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A CONTEXTUAL MODEL OF CURRICULUM IMPLEMENTATION


Ruth L. Wright

Thesis presented to the School of
Graduate Studies of the University of Ottawa
in partial fulfillment of
the requirements for the degree of
Doctor of Philosophy

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Ruth Lyone Wright, Ottawa, Canada, 1982.

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Abstract of A Contextual Model of Curriculum Implementation

The phenomenon, curriculum implementation, although the subject of considerable attention by educators, is not understood from a theoretical perspective. A review of literature describing a change in organizations revealed a limited quantity of empirical investigations and conceptualizations related to curriculum implementation. The increased demand for effectiveness and efficiency of educational practice necessitates a carefully developed understanding of the curriculum implementation process. Therefore, the purpose of this study was to develop a contextual model of curriculum implementation which incorporates the existing empirical data into a theoretical framework.

In the study a theoretical model of curriculum implementation is developed from the empirical findings of 43 research studies related to curriculum implementation. The interpretative-theoretical methodology employed is rigorous and deliberative. It consists of four distinct and sequenced phases. The first phase, exploration, provides a framework and poses the research questions to be considered in the investigation. In addition, it establishes the criteria for the inclusion of studies as major data sources for the investigation and describes the studies. Phase two of the methodology, analysis, involves the systematic comparison of data sources. Research questions posited in the exploration phase provide the framework in which the analysis occurs. The analysis, in turn, furnishes the data base from which categories

are developed in the subsequent phase. Classification, the third phase, consists of the development of categories of data which organize and aid in clarification of thought relative to the phenomenon being studied. This phase includes analysis, abstracting and generalization in a manner subjected to pre-established criteria.

In the fourth phase of the study, explanation, the conceptualization of the theoretical relationships is finalized with the construction of a contextual model of curriculum implementation. The model provides answers to the four research questions posed in the first phase of the study. These are:

1. How does curriculum implementation occur in schools?
2. What are the elements of curriculum implementation in schools?
3. How is the implementation of curriculum in schools affected by being part of the total curriculum change process?
4. How is the implementation of curriculum in schools affected by factors external to the system responsible for the implementation?

The study concludes that curriculum implementation is a process comprised of three sequential stages: adoption, early use and full use/renewal. Not all implementation efforts, however, effectively progress through the three stages. Those efforts that terminate during or immediately after adoption result in non-implementation.

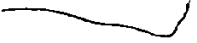
Early use of the curriculum which reverts to previous practice is co-optation, and only those efforts which result in full use/renewal of the curriculum complete the implementation process. The terminal point of the implementation process is marked by the achievement of the goal for implementation established during the adoption stage: fidelity to the intents of the developer, mutual adaptation, or either fidelity or mutual adaption.

Six categories of elements of curriculum implementation emerge from the study. These are: the curriculum, the people, the organization, exogenous intervening variables, endogenous intervening variables, and implementation strategies. These elements are interactive during the implementation process. As a management process, the development of implementation strategies by an implementation system staff based on the interactions of the other curriculum implementation elements is viewed as essential to complete the implementation of the curriculum.

The study demonstrates that curriculum implementation is influenced by the nature of the curriculum development/design process that precedes it. This influence is both in terms of the nature of the product (curriculum) resulting from the process and in terms of the potential for involvement of users during the development/design process. The necessary strategies for curriculum implementation are influenced by both factors. The nature of the curriculum development/design

process and of the curriculum implementation process determines the kind of curriculum evaluation necessary. The degree of complexity of the development/design and implementation phases of the curriculum change process, determines the complexity of evaluation.

External factors are shown by the study to influence the curriculum implementation process in two ways. Direct influence is frequently generated from outside the curriculum implementation system to foster or inhibit curriculum change. Indirect influence is applied to the people in the implementation system which facilitates or hinders the implementation process. The direct and indirect influence of external factors necessitates the continuous evaluation and/or revision of implementation strategies through the entire process. In some situations endogenous intervening variables and exogenous intervening variables result in non-implementation or co-optation.



Introduction

A major thrust in many school districts in recent years has been the production of new curriculum documents. An enormous expenditure of human and physical resources has produced excellent curricula. The professional expertise, experience and technical skills of educators have led to the design and development of outstanding materials. It appears that many of these documents, when introduced in the schools, have not been put to effective use in the classroom. Instead of being implemented they have been placed on school shelves either in the administrative offices or in the classroom. The literature suggests that part of the reason for non-implementation can be attributed to the unchallenged assumption that the decