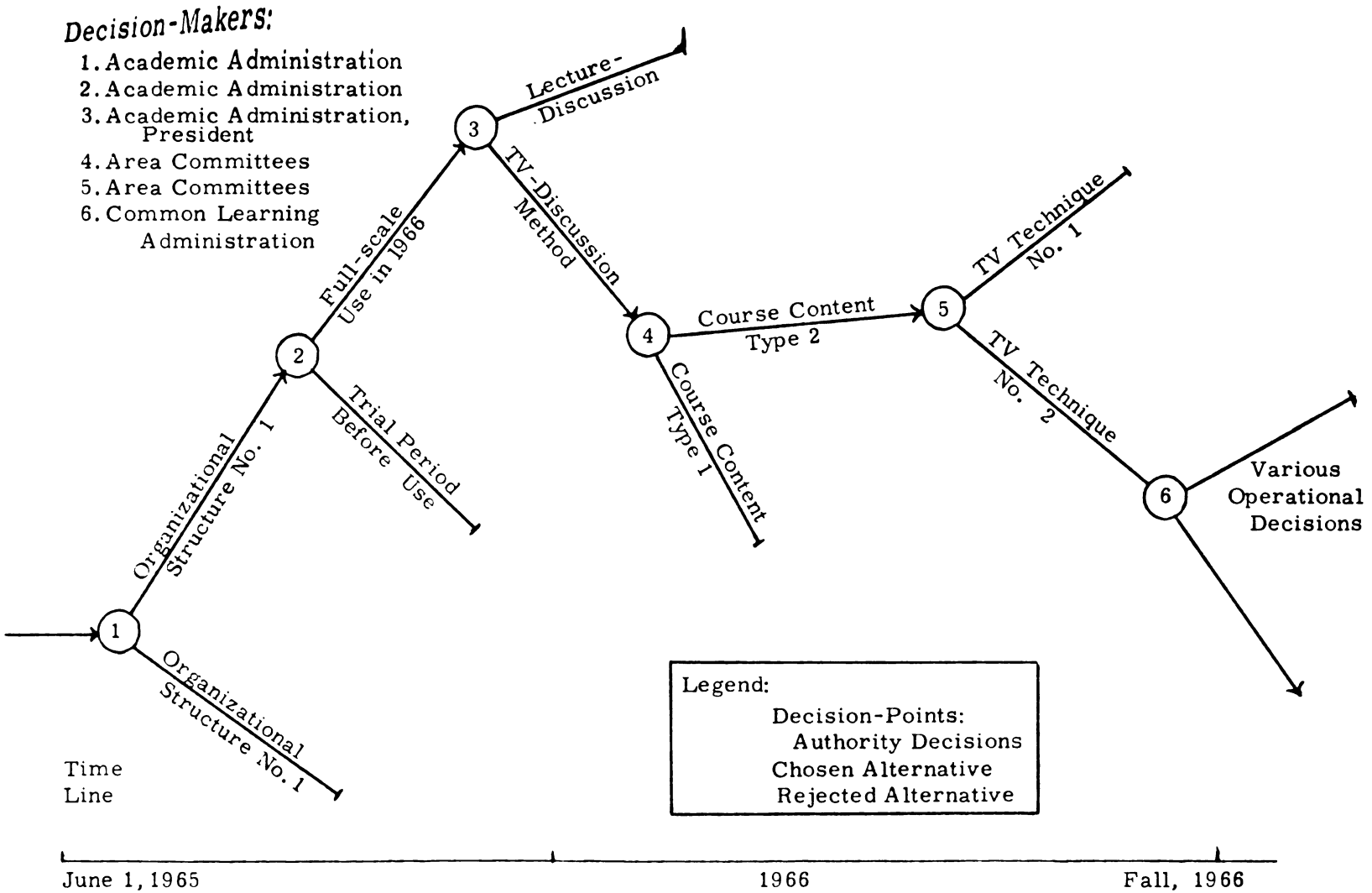

Figure 8 DECISION-POINTS, June 1, 1965-Fall 1966

However, the decision was made by the academic vice president (who no doubt consulted the president) to go ahead with the full-scale effort in the fall of 1966. It is probable that this decision was influenced by the history of delay and trouble in the program previously.

While the information concerning the possible alternatives should have been sufficient, the decision proved to have been a low quality one. (Of course, a trial period might also have failed to produce a satisfactory program.) It may have been that the academic vice president perceived utility greater to him in getting the program in operation as an accomplished fact than in being more cautious. It seems he perceived the arguments of those who would have instituted a trial period as a stall tactic to try to defeat any use of the program at all. In point of fact, many may have had that in mind.

The third decision-point concerned the alternatives of choosing to teach the courses in Math-Natural Science and in Social Science by means of lecture-discussion, or by means of TV "lectures" followed by small group discussion and laboratory work. In this case, the decision was made by the academic vice president and the president of the University after the TV method was recommended to them by the committees of faculty members

involved with course planning. In turn, these committees had consulted in depth with members of the Instructional Communications Department concerning the TV method and what would be required to implement it. A paper had been developed by the chairmen of these two committees and the head of the Instructional Communications Department (see Appendix D) outlining what should be done for successful use of this method. Finally, both the chairmen of the Math-Natural Science committee and the Social Science committee had in the past done television courses, and so had experience with the medium.

Thus, it seems reasonable to assume that an adequate amount of information was available concerning this sub-innovation. However, it was evidently not utilized properly. The decision-makers did not seem to realize amount of resources, length of lead time, volume of work, and need for talent required to produce high-quality instructional teievision programs. Thus, though quantity of information was sufficient, use of it was low, and the quality of the decision might also be considered low.

As to the utility of the chosen alternative for the institution and for the individuals making the decision, the perceived utility for the institution in the mind of the top administrators may have been that of reducing the number of instructors required to teach

the courses, and the academic preparation level of instructors needed, thus reducing the cost of the program. It is also probable that the perceived utility of the choice, for the two faculty members who were chairmen of the two committees, had to do with their expected advancement by way of being two of those who taught by TV. One actually did so; the other was scheduled to do so, but withdraw at the last moment, just before taping was to have begun.

Several decision-points arose during the 1965-66 academic year concerning the future operation of the system. The first of these was the decision on whether to follow the best known TV techniques (which would have been more expensive and more time consuming); or whether to use TV as a substitute for the lecturer only, without significant alteration in the lecture method (except that it was televised instead of being delivered in person). This decision was taken by those on the two committees involved, but was ratified by the academic vice president and later by the newly-appointed dean of Common Learning.

It appears that sufficient information was available to the decision-makers, since considerable discussion was carried out with members of the Instructional Communications Department (who warned against the use of the lecture method on TV) on this point. However, perceived utility to the decision makers was

obviously on the side of using inexperienced TV teachers and planning the lessons as TV lectures. First, this course of action cost considerably less than it would have cost to use top-level instructors to teach the TV lessons. Second, no one was to be "forced to teach in Common Learning," and most of the senior faculty at Northern did not want to be involved with this lower level activity. Third, those involved with the project did not wish to relinquish the lecture method in favor of one they less well understood, even if it was better adapted for TV use. In fact, they remained unconvinced that lecture was not the best method. Thus, the planned method of presentation, chosen in decision No. 3 above and detailed in the proposal paper, was never properly put into operation.

Other operational decisions were undertaken during the final phases of the development of the program. These were too numerous to trace in detail, but have been noted in Figure 8, since each had a small part in delineating the details of the program which was finally presented to students. It is probably however that in sum these operation decisions were less than satisfactory, because of factors listed below.

During the whole period following the adoption decision of the Common Learning in late spring of 1965, the institutional

situation was not conducive to quality planning. A great deal of urgency was placed by the academic vice president on the development of the program for use by fall of 1966. At the same time, indications came from the admissions office that approximately 25 to 30% more students would be enrolled in the fall of 1966, and that the majority of them would be freshmen, who would take Common Learning courses. This meant that a large number of new faculty would be needed. Finally, to complete the institutional urgency under which the planning committees were working, budgetary considerations were particularly difficult at this time.

Pressure existed from the Vice President for Business and Finance to keep costs low, and to save money wherever possible. This led to hiring a large number of instructors for the program instead of higher-level faculty. (See Table 3.) Cost considerations may have been a major factor influencing the administration to choose to use TV, because it felt this would be a lower cost method of instruction. These combined environmental pressures affected the program extensively.

Post-1966 Decisions

After the start of classes in the Common Learning program in 1966, decisions continued to be made in the program, but until 1968 they were largely internal Common Learning decisions made

during the operation of the program. The decision-makers were the Dean of Common Learning, the coordinators and Area Committees, and to a lessor extent the faculty who taught in the program. However, the decision to turn the guidance of the program over to the Associate Dean of Arts and Science was made by the academic administration.

From the fall of 1966 through the spring of 1967, a large number of these operational changes came about. These changes, and the decisions which implemented them, are detailed in Figures 9 and 10. It appears that what was being sought in all of these cases was a sort of "least negative fit" such as that discussed by Alexander (1964). In this variety of decision-making, small things perceived as non-functional or not useful are immediately changed in an attempt to adjust them to prevailing conditions, without any overall plan being made for the whole program. In the Alexander example (the building of native homes), this process results in structures which are wonderfully (but sometimes oddly) adapted to prevailing conditions without being originally planned to fit in this way. This process is contrasted with our type of building in this country, where a plan is first made, then followed in detail. The "least negative fit" idea seems akin to negative feedback control as described by Weiner (1964) in cybernetic systems.

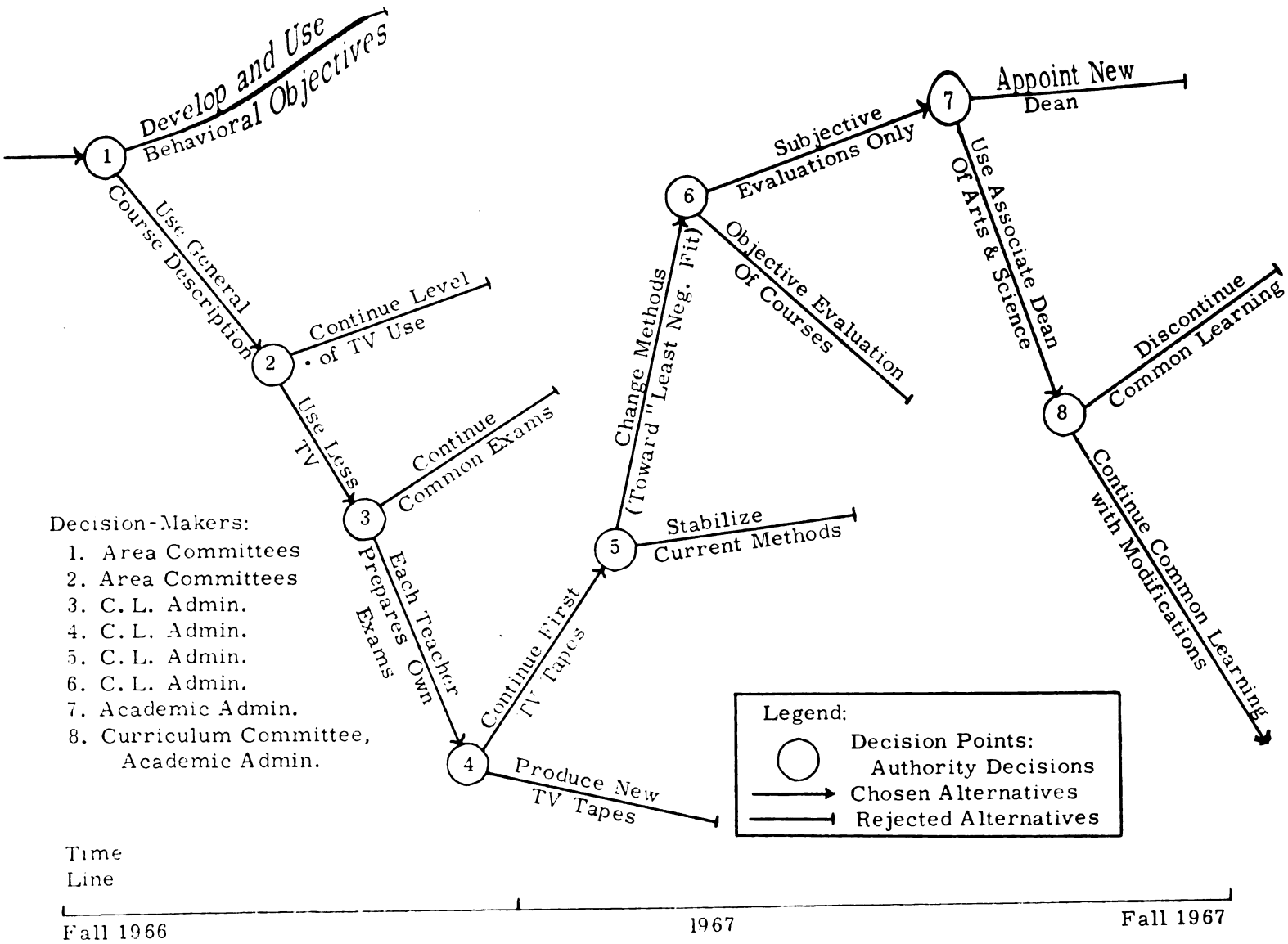

Figure 9 DECISION-POINTS, Fall 1966-Fall 1967

In actuality, self-conscious re-design of a program like this is difficult within a constantly changing environment (Edwards, 1967). In fact, in such a changing environment, it may well be impossible to achieve a "best negative fit" for a system. Alexander (1964) points to the danger of over-reacting to a changing environment, so that a given change is never really tried before the next is placed in process. Such a situation also seems akin to positive feedback effects, as noted by Weiner (1964). Many of the modifications of the Common Learning program approached such a state.

Whether or not the constant adaptation of the program of the Common Learning actually resulted in wonderful adaptation to conditions, it is probable that the motive of those making the decisions was to maximize the utility of the choices as they perceived them -- to make the program "responsive" to those teaching in it, and to the students taking the courses. Thus, new TV tapes were produced, fewer tapes were used, the commonality of the original program was first diluted and finally dispensed with completely, and subjective evaluation of the courses was utilized instead of objective evaluation of actual learning, based on attainment of previously stated course objectives. Finally, the organization of the program was changed to eliminate the Dean of Common Learning, giving the administration to the part-time control of the Associate Dean of Arts and Sciences and to an increased number of coordinators.

These events point to the need for numerous and sophisticated "sensing devices" in the organization, if it is to be controlled by negative feedback or if it tries to achieve a "least negative fit." The reaction to such feedback will be imperfect if all relevant factors are not fed back -- and if all possible ways of discovering "least negative fits" are not employed. Reaction will also be imperfect if the channels of communication are inadequate or ineffective.

Communication Patterns:

An examination of the communication patterns during this period shows a much larger number of groups of "total communicants" than during the period before 1966. (See Chapter V.) Also, a much larger number of liaison role persons emerged. Each of these persons had more group contacts. Many of these liaison persons were those in important administrative posts in the program. The top three persons in numbers of group contacts were the first Dean of Common Learning, the Associate Dean of Arts and Science (who took control of the program when the first Dean left Northern), and the coordinator who later became the Associate Dean of Common Learning. However, a number of faculty liaison individuals did play important roles in the program. The importance of these people as group liaisons emphasizes the internal nature of the

communication structure at this period. Since very few department heads were involved, it is no wonder that the department heads complained that they did not know what was going on in the program.

The major portion of the totally communicant groups, too, appeared to be within the program, either as administration or as faculty of the program. While the questionnaire did not sample all faculty entirely outside the program, information from the focused interviewed indicated this trend, as well. Again, this result points up the fact that, during this period, those in the program talked largely with each other. Much of the other communication noted seems to have been within the departments which had hired the faculty members in the first place.

At least three liaison persons with a high number of contacts did emerge from the faculty itself. The one of these with the most contacts, 14, was at first an ordinary faculty member in the program, arriving in the fall of 1966. Later, he was named as coordinator of one sequence in the Humanities. Another, with 10 group contacts, was a part-time TV teacher and a discussion leader in Math-Natural Science. Later, he was an ordinary instructor in the program. Another one of the three top faculty stars in the group contact area was an instructor in the program and a

member of the Natural Science area committee. Several other faculty members were important liaison persons.

A study of the communication patterns which were identified through the questionnaire shows a rather high level of communication took place among a few persons (mainly the committees) before 1966. After 1966, more than three times the number of "totally communicant groups" developed as had existed pre-1966. It is probable that quantity of information flow within and among these groups was high. It was feedback information about current conditions within the program, in the main. Information concerning the original aims and objectives was somewhat lacking, according to those questioned in the focused interviews. Fewer and fewer of those teaching in the program during later years were present when the innovation was planned and adopted. These newer faculty were never exposed to the intensive study of alternatives that took place during the 1963-64-65 period.

In terms of perceived personal utility, no doubt little value was seen by the new faculty in continuing the program as it was originally established. Most of these teachers were people with master's degrees who soon moved on to work on advanced degrees or to different positions, or were mobile for other reasons. They were certainly not thoroughly dedicated to giving the idea of a

Common Learning for all a systematic trial. There was no new experiment with which to identify. It was better in their view to modify the program to something more nearly approaching the type of teaching which they had experienced in their own college work.

There was more perceived personal utility, too, in teaching discipline-oriented subject materials than in attempting a course format which incorporated several disciplines. As most faculty saw it, this was additional effort for little or no extra gain. Thus chemists drifted into teaching chemistry; biologists, biology; and political scientists, political science -- rather than following the interdisciplinary plan upon which the Common Learning was formulated.

This fractionalization and internal strife had little utility for the institution, so in the spring of 1967 another decision-point was reached in which the alternatives were to drop the Common Learning or to continue it, but in a modified form. Those who made the decision were the members of the Curriculum Committee, with institutional utility as the prime consideration. The choice was made to continue the program, under new administration, and in somewhat modified form. This was perceived as having greater utility for the institution than dropping the program completely, as

some wished to do. Much study and discussion went into this decision, as noted in the History section.

This turned out to have been an unstable arrangement, however, as forces on campus still wished to further modify the program, and to do away with all commonality in it. Another decision point was reached in this regard in February of 1969, when final modifications were adopted. The decision-makers in this case were the members of a Task Force on the Future of the University, appointed by the new President when he took office in the summer of 1968. This task force had utility to the University in mind, but since all the decisions which had gone before obviously influenced this decision, it seemed best to further modify the program and make it less interdisciplinary. The group did feel that the aim of a liberal education was still a valid one, but did not feel that it should be required of all students.

It seems safe to say that they had sufficient information upon which to base their decision; but the leadership and past history of the institution -- the whole institutional situation -- was different than when the original decision was taken, so the decision was different, in turn. The chief organizational change was to recommend the appointment of an Associate Dean of Common Learning under the Dean of Arts and Science, who would "be

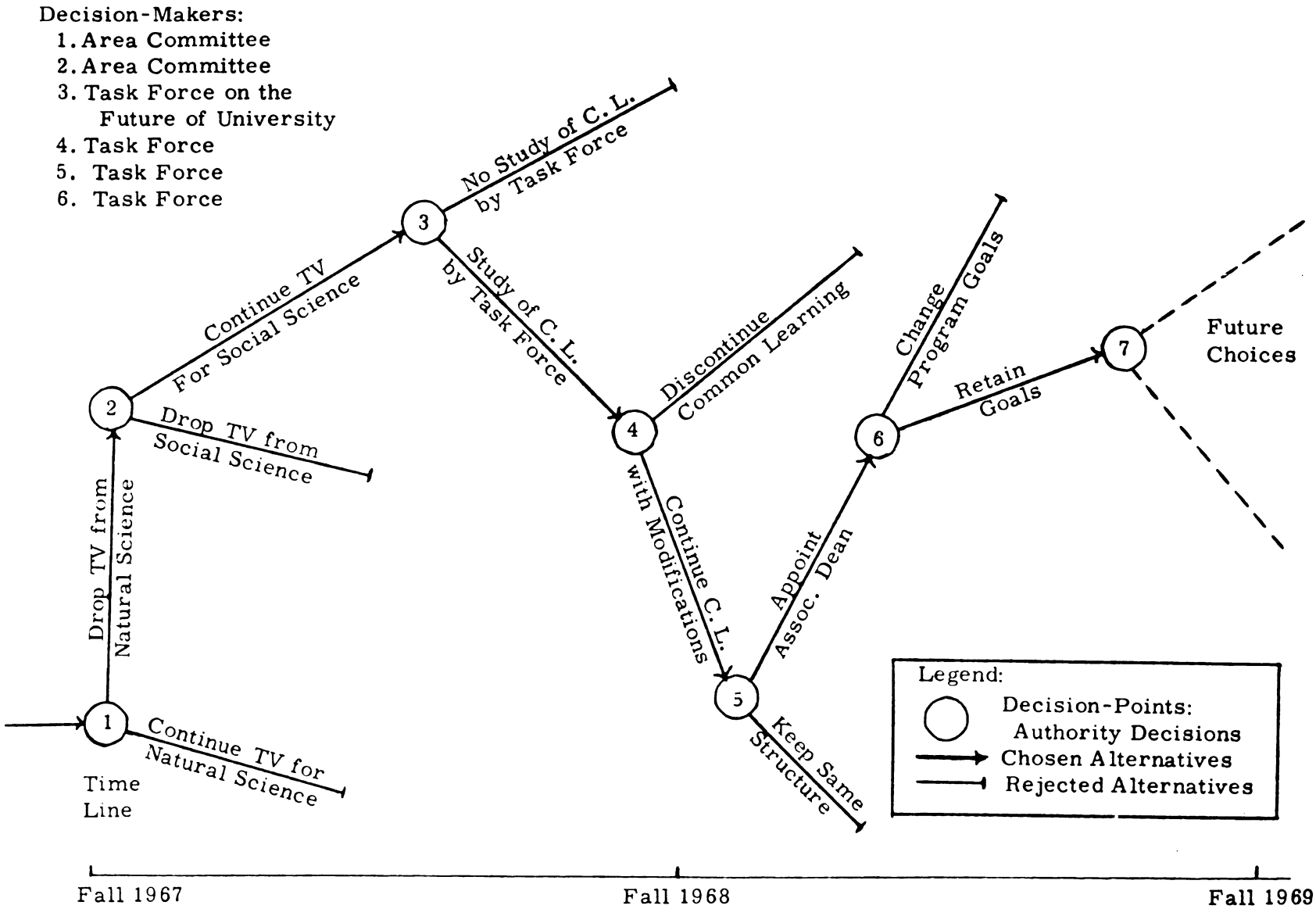

Figure 10 DECISION-POINTS, Fall 1967-Fall 1969

delegated the authority for seeing that appropriate special departmental courses and interdisciplinary courses are offered." This dean was also to work with department heads to assure a better faculty which really wished to teach in this type of program.

Summary of the Innovation Decision Making

In summary, the life cycle of the educational innovation known as the Common Learning at Northern Michigan University may be viewed as a long series of choices between alternatives, beginning with the original choice of whether to undertake the planning of such a program, extending through planning decisions, the original adoption decision, a long series of decisions to modify the program in varying degrees, and concluding with the decision to continue the liberal studies aspect of the program, but little actual commonality (which was the original hallmark of the program).

The decision-makers who determined the development of the Common Learning program changed from decision to decision as the program progressed. At first, the decision-makers were members of the curriculum committee (Committee A) and its Subcommittee on a Common Learning. Later, these committees presented their plan to the Senate, which then became the decision-maker on whether to pass it along to the whole faculty. When this was done, the faculty as a whole had a season of decision-making, finally deciding to adopt.

Then decision-making passed to the committees for each of the three subject discipline areas, and to the administration of the program. After classes had begun, the faculty members teaching in the program had much to say -- along with the program's administration, and even students -- concerning decisions taken to create a "least negative fit" in the program. Finally, the curriculum committee again and later the Task Force on the Future of the University became the major decision-makers. (See lists of Decision-Makers in Figures 7, 8, 9, and 10.)

Perceived utility of choices for each of these diverse groups of decision-makers -- both perceived personal utility and perceived institutional utility -- varied greatly. For this reason, the basis for each change at the decision-points noted also varied greatly. Information available to each of the groups involved in decision-making also varied greatly. Of course, feedback of information concerning the effects of the previous decisions was always present, but was sometimes interpreted variably because of the change in decision-making groups. Finally, the situation which prevailed in the institution as a whole during each period of decision-making had a strong and persuasive effect upon the choice of alternatives -- even upon the type of alternatives which were available for the choosing.

In short, the innovation decision-making traced here proved not to be a simple, once-only, adopt-reject choice, but a complex and continuing series of decisions continuing over more than seven years. Each decision was made by a different cast of decision makers, and each had its effect -- whether major or minor -- upon the continuing life of the program called A Common Learning.

Instructional Communications as a Change Agent

The purpose of the part of the study which questioned the perception of the role of Instructional Communications was to test the view of the faculty concerning this agency. It attempted to determine whether or not the faculty perceived Instructional Communications as having a legitimate role to play in bringing about changes in teaching methods, and whether or not the faculty felt it had actually carried out this role. As shown by the historical records cited above, it did in actuality play a large part in the decision to adopt TV as a teaching method. The department also helped develop a plan which would have made the use of TV a part of a larger system of instruction, as well as using this medium to do the things it could do best.

It was clear from the answers received that most respondents did feel that this group had a legitimate role to play in developing the kinds of methodology in question. However, most people felt

that the group did not in fact carry out this responsibility. This may have been due to the fact that the decision to use TV was made by a relatively few faculty members; those who were members of the Math-Natural Science committee and of the Social Science Committee. The only other persons involved in this decision were the academic vice president, the president, and the Coordinator of Instructional Communications. Thus, the average faculty member would have had little occasion to know what was being done. Again, it is probable that the newer faculty were never told how this decision was reached.

Most people who replied also felt that the department had a responsibility to help carry out the instructional system in the best possible manner after it was adopted. Again, however, most people felt that this was not done. This perception may have been based on the feeling held by most people that the tapes were generally of poor quality, made by faculty who were not as well qualified as they might have been. This perception of the role of the department was actually based on a misunderstanding of its ability to influence those in charge of the program. Those in charge of developing the TV lessons were, as a rule, not amiable to suggestions from the TV producer-directors working with the program or from the other members of the Instructional Communications

Department. This may have been due, in part, to the fact that both producer-directors who worked with the program were newly hired, and had not had a wide background of experience before coming to Northern. In any case, it was usually beyond the capacity of the TV staff to insist on production quality. The TV lessons became largely taped lectures -- the so-called "talking face" -- rather than true TV programs. It appears that most respondents blamed the department for allowing this to take place. In fact, as a change agent group, it failed in this regard.

Finally, it appears that the TV lessons were used by the faculty as the scapegoat for many other factors which they considered ills in the Common Learning program. Rather than join together to make the program truly interdisciplinary, it was easy to say that the TV lessons were no good, and so each individual instructor must teach his own way to save the course for the students. Much pressure was put upon the administration of the program for change by such statements from their faculty. If sufficient indoctrination and information concerning the goals and objectives of the courses had been given to new faculty being brought into the program, it is possible that the perceptions and perhaps the results would have been different.

In summary, while it seems that the Instructional Communications Department was successful as a change agent in getting TV introduced, it did not attend properly to the consequences of this adoption by assuring high quality programs, reliable reception, and proper utilization of the TV programs produced. In this respect, it failed as a change agent. Therefore, the total effect was a failure of the introduced sub-innovation, that of teaching large groups of students by television.

CHAPTER IX

SUMMARY AND CONCLUSIONS

Summary:

The present study was designed to investigate the developmental progress or life cycle of an educational innovation in an attempt to better understand this complex and important process. It was carried out as a participant-observer field study, using as tools of study: 1. non-reactive measures such as reports, memos and other historical records; 2. a questionnaire to a. survey patterns of information flow within the organization at two time periods and b. test perceptions of a change-agent group; and finally 3. focused interviews with persons in a position to understand and interpret what took place during the planning stages, adoption of the innovation, its later utilization and final modification. An explanatory scheme was employed which involved certain of the concepts of decision theory, general systems theory, and cybernetics to interpret and combine the results of these three methods of investigation of the life cycle of the educational innovation. This life cycle covered at least seven years from 1963

to 1970, and moved from conception and planning to adoption, through modification, to partial discontinuance of the innovation.

Conclusions:

As a result of the study which has been presented in this report, it seems possible to advance certain tentative generalizations concerning organizational innovation decision-making, especially within an institution of higher learning. These generalizations may serve both as conclusions of this investigation and as possible hypotheses for later investigation and for other researchers. Fifteen such generalizations, with supporting explanation, are presented below:

1. Innovations in complex organizational systems tend to progress through a typical life cycle, extending from their inception through developmental planning, adoption, modification, and eventual steady state, or discontinuance.

The life cycle of innovations in organizational settings tends to be of the type described by General Systems theorists, especially Rapoport and Buckley. Such a life cycle is a process, complex in nature, with numerous and overlapping stages or functions. It takes place within a larger system context (that of the organization itself), and is influenced by a wide range of larger-system influences, stresses and pressures. Though those most closely

identified with the innovation often try to maintain a "steady state" or homeostasis, various internal stresses and pressures are also evident. Both the internal stresses and the external, larger-system forces tend to cause modification of the innovation.

It is worth noting that, because of the complexity and dynamic nature of innovation decision making in organizations, a method of viewing and studying them which takes into consideration their process nature is necessary. The process-systems viewpoint adopted in the present study proved useful. The method employed -- that of participant observation using the techniques of historical analysis, communication survey by mailed questionnaire, and focused interviews with key individuals -- appeared to be a valuable approach.

The study of the Common Learning at Northern Michigan University illustrated quite well the process nature of innovation decision-making. Individuals and individual units within the University went through stages, or "functions," of the process similar to those described by Rogers with Shoemaker (1970) for individual innovation decision-making, though these functions were more complex in the organization setting. The institution itself progressed through similar functions as an organization. The progress of the institution in innovation decision-making is illustrated graphically in Figure 1.

The innovation was not a simple matter of a single adoption decision, after a period of knowledge acquisition and opinion formation; instead, it entailed a long series of planning and developmental decisions, made by a variety of decision-makers in the University. After the adoption decision, institutional and within-system forces began to operate which brought about a continuing series of modification decisions. These modification decisions continued until, by the end of the study, the innovation had reached a state much like that which prevailed before the adoption of the curriculum change. In other words, the life cycle of the innovation was complete.

2. A. The introduction of a major innovation into a complex organizational system tends to affect all other parts of the system; B. in turn, the other parts of the system tend to affect directly or indirectly the original form of the introduced innovation, and its later modifications.

Complex organizational systems, such as an institution of higher learning, are composed of highly inter-related and inter-dependent parts. A change in any one of these parts tends to produce far-ranging effects upon all the other parts, as would be expected from systems theory. This proved to be the case with Northern Michigan University during and after the introduction of the Common Learning. For example, the Common Learning

program had no faculty of its own -- instead it drew its faculty from the departments in the disciplinary areas involved. This, in turn, caused a budget drain, as well as a man-power drain, in the departments affected. Thus, according to the department heads affected, the departments were not able to offer as many courses as they wished in their own disciplines. Also as a result of this organizational structure, the first dean had little real authority and thus had difficulty administering the program.

On the other hand, the relationships and loyalities of the faculty members who taught in the program with and to their departments seriously affected the development of the Common Learning; for many of these faculty members continued to prefer to teach in their own disciplines, and so sought to break down the interdisciplinary nature of the new program. Another larger-system factor which seriously affected the program was the apparently unrelated unrest caused when a junior level faculty member was dismissed after a disagreement with the president of the institution. The ensuing institutional turmoil had a pronounced effect on the modification of the program.

3. <u>An innovation is more likely to be adopted into a complex organizational system, and is more likely to be continued in use after adoption, if it is compatible with the existing norms and operational practices of the system.</u>

This generalization is similar to findings of individual innovation studies by many research workers. Change agent organizations and groups have long accepted this generalization. For example, the Agricultural Extension Service has operated for many years on the premise that it is easier to introduce innovations which are compatible with existing farm practices in a given area than ones which require development of totally new approaches or techniques.

In the case of the Common Learning at Northern, it seems clear that the interdisciplinary nature of the program went against the existing norms and practices of the majority of the faculty of the institution. Most of the faculty did not wish to teach in such a system, or preferred to alter the subject matter presentation to their own preferences. Thus, chemists tended to emphasize chemistry and biologists, biology, in the natural science sections, rather than attempting to present a well-balanced mix of all the natural sciences. In other words, these dissonant faculty members tended to alter the innovation so as to be less dissonant toward it in their own classrooms. Such a reaction has been predicted by Rogers with Shoemaker (1970).

The same sort of incompatibility was apparent in the treatment accorded the sub-innovation of television teaching. Certain

discussion-section teachers in Social Science seldom referred to the materials presented on the television lessons, though they were in theory supposed to discuss the problems raised in these lessons. Instead, they ignored what was presented on television, and conducted their discussion sections as if these were individual courses taught by the individual instructor alone. Their examinations, also, were often based on their own presentations rather than on the common problems presented to all students by the medium. Thus, these teachers forced change in the innovation, and eventually secured the elimination of the commonality feature of the program.

4. A simple innovation can be more easily introduced into a complex organization and has a better chance of continuance after adoption if introduced alone, than if introduced as a component part of a "package" of innovations.

Innovation research with individuals has indicated that less complex innovations are more easily introduced than more complex ones, especially if they are compatible with the operational norms. The same should apply to innovations made by organizations. Introducing more than one innovation at a time would tend to add complexity to the adoption process, especially if each were complex.

The Common Learning was introduced at approximately the same time as a curriculum innovation known as the "four course plan." This plan discarded the Carnegie units of course credit,

and instead counted each course as a unit, with four courses being a full load for a student during a given term. This innovation was confused by many with the Common Learning, with the result that ills of the one were often blamed on the other. This made both innovations increasingly unpopular.

Again, the sub-innovation -- teaching by television -- would have been much easier to introduce into an established curriculum program than it was into the newly introduced Common Learning. The television lessons often tended to be blamed for the ills of the whole system, with the result that television teaching in the program and on the campus as a whole entered a decline in popularity with a majority of the faculty. Very few are currently willing to use this method of instruction, though it has proved its effectiveness elsewhere.

5. For easiest introduction and best continuation, an organizational innovation should first be introduced into the system on a limited scale (i.e., on a trial basis), before being expanded to full-scale use.

Another principle indicated by studies in individual innovation decision-making has been that innovations should be introduced gradually, on a small scale at first, rather than bringing them into full-scale use immediately. Again the Agricultural Extension

Service has advocated this approach for many years. The principle seems equally valid in organizational settings.

One of the operational alternatives considered during the first months after adoption of the Common Learning was to institute the program on an experimental basis before full-scale use. This alternative was rejected. Many of those interviewed in the focused interview portion of this study felt that such a trial period would both have given the institution time to become accustomed to the innovation and to have debugged it of some of its flaws.

The sub-innovation of television teaching, too, might have succeeded had it been introduced gradually, and if time had been taken to properly prepare the material used through a series of small-scale tests followed by improvements as indicated by these tests. Those who responded in this study felt that this would have been true.

6. <u>For best maintenance of an introduced innovation in a complex organization, adequate and continued information flow is required from the change agent group to the clients after adoption of the innovation.</u>

Rogers with Shoemaker (1970) have maintained that the final "function" in the innovation diffusion process is what they have termed "confirmation." They point out (Chapter 1) that

confirmation is "a stage at which the receiver seeks reinforcement for the adoption or rejection decision he has made." This view seems closely related to the work of Festinger (1957) and others concerning cognitive dissonance. In an organizational setting, the members of the organization need and seek continued elaboration of the innovative idea, motivation for continuing it, and reinforcement of their opinions concerning it after the "adoption" decision. Providing such follow-up confirming information should be one of the major functions of a change agent group.

In the present case, however, the Instructional Communications Department assumed that adoption of the sub-innovation of television teaching was complete after the subject-area committees agreed to it. The group did not follow up vigorously enough with confirming information, nor did it attempt to convince thoroughly all of those hired to instruct in sections and discussion classes. In the long run, the dissonance of such faculty and the lack of opinion change in newcomers led to the discontinuation of the innovation.

7. A change agent group within an organization functions most effectively in facilitating innovation adoption and later continuation if it is not also charged with operating the introduced innovation.

This generalization follows naturally from that above. The Instructional Communications Department attempted to act in the dual role of change agent group for the sub-innovation of television teaching and of the operational unit to carry it out. It was thus ineffective in the continuing change agent role, in that it could not continue to supply confirmation information adequately at the same time it was assisting with the teaching of courses by television. Instead of becoming involved with the operational details of the program, the Department should have continued to be concerned with the theoretical aspects of the program.

In addition, many problems occurred in the project which were mechanical in nature -- such as distribution line problems, scheduling mix-ups and receiving set shortages, which had nothing to do with the true capacity of the medium for teaching. Nevertheless, these were often perceived as the fault of Instructional Communications. As a result, the group's ability to support and confirm the true capability of television teaching was eroded. In short, the credibility of the group as a change agent was lost because it was seen as unable to produce reliable service.

8. Members of a complex organization do not learn about, or develop opinions about, an innovation at the same rate. Instead, a two-step or multi-step flow of information tends to occur during

the knowledge and opinion formation stages of the organizational innovation process.

Just as in communication of messages many researchers have shown that news does not flow directly from a major source to the ultimate receivers, communication of information about innovations seems to flow in multiple stages. This flow tends to move from organizational inventors or innovators, to opinion leaders or liaison individuals, and finally to the rank and file of the organization. This flow first takes place at the knowledge stage of the diffusion process, but also operates during the opinion formation stage.

How this flow affects the adoption decision seems to depend on the type of decision; whether authority, contingent, collective or individual (to use Rogers' classification of innovative decision). In authority decisions, the whole process may take place at the top level of the hierarchy, and the rank and file may only learn of the decision after its adoption. In the contingent decision form, the executives of the organization may be the innovators, or may learn of the innovation from liaison persons. The adopting authority in collective and individual decisions is the group or organization members or these members acting singly, so in these cases the full range of possibilities exists for individuals to learn of the innovation.

Such a multi-step flow as discussed above was easy to trace in the innovation of the Common Learning at Northern. The academic vice president acted as the innovator. From him, knowledge of the innovation went to "Committee A" and to other key individuals on the campus. These people had progressed far along the way to opinion formation and adoption before most of the campus had much knowledge of the innovation. The rank and file received their knowledge from, and developed their opinions as a result of, communication with various liaison persons and opinion leaders.

After the adoption of the innovation, the communications within the structure continued to follow this multi-stage type of flow, with a much increased number of "totally communicant groups" being linked by a correspondingly larger number of liaison individuals.

In the case of certain authority decisions which were taken during the course of the innovation -- as in the decision to put the program into use on a full scale in the fall of 1966 -- the decision was made by the academic vice president. The rest of the campus learned about this decision through a multi-step flow after the decision had already been made.

9. <u>If negative feedback of information is to be used to steer the modification of an organizational innovation during its life cycle (or if a "least negative fit" is to be sought), then</u>

numerous, reliable and sophisticated sensing devices are needed throughout the system to originate adequate feedback information.

It is clear that action based on feedback can only be as good as the quantity and quality of the feedback allow. Weiner and others have compared feedback in organizations to the nerve impulses from nerve endings which signal heat or pain to the central nervous system and the brain in a human being. To follow this analogy, if the nerve endings are anesthesized or dead, the person cannot sense his environment, and may come to severe harm. If organization sensing devices do not function properly, the organization will suffer. In other words, adequate information of high quality is needed.

It appears likely that many of the decisions which were made to modify the innovation of the Common Learning were taken without adequate information. One example is the lack of sufficient information concerning the actual learning which took place in the program as a means of determining needed changes. As far as can be determined, no study was made of learning in relation to pre-stated objectives, or in comparison with any type of control group. In order to evaluate the quality and effectiveness of the program, opinion sampling from among the students and faculty seems to have been the major, if not the sole, sensing device used. It is quite doubtful

if an adequate amount of quality feedback could have been collected in this limited manner.

10. If negative feedback of information is to be used to steer the original form and later modification of an innovation (or if a "least negative fit" is to be sought), adequate flow of reliable information is needed through the system, but especially up the chain of command.

This generalization is a corollary of that in No. 9, above. Obviously, good sensing devices will not be able to play their part if adequate and available channels of communication do not exist to carry a flow of reliable information to the decision-making centers of the organization. Thus, as many writers on organizational functioning have stated, a strong and healthy information flow up the chain of command is essential.

In the case of the Common Learning, the results of the communication survey seem to indicate that adequate communication did exist, though of course no control group existed against which to test. The number and variety of cliques, and the number of liaison persons noted appear to bear out the conclusion that there was adequate communication. In fact, it is possible that the wrong information (as a function of inadequate sensing devices) may have been transmitted too well in this instance.

11. The higher the level of continuity of persons involved with an organizational innovation, the greater will be the chance of continuation of the innovation.

This generalization would seem especially applicable to those in decision-making positions in the system. Since a large amount of information, commitment and legitimization is required to activate an innovation, it seems clear that persons coming into the organization without this critical level of opinion and information would be less likely to wish to continue the innovation.

In the case of the Common Learning, it appears that the loss of the strong leadership which had been provided by the academic vice president during the period before the adoption of the program had a pronounced effect on the later progress of the innovation. The same was true in regard to the sub-innovation of television teaching when the original coordinator of the Natural Sciences sequence left the program.

A situation almost a corollary to the above also existed. That is, when there is no continuity or when an influx of people into the system occurs, an additional increment of energy is needed. This energy must be devoted to informing and indoctrinating the new people so that they will be persuaded into accepting the innovation. In this case, the influx of a large number of faculty members who had not gone through the whole developmental process of the

innovation in the fall of 1966 had a distinct effect upon the program. It can only be speculated upon, but many of those interviewed felt that things would have been different had the persons who originated the program continued to see it to maturity.

12. Members of an organization who are dissonant in regard to an introduced innovation will attempt to reduce their dissonance by modifying the innovation, by changing their opinion of the innovation, or both.

This generalization is similar to that stated as Generalization 10-1 by Rogers with Shoemaker (1970, Chapter X), as follows: "Members of an organization who are dissonant in regard to an introduced innovation will attempt to reduce their dissonance by modifying the innovation, by changing their opinion of the innovation, or both." This, in turn, relies on the cognitive dissonance and balance theories of Festinger, Osgood and Tannenbaum, and others.

In the present case, many faculty members and department heads were never convinced that the Common Learning was the best program to be used at Northern. In addition, an even larger number of those who arrived in 1966 and after to teach in the program were not convinced that it was or could be effective. Many of these persons continued to work as hard as possible to bring about modifications which would make the program more

nearly correspond to their concepts of what such a program should be. On the other hand, some of those who were originally against the program changed their opinions of it and even became major supporters. In fact, many of these same persons later resisted change or elimination of the program.

13. Liaison role individuals in an organization will tend to be 1. those whose institutional role places them in strategic positions for a high level of communication concerning the innovation, or 2. strong opinion leaders to whom others turn for informal leadership, or 3. both of these.

The results of the survey of the communication patterns both before and after the adoption of the Common Learning bear out the above generalization. During the pre-1966 period, the most important liaison persons tended to be either members of the administration or members of Committee A or its sub-committee on a Common Learning, or both. After the fall of 1966, the major stars of the liaison group were those who led the program at some stage, as well as the coordinators of various parts of the program. Obviously, these people were in strategic positions for communication in regard to the program.

However, certain other individuals who were not in such strategic positions also developed impressive liaison roles. It appears that these were true opinion leaders, with a wide acceptance

among other faculty members who taught in the program and who were members of the regular University departments. These same opinion leaders seemed also to have wide acceptance among the members of the administration of the program, and of the University in general. It would have been useful to investigate what special characteristics these opinion leaders had which gave them their relationship with all segments of the population of the study.

14. Liaison roles held by members of an organization may not remain constant during the whole life cycle of an innovation; in fact, these roles will tend to change with the changing "functions" through which the innovation passes.

It will be remembered that Rogers with Shoemaker (1970) delineated four "functions" in the innovation diffusion process. The operation of the process varies with the "function" of the process. It is reasonable to expect that the liaison roles would also vary with the stage or "function" through which the process is passing.

A comparison of the top liaison persons before and after the fall of 1966 in the Common Learning substantiates the above generalization. The top liaison person before 1966 was the chairman of Committee A, who was also the head of the history department and a member of the Faculty Senate. However, he moved from these roles after 1966, and his position as a liaison person

dropped significantly. On the other hand, the person with the second highest number of liaison contacts after 1966 had relatively few contacts before 1966. In the meanwhile, however, he was named associate dean of the College of Arts and Sciences, and was at one time in charge of the Common Learning program. He was also head of the Curriculum Committee of the Senate during most of the period after 1966. A number of other such examples of similar changes in liaison function could be cited from the evidence developed in the survey.

15. A. Perceived personal utility among possible alternatives as seen by the functional decision-makers in an organization tends strongly to influence innovation decision-making in an organization. B. Perceived institutional utility also tends strongly to influence innovation decision-making in an organization.

It was evident from the results of the focused interviews that many persons felt the academic vice president had a personal stake in the adoption and utilization of the Common Learning program at Northern. These same interviewees felt the fact that the academic vice president was named president of another institution indicated that it did, indeed, provide personal utility in advancing his career. It also appeared likely that others who favored the innovation among those who helped develop and introduce it to

campus saw personal utility to be gained from it. Certainly, a number of those involved did advance significantly in the years which followed.

It seems equally clear that many of the sponsors of the innovation perceived institutional utility in the plan. This is undoubtedly true of the President and Academic Vice President, who were seeking to build Northern from the status of a largely teacher-production institution into a truly comprehensive university for the region. A number of those who voted for the innovation also doubtless felt that it would have high institutional utility.

Needed Research:

The present study indicated the need for further research in several areas. It would have been useful in this investigation if the flow of information within the system could have been sampled at more time periods. Also, the sampling should have taken place nearer to the actual period, before the effects of time had erased recollection of the actual events. This would also have made it possible to better delineate the cliques formed through tracing of additional reciprocated communication links.

More could have been learned about the opinions of persons outside the limits of the innovation itself, but inside the larger

system of the University. This would have made possible a comparison of these opinions of events during the life cycle of the innovation with those from persons involved with this life cycle. Along the same line, more investigation concerning the effect of the introduced innovation on the other portions of the institutional system would be useful. A more thorough exploration on the compatibility of the introduced innovation with institutional norms and values would be enlightening.

The participant-observer method seems to be a useful one in carrying out such innovation research in organizations and institutions of higher learning. However, the participant-observer should be present during the whole life cycle of the innovation for best results. It would be preferable if the observer or observers were not themselves active in the role of change agent or innovation decision-maker in such a situation. A careful comparison of the results of such methodology with that of other methods should be useful in determining the value of this approach.

Finally, a follow-up exploration of the personal characteristics of the persons identified as true opinion leaders would have been worthwhile to determine how this opinion leadership was gained and whether or not similarities among the various individuals identified were present.

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APPENDIX A

APPENDIX A

METHOD OF COMPUTER MANIPULATION TO LOCATE "TOTALLY COMMUNICANT GROUPS"

(The following is a statement of the method of computer manipulation devised by Mrs. Betty Darlington of the M.S.U. Communication Department, and her husband, Mr. John Darlington, to locate "Totally Communicant Groups" from the data compiled from Part I of the questionnaire used in this study. W.G.M.)

Questionnaires are defined as the subject (person filling out the questionnaire) and his communicants (persons he talked to). This data is read by the computer and loaded into a square matrix of dimension n by n, where n is the number of questionnaires sent out. The matrix consists of subjects (rows) and their communicants (columns.). Ones, indicating communications, are loaded in cells corresponding to each subject's communicants. All unfilled cells are loaded with zeros. The program first prints this matrix as a raw data check and also prints the average number of communicants per subject and associated standard error.

The program then converts this matrix to a responding communicant matrix which is symmetrical around the diagonal. This is done by checking all elements containing one with their symmetrical elements. If both contain one, no action is taken. If either is zero, the other is zeroed. The resulting matrix contains subjects

and communicants who responded with each other. This matrix is printed out as the second output, defined as "responding communicants." The average number of responding communicants per subject is printed out with the associated standard error.

The responding communicant matrix is next searched by the computer for totally communicant groups. These are groups in which each member talks to each other member of the group, and is answered by every other member of the group. These groups are found by the following algorithm. All operations are done below the diagonal since the matrix is symmetrical. Rows (subjects) are searched for elements (cells) containing a one. When such an element is found, it becomes the starting element. The following rows are then searched for ones in columns corresponding to the row and column number in which the starting element was found.

When such a row is found, that row number is added to the first two numbers and the search continues for rows containing ones in columns corresponding to the now longer list of numbers. This process is continued, adding a new row (subject) number to the list each time the test is satisfied. Each time a row is found with ones in columns corresponding to the list above, those elements are set equal to two and are not used as starting elements when that row is searched for starting elements. After the last row is

searched, the list of numbers that results is one totally communicant group. This group is printed out and the next group is found by repeating the process with a new starting element. When the operation is complete the average number of members per group is printed out along with the standard error.

It is important to note a vital feature of the totally communicant groups. They allow a ranking of members in order of communication importance. For instance, if person 9 appears in most groups, he is the most important communications link between groups. The person appearing in the next largest number of groups is the next most important person, and so on.

APPENDIX B

APPENDIX B

SURVEY INSTRUMENTS

725 W. Magnetic St.
Marquette, Mich. 49855
September 8, 1969

In today's world, change is increasingly prevalent. In government, in industry, in human relations -- even in education -- changes occur with startling rapidity. And it seems that this increasing spiral of change is to be the continuing order of our world.

Thus, it appears most important that those of us in institutions of higher education become familiar with the process of innovation and change, so that change may some day be controlled. If we can learn to harness and govern change, it can be used to our advantage.

As a small part of this needed study, I am carrying out a case study on the inception and development of the Common Learning Program at Northern Michigan University. It is hoped that, by adding to our knowledge of the effect of communication factors in the organization on the process of change, this study will increase somewhat our ability to predict and thus control change.

Your help is needed so that a complete and accurate picture of the life cycle of the process of change in this case may be assembled. Please fill out the enclosed questionnaire and return it to me in the enclosed, self-addressed envelope. Since I realize that your time is quite valuable, I have checked the time required. You should be able to complete the questionnaire in 20 minutes or less.

Your invaluable assistance will be most appreciated.

Cordially,

William G. Mitchell

QUESTIONNAIRE, PART I

Information Flow - Who to Whom

To establish information flow patterns in the organization, it is necessary to determine who talked with whom about Common Learning. When established, such information flow patterns will help explain the development process in Common Learning.

Please check those persons in the following list with whom you communicated about Common Learning during either of two time periods -- before its formal beginning in the fall of 1966 and since the fall of 1966.

For example, perhaps you talked with Dean Griffith about Common Learning before 1966, but did not do so after 1966. You would then check the box opposite Dean Griffith's name, and under pre-1966, but would put no mark under post-1966:

	Pre 1966	Post 1966
6. Dean Thomas Griffith	X	

Some of the persons listed below were not at Northern during some of the time periods; for them, simply do not check their boxes for these time periods.

I communicated with the following about Common Learning:

	Pre-1966	Post-1966		Pre-1966	Post-1966
1. President Harden			15. Dr. James Rapport		
2. President Johnson			16. Prof. Georgevich		
3. President Jamrich			17. Dr. Phillip May		
4. Vice Pres. Vinocur			18. Dr. H. Heiminen		
5. Vice Pres. Rombouts			19. Prof. R. Gorski		
6. Dean Tho. Griffith			20. Vice Pres. Byrd		
7. Dean Vito Perrone			21. Vice Pres. Bjork		
8. Dr. Anthony Forbes			22. Vice Pres. Dickson		
9. Dr. Arthur Pennell			23. A. Dean Whitehouse		
10. Dr. Robert Wagner			24. Prof. Neil Carlson		
11. Dr. Jerrold Jacobs			25. Dr. Lewis Peters		
12. Dr. R. Sonderegger			26. Dr. Rico Zenti		
13. Dr. Donald Baker			27. Mr. Arnold Aho		
14. Dr. Helmut Krietz			28. Mr. J. Allswang		

Questionnaire I - Page 2

I communicated with the following about Common Learning:

	Pre-1966	Post-1966
29. Mr. Frank Bartol		
30. Dr. E. Barnard		
31. Mr. Fred Berry		
32. Mrs. W. Berul		
33. Mr. Richard Bird		
34. Mrs. C. Bothwell		
35. Miss Mary Carl		
36. Miss P. Chasnis		
37. Mr. Aaron Cohen		
38. Mr. Bernard Cook		
39. Mr. J. Cushman		
40. Mr. R. Dornquast		
41. Mr. L. Ellerbruck		
42. Mr. Ivan Fende		
43. Mr. Leslie Foster		
44. Mr. Jeremy Fox		
45. Dr. Gordon Gill		
46. Mrs. C. Grabowski		
47. Mrs. E. Aligwekwe		
48. Mr. Thos. Baldini		
49. Dr. S. Barnwell		
50. Dr. Chas. Baxter		
51. Mr. David Berkman		
52. Mr. Jerome Bird		
53. Mr. Larry Blovits		
54. Mr. Lloyd Busch		
55. Dr. James Case		
56. Miss Nareda Coar		
57. Mr. Gor. Coleman		
58. Mr. Wm. Cooper		
59. Dr. P. Doepke		
60. Dr. F. Earney		
61. Mr. Ron Farrell		
62. Mr. John Flynn		
63. Dr. Duane Fowler		
64. Dr. John Frey		
65. Miss E. Gould		
66. Miss Halley Greer		
67. Mr. E. Greifer		
68. Mr. D. Gustafson		

	Pre-1966	Post-1966
69. Mr. Wm. Gwynne		
70. Miss A. Harrison		
71. Mr. A. Hauptman		
72. Mr. Rus. Hirschy		
73. Mr. Everett Hogan		
74. Mr. Rich. Hohly		
75. Miss Lynn Holup		
76. Dr. Rich. Hudson		
77. Mr. Thos. Hyslop		
78. Dr. James Jones		
79. Miss Ann Joyce		
80. Mrs. Carol Kallery		
81. Miss Dawn Kangas		
82. Mr. John Kuhn		
83. Mr. Mich. Lynch		
84. Mr. N. MacIntosh		
85. Mr. Clif. Maler		
86. Dr. R. McClellan		
87. Mrs. M. McKelvy		
88. Mr. G. McLaughlin		
89. Mr. L. Menezes		
90. Miss Q. Minet		
91. Miss M. Mulzer		
92. Mr. Melvin Groth		
93. Mr. J. Gutowski		
94. Mr. W. D. Hagans		
95. Mr. Doug Harper		
96. Dr. Earl Hilton		
97. Mr. Ron. Hoffman		
98. Dr. Gottfried Hogh		
99. Mr. T. Holmstrom		
100. Dr. H. Houston		
101. Mr. John Hughes		
102. Mr. M. Jankowski		
103. Mrs. Julie Jones		
104. Mr. Hugh Kahler		
105. Mr. Louis Kallary		
106. Dr. Harlan Knautz		
107. Miss B. Lakanen		
108. Mr. R. Machowski		

Questionnaire I - Page 3

I communicated with the following about Common Learning:

	Pre-1966	Post-1966		Pre-1966	Post-1966
109. Mr. David Macleod			150. Miss P. Ralph		
110. Mr. John Martell			151. Mrs. Byron Renz		
111. Mr. E. McCracken			152. Miss Jan Robbert		
112. Mr. Rbt. McGinty			153. Dr. Jerome Roth		
113. Mr. E. Mendelin			154. Mr. Owen Shapiro		
114. Dr. Jas. Merry			155. Mr. Allen Shulak		
115. Mrs. T. Morris			156. Mr. Rich. Simon		
116. Miss J. Navarre			157. Mrs. H. Sittler		
117. Mr. F. Nuernberg			158. Mr. Joel Smith		
118. Dr. Bantai Pai			159. Mr. Don Snitgen		
119. Miss E. Palter			160. Mr. Alan Stracke		
120. Dr. G. Papich			161. Mr. S. Summerville		
121. Miss K. Pavlik			162. Mr. Sten Taube		
122. Mrs. R. Payant			163. Mr. Clark Thomas		
123. Mr. R. Perlberg			164. Mr. R. Twaddle		
124. Mr. Lothar Pietz			165. Mr. John Watanen		
125. Mr. W. Quinones			166. Dr. Rich. Weber		
126. Mrs. H. Rasmussen			167. Mr. Rbt. Wester		
127. Mrs. Joan Renz			168. Mr. R. Willman		
128. Mr. Jarl Roine			169. Mr. Fred Wooll		
129. Mr. K. Schellhase			170. Mr. J. VandeZande		
130. Mr. Gerald Shaver			171. Mr. Peter Zaret		
131. Mrs. A. Simandl			172. Mr. Dan Smith		
132. Mr. Donald Sink			173. Mrs. R. Cummins		
133. Mr. J. Sittler			174. Dr. Jean Hedlund		
134. Mr. John Smith			175. Dr. K. Parkhurst		
135. Mrs. Sonderegger			176. Miss V. Patri		
136. Mr. G. Summers			177. Mr. W. Strandberg		
137. Dr. H. Swaine			178. Mrs. M. Whitfield		
138. Mr. James Taylor			179. Mr. Barry Wood		
139. Mr. R. Thoren			180. Mr. Rich. Wright		
140. Mr. David Warner			181. Mr. Albert Yoder		
141. Mr. Ronald Watson			182. Miss M. Zeininger		
142. Mr. H. Osoinach			183. Mr. Kent Bishop		
143. Miss H. O'Sullivan			184. Mr. W. G. Mitchell		
144. Mrs. Mohini Pai			185. Mr. Bruce Turner		
145. Mr. L. Passint			186. Dr. Erik Shaar		
146. Dr. Philip Pavlik			187. Miss D. Parsons		
147. Mrs. S. Payne			188. Mr. J. W. Owen		
148. Dr. B. Peters			189. Dr. Hal Wright		
149. Mr. Wm. Place			190. Dr. R. Schwitzgoebel		

QUESTIONNAIRE, PART II

Role of Instructional Communications

The following questions concern your perception of the role and function of Instructional Communications (now Learning Resources) before and after the adoption of television as a teaching method in parts of the Common Learning Program at Northern Michigan University.

1. Before the decision to use TV was made, appropriate activities of Instructional Communications were (please check the activities listed below which you think were appropriate):

   a. ____ Providing technical information about TV recording and playback equipment.

   b. ____ Providing information on the probable cost of TV recording and playback of taped lessons.

   c. ____ Providing information concerning the best known production techniques.

   d. ____ Assisting in planning and developing a learning system. (including need statement, behavioral course objectives, carefully analyzed and selected teaching methods, evaluation of results, and dynamic feedback for course upgrading.)

2. Which of the above activities do you consider the most important that Instructional Communications could have engaged in? (Please circle your choice below.)

   a. b. c. d.

3. Do you think this choice was actually carried out by Instructional Communications? (Please check yes or no below.)

   Yes _____ No _____

4. What other activities should Instructional Communications have engaged in before the decision to use TV was made?

(Please continue on next page.)

Part II, Page 2.

5. After the decision to use TV was made, appropriate activities of Instructional Communications were (please check the activities listed below which you think were appropriate):

   a. ____ Handling the technical aspects of the TV lesson recording and playback.

   b. ____ Helping TV teachers make their best appearance by using the best known production techniques.

   c. ____ Helping keep instructional costs down through efficient production, recording, and playback of lessons.

   c. ____ Helping implement the learning system described in part d. of question 1., above.

6. Which of the above do you consider the most important activity Instructional Communications could have engaged in after TV was adopted? (Please circle your choice, below.)

   a. b. c. d.

7. Do you think that this activity was actually carried out by Instructional Communications? (Please check yes or no, below.)

   Yes _____ No _____

8. What other activities should Instructional Communications have engaged in after the decision was made to use TV?

725 W. Magnetic St.
Marquette, Mich. 49855
September 22, 1969

Dear

Several days ago, I sent you a questionnaire concerning the pattern of communication which existed during two phases of the "life cycle" of the Common Learning program here at Northern. The information from these questionnaires will be correlated with that from special depth interviews and from a study of various institutional records to help explain this type of educational development.

It is essential to this study that replies be obtained from as many persons as possible who took part in the discussions leading up to the adoption of Common Learning and leading to its later modification, so that a complete communication picture may be obtained. The more complete this picture, the better it can be related to theories on the spread of such innovations. This, in turn, will help explain how changes occur in higher education. If such changes can be explained, they can some day be controlled.

So far, I have not received a reply from you. I'm sure this is only an oversight on your part, so won't you please complete your questionnaire and return it to me right away? If you have misplaced your questionnaire, I would be glad to send you another.

Your cooperation will be much appreciated.

Yours truly,

William G. Mitchell

QUESTIONS FOR FOCUSED INTERVIEWS

1. Please think back to the period when Common Learning was first being discussed on campus -- Do you remember how the idea originated? That is, who first presented the idea?

2. As you recall it, how did you first learn about this idea? Who first told you about it?

3. At this period, as you recall it now, did you think the right people were well informed about Common Learning? Did you think these key people were well enough informed?

4. Try to recall your own original reaction to the idea of the Common Learning program -- how did you feel about it?

5. As you think back to the beginning of the Common Learning program, what part did you feel the faculty played in its development and adoption? The administration? The students?

6. Do you recall the process or method by which the decision to adopt Common Learning was reached? Was this decision process or method a good one, in your opinion?

7. What do you recall as the main reason why Common Learning was adopted at Northern? Why did it come to be used?

8. Thinking back to Northern as it was in the early 1960's, how receptive to change did you think the University was? Did you think of it as traditional or modern in orientation?

9. Thinking of Northern as it was in 1964-65, how would you have described the style of its leadership? Who did you feel made most of the decisions?

10. When you remember what it was like at Northern in 1964-65, what did you think of the communication style of its leadership? That is, what did you think of the way the top leadership kept the rest of the University informed?

11. As you recall this period, did you think the top administration listened very much to the rest of the University? That is, do you think they were interested in what the rest had to say?

Questions for Focused Interviews, Continued

12. Again thinking of Northern in 1964-65, did you think its leadership style was going to have any effect on Common Learning?

13. Now consider the leadership that developed in the Common Learning program after its adoption -- Do you feel the quality of this leadership had any effect on the program itself?

14. Thinking of the period after Common Learning was first being taught to students, what was your opinion of Common Learning at that time? Do you think most people at Northern shared your opinion?

15. Considering the 1966-67 period, what would you say were the major factors which brought about change in the Common Learning program?

16. When you remember that period, what would you say most of the faculty felt about the Common Learning program? Did the rest of the University feel the same way?

17. From what you recall about the period after Common Learning was put into operation, did you think the program's organizational structure had any effect on its success?

18. During this period, as you remember it, did you think that the methods used in teaching Common Learning were successful, in terms of the learning by students? Could they have learned better if other methods had been used?

19. Now that Common Learning has been in use for some time, what is your present opinion of the program?

20. In your opinion, has the quality of education here at Northern been changed as a result of the adoption and use of the Common Learning program? In what way?

21. As you see it, what have been the main consequences of the adoption of Common Learning at Northern?

22. Do you think the consequences you mentioned above were intended or unintended?

23. If you had known then what you know now, what changes would you have suggested for Common Learning before it was adopted? (A different organizational structure? Different teaching methods? Different courses or course content? Different administrative policies?)

APPENDIX C

APPENDIX C

THE FINAL REPORT ON A

PROGRAM OF COMMON LEARNING

1. Introduction

We are firmly committed to the principles of liberal education in our age of increasing specialization. We are strongly convinced that undergraduate college education has among its purposes the widening of the individual's horizon and the deepening of his knowledge and understanding so that his human potential may best be liberated to satisfy his own intellectual and social needs and those of his community. We have concluded that an undergraduate program of higher education is not fulfilling its entire mission unless it devotes considerable energy and resources to achieving this goal. This final report is an embodiment of the discussions and deliberations of the Subcommittee on a Common Learning over the past year. For previous history reference is made to the Progress Report of May, 1964, and the Penultimate Report of December, 1964.

2. Objectives of the Program

a. To awaken the student's intellectual curiosity through the creation of a climate of learning on the campus, both inside and outside the classroom, which will encourage the exploration of issues and the interplay of ideas and which will serve to stimulate lifelong intellectual endeavors.

b. To develop the student's concern for the social, moral, and spiritual implications of the major issues of the contemporary world.

c. To equip the student with the basic intellectual skills and to give him the necessary practice in their use so that he may react to the world in which he lives with appropriate analytical responses leading to logical syntheses and discriminating judgment.

d. To cause the student to explore and probe the essential facets of, and the relationships among, man's physical and natural environment, his economic, political, and social culture, and his literary and artistic heritage.

3. Significant Features of the Program

a. The program of common learning shall consist of twelve courses (assuming the adoption of the four-course plan).

b. There shall be one program for all students knowing that some exceptions in special situations are inevitable.

c. A program of cooperative teaching shall be employed. The central concerns and the central thematic features of the various sequences should be developed by representatives from the traditional academic disciplines and taught by them, so that in no case will the professor of literature lecture on archaeology, etc.

d. The common learning program shall be sequential in character so that course builds upon course, and knowledge and intellectual skill develop progressively as part of a coherent learning experience.

e. The goals of the common learning program will not ordinarily be served by developing the methodology and organization of the various disciplines along specialized and professionalized lines. There should be extracted from the various disciplines that knowledge and that methodology which is appropriate to the larger concerns and the larger themes proposed for the various sequences in the program. We should like to see developed courses which, though broadening, will avoid the approach of the non-selective, all-inclusive grand survey. We should like to see a few major themes carried through a number of sequential courses, with these themes explored in depth and in at least several disciplines.

f. It would follow, therefore, that the program in common learning should not be only a lower division enterprise, as it is in many institutions, but should be pursued by the student through all four years of his undergraduate education.

g. A very concerted effort shall be made to relate the program of common learning to concert series on campus, to lecture series, to fine film series, to book-reading programs, and to special colloquia and other similar efforts. Such "extracurricular" activities should be selected and scheduled in such a way that they will serve the program of common learning with some degree of direct relevance.

4. The Common Learning Program

The program, to be developed later as described in section 6a of this report, is characterized below. This characterization is intended to serve as a general framework for those who will develop and approve the courses.

a. Thought and Expression (two courses)

A two-semester freshman-level course emphasizing the development of both oral and written expression. Ideally, the content of the course will be related to both later courses in the program and to extracurricular cultural activities on campus. The course will be taught cooperatively by members of the English department and the speech department.

b. Three areas of human knowledge and understanding:

(1) Man's Perceptions of Nature: Mathematics and the Natural Sciences (three courses)

This three course sequence is designed to help the student better understand himself through a study of his physical and biological nature and the natural environment which is his setting. Included in this study of basic principles, unifying theories, and critical experiments will be an emphasis on critical thinking as it relates to such concepts in induction, law, prediction, explanation, and confirmation.

The second major aspect of this sequence is the study of mathematics as it helps the student to comprehend more fully the nature of formal thought and to understand the function of mathematics as a study of models for advancing man's understanding in the natural and social sciences.

An illustration of the above-described sequence follows:

Structure and abstraction
Matter and its organization
From matter to the complex organism and its ecology

(2) Man's Social Behavior: The Social Sciences (three courses)

This three-course sequence is designed to help the student better understand man's social situation as it is perceived

from psychological, sociological, anthropological, economic, political, and historical perspectives. Through increased social and cultural understanding of man, the student will be better equipped to deal effectively with the problems of our time.

An illustration of the above-described sequence follows:

The geographic stage
Individual behavior
Group behavior and institutions
Economic and political behavior and institutions
Reflections of these problems in historical context

(3) Man's Creative Imagination: the Humanities (three courses)

This three-course sequence is designed to develop and mature the student's powers of evaluation and judgment in the areas of ethics and aesthetics. The development will be nurtured through a study of man's cultural heritage in art, drama, music, and literature.

An illustration of the above-described sequence follows:

Ethics and aesthetics
The Fine Arts: music, art, theatre
World literary masterpieces

c. The Senior Seminar (one course)

A course required of all seniors after they have completed all other common learning requirements. Each class will be limited to twenty students. The student mix should include wide representation of majors and minors. The student might elect from a large number of seminar topics designed to pursue the special concerns of interested faculty.

5. Special Characteristics of the Program

a. In order to introduce some flexibility in the program students majoring in a discipline from one of the three areas of knowledge (humanities, social sciences, or natural sciences) may be exempted from the required three courses in that area of knowledge. These students may select other courses from a "common learning substitute courses" list. This list will be compiled by the committee in charge

of implementing the common learning program. The exempted student would elect courses on the list from outside of his major field and his choices would have to be approved by his major department.

b. Each of the three common learning sequences in the three areas of knowledge (humanities, natural sciences, and social sciences), should be permitted to serve as the nucleus for a group minor or a group major. Complementary courses might be designed for election by those students wishing group minors or majors in humanities, social science, or general science. The opportunity to "double count" three courses in the common learning will increase the flexibility of the program.

c. We anticipate that few entering students will have studied the content and developed the skills which will be demanded in these courses. However, examinations shall be available for students who wish to demonstrate their competencies. Students who pass such examinations should be given advanced standing in the common learning program and probably some advanced credit.

d. While we recommend that all specialized areas provide an opportunity for their students to profit from the full common learning program, we suggest that those areas having insurmountable needs be given an opportunity to petition Committee "A" for partial exemption from the program. We urge that Committee "A" exercise such authority with restraint.

e. Honors sections of these courses shall be designated and our ablest students selected for admission to them.

f. Faculty members who are experimentally inclined in their instruction can test various approaches and techniques in sections of specially selected students and to measure the results against other sections, which if properly selected, may serve for the purpose of control.

6. Administration of the Program

a. A committee shall be appointed to coordinate the development of the program, and to help implement it. This committee shall be a subcommittee of Committee "A".

b. The administration of the program shall be the responsibility of a coordinator. The coordinator shall be directly responsible to the academic vice president. The coordinator should be appointed as soon as possible.

c. Ordinarily only those members of the faculty who are dedicated to this aspect of higher education and who are interested in participating in it should teach the common learning courses.

d. These courses, being unique in character and in many cases having no textbooks readily available, will demand considerable time and effort for development. Therefore, released time shall be provided to selected faculty members for course development.

e. Faculty instructional loads within common learning shall be considered an appropriate and accurate fraction representing the faculty member's participation in a common learning course. These will vary normally from one down to no less than one-third.

f. If one lecture or a limited number of lectures is desired in a course in the common learning, such lectures shall be considered an overload for those invited to deliver them, and, as with off-campus teaching, a special compensating fee provided.

g. It is recommended that during the academic year of 1965-66 a pilot program of some of the common learning courses be initiated so that faculty members can have the opportunity to experiment and gain experience in the planning, development, and teaching of such courses.

The Subcommittee on a Common Learning

Milton Byrd (Humanities, Vice President for Academic Affairs), Chairman
Neil Carlson (Economics and Sociology)
David Dickson (Language and Literature)
Anthony Forbes (History)
Thomas Griffith (Chemistry)
Warren Strandberg (Psychology & Education)

PROPOSAL BASED ON RESULTS OF FACULTY SENATE QUESTIONNAIRE - AS AMENDED

Outline of courses: (total of 10)

Required

Group I: 4 — Humanities I and II (Thought and Expression), Humanities III and IV (History, Arts, Philosophy, Literature).

Group II: 2

a. Two courses integrating the natural sciences (Mathematics, Physical Sciences, Biological Sciences),

or

b. Mathematics, Physical Sciences, Biological Sciences (choice of two). (General education courses only.)

If the program as a whole is approved, the departments concerned shall determine the option or a or b.

Group III: 2

a. Two courses integrating Government, Sociology, Economics, and perhaps other areas.

or

b. One course in Government and one course in either Geography, Anthropology, Sociology, or Economics. (General education courses only.)

If the program as a whole is approved, the departments concerned shall determine the option of a or b.

Electives

2

a. Two courses in a Foreign Language for students not majoring or minoring in the field.

or

b. A course in Mathematics, Natural Science, Social Sciences or Psychology. (Not to be in the major or minor field.)

or

A Senior Seminar (interdisciplinary) dealing with major themes: Man and Technology, Peace, etc. (General education only.)

A student majoring or minoring in a department in Group II or Group III may be exempted from one of the common learning or general education courses in that group, but must substitute a course in a department outside his major or minor field. A student majoring and minoring in departments in Group II or Group III may be exempted from two of the common learning or general education courses in that group, but must substitute courses in a department or departments outside his major and minor fields. These substitutions shall require the approval of the student's advisor.

Those areas (majors or curriculums) having special needs may petition Committee A for partial exemption from the program.

VP:EL

26 May 1965

APPENDIX D

APPENDIX D

A PROPOSAL FOR TEACHING PARTS OF HIGH ENROLLMENT COURSES BY TV

by

Dr. Donald Baker, Prof. Neil Carlson,

and Mr. Wm. G. Mitchell

The Proposal

The rationale which follows describes a proposal to teach parts of high enrollment courses, such as those in common learning, by TV. It advocates dividing such courses into parts which will be taught by various media best adapted to teaching these specific portions of the courses. Such a systematic approach to teaching will take into consideration the goals of the course, the human and environmental factors involved, the available media and techniques, and the best and most up-to-date knowledge of human learning.

The specific proposal here is to teach the lecture portions of two Common Learning courses, the natural science course and the social science course, by means of television. Other portions of both courses would be taught by small group discussion, and in the physical sciences, by laboratory sessions. Teaching portions of the course by television would conserve faculty time and allow close personal contact in small group discussion and laboratory sections with the students in the other portions of the courses.

The Situation

Today extensive and irresistible forces are reshaping the contours of higher education in the United States. New discoveries, new techniques and new demands are coming with increasing rapidity. These forces of change are dictating re-examination of the old techniques and philosophies of higher education and a development of new and improved methods of instruction.

Two of these nationwide forces of change are the growth of enrollments caused by the baby boom of the years immediately following World

War II and by the increased desire to attain a college education; and the growth of technology and new knowledge about the teaching-learning process which is being brought about through research. These forces are being particularly felt at Northern Michigan University.

The first of these is so well known and so well documented that it hardly requires discussion. This increased demand for education is putting increased demands on both the classroom space and the available faculty of this university. Often resources are not adequate to care for the increased demands put upon them. Because of these demands, we must look for the most economical and efficient means of instructing young people that are available today; being careful, meanwhile, to maintain educational quality.

The second force is that of increasing knowledge and increasing competency in the theory and methods of human learning. While not nearly enough is known about how people learn, the tools of learning available today are the most powerful and the most effective that have ever been used in education. These tools are available, it is our duty and responsibility to put these tools to the best use for the benefit of our students.

Looking into the future of education at college level, it seems inevitable that continuing large enrollments will force the inclusion of increasingly large numbers of students in our courses in the future. This is especially true in courses such as the Common Learning courses which will be required of most, if not all, of the student body. Even in the tutorial system, whereby a very few students at a time are instructed by one wise instructor, were the ultimate form of instruction, practical present-day needs would rule out the use of this system.

Luckily, it is not necessary to make an all-or-nothing choice between large or small sections. A given course need not necessarily be taught by one medium alone and the sections involved need not necessarily be either all large or all small. Certain portions of any course lend themselves to large group situations while other portions of the course dictate the need for individual, personal contact. By sub-dividing the total course into its parts and teaching each part by the best method available for that portion of the course, it is possible to give each student the advantage of individual counseling and personal contact while efficiently teaching the total course. The total quality of the course may thus be raised, rather than lowered, even though some class sizes are much larger than that of the traditional class.

One final aspect of the situation should be mentioned. That is the nationwide problem of finding faculty well qualified and competent to teach in a given area. The growth of institutions of higher learning everywhere and the increased demand for instruction combine to make it increasingly hard to locate people with the qualifications we would like in our instructors. This situation is not likely to grow better in future years, but is likely to increase in complexity.

The Problem

Stated simply then, the problem to be faced is one of educating increasingly large numbers of students, and, just as importantly, providing them with the highest quality education possible -- based on the best and latest knowledge of the techniques and philosophies of human learning. Specifically, the present problem is to plan an instructional program by which a large number of students who will be taking Common Learning courses next fall can be given quality education within the realistic limitation of resources and faculty. It is toward this end that the present proposal is directed.

The Solution

The most suitable solution to this problem seems to be an approach which has been suggested in the material which has gone before. That is to present video-taped lectures to several hundred students simultaneously, and to repeat these lectures often enough to permit viewing by all students in the course. Extra showings of the lectures would be scheduled for review purposes. The remainder of the time in the course would be spent in small group sessions -- either in discussion or in laboratory sections. About two lectures per week would be devoted to television; the rest of the time to small group sessions. A system of questioning to emphasize and provoke thought and for reinforcement of the television teaching would be used in each television session.

Justification for the Solution

There are a number of reasons why the proposed solution seems educationally sound. These are:

1. By this means, the best lecturer in each area of each discipline may be presented to all the students taking the course; not to the small number that he would be able to reach unassisted by television.

2. Each lecturer would be presented at his best. This would be impossible if he were required to repeat his lecture in person to a number of sections each day.

3. Ample time would be allowed for the planning and development of each television lesson. Thus each would be better prepared and organized than if instructors were required to teach repetitive sections without the strong incentive and opportunity for careful organization.

4. Resource materials and other teaching aids could be employed in greater quantity and with ease than would be possible otherwise. A costly experiment, for example, could not be repeated economically for a dozen sections; but by doing it once on television, it could be presented to as many sections as necessary without additional cost. Also, dangerous or rare events could be presented, while they would not be possible otherwise. The costly, large-scale models, etc., which should be used in large lecture sections, may be replaced on TV by models of convenient size.

5. By using a number of lecturers in each course, each discussing his own specialty, the students would be given higher quality instruction than if each teacher were required to present the whole of the subject matter, whether or not each part were in his specialty.

6. The "personal" quality of television would alleviate the impersonality of the large lecture section. Good television teachers can maintain a "one-to-one ratio" with each student because of the two-dimensional effect of the TV tube which allows eye contact when the teacher looks directly into the camera lens with each viewer.

7. The efficiency of using television lectures to give a large portion of the information required in the course will allow the extensive use of small group discussion and laboratory sections within available resources. If this were not the case, all sections might have to be rather large, and the advantages of small group contacts would be largely lost.

8. Especially in science, the capacity of the camera to use a "roving viewpoint" will make for better quality instruction. That is, the individual student cannot move from his own seat or position at the lab bench in the usual class of medium size, and so cannot see many demonstrations adequately. However, the cameras can be used in close-ups, in long views, and from any necessary angle. This flexibility makes it possible for all to see better than even the students in the first rows could see without TV.

9. As noted in 7 above, the efficiency factor is important in the allocation of scarce faculty members to the teaching task. TV can free the instructor to do the job he really should be doing -- that of direct, personal teaching of individuals and small groups.

10. A final factor of efficiency is that once recorded, these TV lectures can be used, with possibly slight revisions, for a number of years. Thus the original cost of the TV production may be spread over a period of time before additional expense is required.

11. Once recorded, the television lectures may be repeated any number of times, and may be distributed as widely as required. They may be sent over our campus channels to any building on campus. Also, they may be used, if desired, as the basis for a program of advanced placement, by which top-ranked high school students would be able to view these lessons on our cable distribution system, meet other requirements with teachers of our selection at their individual high schools, and then qualify for credit on these courses when they come to Northern as freshmen. This is a particularly attractive prospect for the Common Learning courses which all must take. By transmitting appropriate video tapes over the peninsula-wide network, the University has a further opportunity to contribute to the cultural enrichment of the Upper Peninsula.

Critical Deadlines

If this plan is to be put into effect, certain deadlines must be observed. First, the equipment needed to record and play back the television portions of the course require some time for fabrication after they are ordered. Thus, we must order as much as four months in advance of need in order to have the equipment on hand when needed.

Second, some orientation and selection of faculty must take place before these courses can be prepared, and the preparation of the television portions of the courses must begin several months ahead of the time that the actual tapes will be used so as to assure a sufficient backlog to cover any emergencies. In faculty orientation, the advantages and limitations of television as a medium for instruction must be covered, a screening process must be carried out to identify those faculty members best able to instruct by this means, and a training process must be accomplished to assure the best teaching from those chosen to do the TV portions of the courses. Thus, the plan must be put into operation with dispatch in order to be ready for fall use.

Evaluation

Any such proposal as has been outlined above is of necessity somewhat experimental. Though as careful planning as possible will be done before the plan is put into operation, a systematic program of evaluation is necessary to assure optimum quality.

It is envisioned that such an evaluation will begin by the establishment, in concrete behavioral terms, of the goals which each course is designed to reach. Then, as each of the lessons is taped, it will be evaluated by means of a panel consisting of all those involved in the course -- both the TV teachers and those who will conduct discussion groups and laboratory sessions. Added to this panel will be technical people from the Instructional Communications Center and the Coordinator of Instructional Communications. Thus a continuing check on quality will be built into the productions.

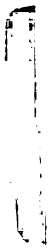
It is planned that evaluation of the complete courses will be carried out in terms of student achievement. By stating goals in terms of achievements, it will be possible to design test instruments which will accurately rate the achievement of students. Also, the students will be given the opportunity to evaluate the TV portions of the course by means of student rating forms.

It is planned that reinforcement and review questions, coded for machine scoring, will be used rather frequently during the period in which the courses will be presented. These will be in addition to normal testing procedure. This would serve somewhat the same

function as programmed instruction in that it would force recall of information soon after acquisition, and would thus reinforce understanding. Besides, it would serve as a continuing check on the effectiveness of the instruction.

A final review and evaluation by all faculty members at the end of the course would be required, to decide if modifications should be made in the method of instruction before the next semester, whether certain lessons on tape needed revision, and whether or not the evaluation procedure itself needed changing.

APPENDIX E



APPENDIX E

COMMON LEARNING EVALUATION:

A PRELIMINARY REPORT

An evaluation of the Social Science Common Learning curriculum was conducted at the end of the 1966-67 fall term at Northern Michigan University. The purpose of this evaluation was to assess the merits of different procedures employed by the instructors in the classroom, to weigh the students' opinions about their learning experiences, to rate the reading material, to appraise the effectiveness of the television panelist, and to gain an overall impression of the Common Learning program as viewed by the students. The Evaluation Questionnaire asked the students to reply to several items categorized in the five areas mentioned above. The term "evaluation" denotes the Common Learning students' subjective impression of the program. In short, these data reported in this paper are based on the students' perception of the Social Science Common Learning 131 course.

Following the administration of the Evaluation Questionnaire in class, we asked 144 students who filled in the questionnaire to rate the evaluation instrument. From their responses to items contained in the rating questionnaire, we determined which items on the evaluation instrument were "irrelevant" or were "obscure" or "ambiguous." We discovered that the items were understood by most of the 144 who took the rating questionnaire. Therefore, we can place some confidence in the findings reported in this paper.

DESCRIPTION OF SAMPLE

We administered the Evaluation Questionnaire to 1346 students enrolled in the Common Learning classes. 840 (62%) of the students were male and 502 (37%) were female. Four respondents, about 1%, did not indicate their sex.

890 (66%) of our sample were 18 years of age, 295 (22%) were 19 years, and 135 (9%) were twenty years and older. As one might expect, the median age was 18.76.

We found that 823 (61%) of the students came from communities which had a population of 25,000 or less. 258 (19%) of the students came from communities of 25,000 to one million population. 235 (17%) came from metropolitan areas of one million or more. 25 (2%) of the students did not answer.

The number of students who were in their first semester of college was 1195 (89%). Only 65 (5%) were in their second semester of school and 60 (4%) were in their third semester. 25 (2%) of the students did not answer.

Students majoring in the Humanities (History, Philosophy, Literature, Language, Library Science, Art, and Music) numbered 439 (33%). Those majoring in the Natural Sciences (Biology, Chemistry, Physics, Physical Education, and Mathematics) numbered 289 (22%). Students majoring in Business and Commerce were 282 (21%). Finally, 75 (5%) said they were studying one of the Social Sciences (Geography, Economics, Political Science, Sociology, Psychology, and Social Work). 260 (19%) did not indicate their major.

338 (25%) replied "yes" to the question, "Before this semester, did you plan to transfer from Northern Michigan University," and 981 (73%) answered "no." When they were asked, "Do you plan to transfer from Northern Michigan University to another university before next fall," 252 (19%) stated "yes" and 1079 (80%) answered "no." 27 (2%) failed to answer the first question while only 15 (about 1%) did not answer the second.

An amazing number of students - 707 (53%) - said they planned to go to graduate school. However, when they were asked to estimate their average grade, 953 (71%) said they had a "C" average while only 319 (24%) thought they had a "B" average or better. 56 (4%) indicated that they had a "D" average.

ITEM ANALYSIS

Most students thought that their discussion leaders used a "discussion-lecture" approach -- 59% indicated as much -- while 26% said a "discussion" approach was used. Only 14% stated that a "lecture" approach was employed. When the students were asked if they liked the approaches used in class, 68% said they did <u>not</u>.

62% of the students indicated that their classmates were reluctant to carry on a discussion. Since so few students saw their discussion-leader using a "lecture" approach, it cannot account for the students' failure or unwillingness to engage in a dialogue with the instructor.

To partially answer this question, we must look to other items responded to by the students in the Common Learning course. 90% of the students felt that: (1) their instructor did not encourage questions in class, (2) he was not personally interested in conducting a good class, (3) he would not permit students to state their points of view and he didn't welcome disagreement, and (4) he was not honest in admitting that he didn't know answers to questions raised by students. The possibility of 90% or more students distorting the intentions of the instructor in these areas concerning classroom procedure is relatively remote. Finally, 92% of the students said, "The discussion leader was usually 'unprepared' for his class hour."

The last item, along with the four previously mentioned items, were stated in a positive manner on the questionnaire. Because students replied to these items in a negative mode, we can feel confident that they were not simply agreeing with the item. Therefore, the high percentages for these five items is not a function of the questionnaire.

When students were asked if the discussion leaders "seemed knowledgeable in the four disciplines presented during the course," 80% responded "very little" and "slightly." When they were asked if the instructors "were proficient in one of the areas," an amazing 88% said "no." (58% indicated "very little" and 30% stated "slightly.")

Finally, 88% of the students felt that their discussion leader had a "negative attitude" toward the course at the beginning of the semester. Only 11% of the students said their instructor did not have a negative attitude. When they were asked what was their instructor's attitude at the end of the semester, 73% said their instructor had a negative attitude. However, 26% of the students felt that the instructor had a positive attitude at the close of the semester. This is a gain of 15% when compared with the 11% who said the instructor had a positive attitude at the beginning of the semester.

When we compared the students' perception of instructors' attitude toward the course with the students' responses to the two items, (1) "You, the student liked the Social Science curriculum at the beginning of the semester," and (2) "You, the student, liked the Social Science curriculum toward the end of the semester," we found that students didn't like the course at the end as much as at the beginning. 35% of the students indicated that they disliked the course at the beginning as compared with 44% who disliked the course at the end. Therefore, some students perceived their instructor's attitude toward the course

to improve slightly over the semester, while at the same time more students stated that they disliked the course more at the end than they did at the beginning of the semester.

Regardless of the students' attitude toward their discussion leaders, 65% said they felt satisfied with the Social Science Common Learning curriculum. (38% responded "very much so" and 27% replied "pretty much.")

When we looked at the students' responses concerning items on the reading material, we found that the students were about evenly divided in their evaluation. 66% said that the readings contributed to their better understanding of the television lessons. 67% thought that the readings were not adequately represented on the examinations. Except for these two items, students were evenly divided. We might note that 62% of the students thought the readings were "interesting."

The television panelist received the highest rating of all from students. 80% or more said that the panelists "always seemed well prepared for 'their' lessons," and that they "demonstrated a thorough knowledge of 'their' subject matter." 47% of the students thought the panelists were convincing and persuasive in presenting their topic, while 68% said that they presented their lessons at a level which the student was able to comprehend. Only 48% stated that they had a pleasant and relaxed way of presenting their lessons. We must note that 55% of the students thought that the panelists were able to "command" their attention" while on television.

Finally, 79% of the students found the study guides to be <u>of little</u> help in preparing for discussion classes, television viewing, and for examinations. About 50% used the study guides for pre-class preparation during the course. 67% of the students said they "frequently" or "occasionally" asked their discussion leader for help during the semester. 28% said "rarely" and 4% indicated "never."

CONCLUSION

In conclusion, students gave a fair evaluation of the Social Science Common Learning program. 63% said that their work in the course had been beneficial and rewarding in terms of their future goals in life. Except for their perception of their discussion leaders' abilities, they saw the reading materials, the television panelist, and the course as a whole as adequate.

It would seem that student/instructor relations in the Common Learning course need to be looked at closely. Most students perceived their instructors as having a negative attitude toward the course throughout the semester, as not taking an interest in giving a good course, as not encouraging questions in class, and as not permitting students to state their points of view.

Certainly, some attention should be given the reading material used in the course. On the other hand, this investigator feels that a better and more thorough evaluation might be made of the readings in the future.

The television panelist seemed to fare better than all other categories on the questionnaire. Again, a more complete method of evaluating the effectiveness of the panelist seems warranted in light of this investigator's minimum experience with television. It is a new medium and probably deserves the involvement of someone who is more familiar with its many ramifications.

Hopefully, this report of our findings at this date will serve as a guide in understanding how students perceived the Common Learning curriculum.

6-16-67

NORTHERN MICHIGAN UNIVERSITY
Common Learning 121

The faculty and staff of Mathematics-Natural Science (CL 121) sincerely want your opinion of the course so that we may give you a truly worthwhile educational experience. Part I of this questionnaire is to be done in your recitation section today. Use the IBM card furnished you. Do not sign your name. Use the following scale to rate each question.

(A) Well Above Average - Excellent
(B) Above Average - Good
(C) Average
(D) Adequate, but below average - Fair
(E) Inadequate, and/or Poor

In comparison with other courses you are presently taking, rank the effectiveness of this course in the following areas:

1. Television lessons
2. Laboratory periods
3. Recitation-discussion sections
4. Evening review sections for exams
5. Text books
6. Examinations

As a whole, would you say that:

7. Course material is grasped by the class, and that learning is achieved?
8. The course stimulates thought and action, and leads to further exploration of subjects?

Part II

This part is to be done more leisurely. We are very anxious to have your constructive criticisms of the course to aid us in future planning. Would you please return this sheet with your comments on the reverse side and other sheets if needed, to your recitation leader next week at this time. Do not sign your name.

MEMORANDUM January 23, 1967
To: All people concerned with CL 121, Math. and Natural Science
From: Evaluation Committee via R. Thoren

401 opinionaires were returned and carefully read. Only constructive opinions were counted. No count was kept of those who said "Drop the course." The following list of constructive criticism is arranged in order of frequency with the number of students mentioning the change in brackets.

1. Better correlation between lecture, discussion and lab (64)
2. Material should be less general or more detailed (58)
3. Better preparation of TV tapes; technical difficulties, misspoken words or statements, errors, boring, level of difficulty was third grade vs. level of difficulty too great for non-science background, etc. (50)
4. Discussion should follow tape immediately (50)
5. Discussion sections should be handled by an expert in the field being discussed (50)
6. Different textbooks, better textbooks, fewer, more basic (43)
7. Longer periods for discussion or more of them (42)
8. "Live" lecturer establishes contact which is not apparent with TV (42)
9. Test asked for detailed information. Lectures were broad (24)
10. Organize the discussion sections better (22)
11. Material should be divided into two courses, maybe natural science and physical science but not four (22)
12. More review sessions (15)
13. Better labs (13)
14. More quizzes in recitation (11)
15. Less quizzes in recitation, more discussion (11)
16. Have one person doing all the work of lecture, discussion & probably lab (11)
17. Separate students by background (10)
18. More movies on tape (9)
19. Insist on TV attendance (8)
20. Offer only to science majors (7)
21. Offer only to people with non-science background (7)
22. Have questions on tape to be handed in at discussion time (5)

Ten people said that there were no objectives clearly stated so that they knew what was expected of them.

Fifteen mentioned lack of stimulation.

Some thought the discussion saved the course - others got nothing from them.

A great many thought the idea of the course was fine and that eventually it would succeed but in the meanwhile they had been sacrificial guinea pigs.

Memo.
Page 2.

750 IBM evaluation cards were processed and the results follow. In general, the 150 card sample which was presented some while ago in one of our meetings agreed quite well with the larger sample. 750 represents 47% of the total enrollment.

A		B		C		D		E	
#	%	#	%	#	%	#	%	#	%
5	61	61	8	255	34	241	32	189	25
58	8	257	34	262	35	112	15	60	8
29	4	164	22	266	35	160	21	126	17
114	15	262	35	224	30	81	11	48	6
36	5	132	18	281	37	173	23	118	16
21	3	184	24	327	43	130	17	82	11
4	1	55	7	271	36	237	32	166	22
3		64	9	165	22	241	32	258	34
10	1	53	7	222	30	234	31	202	27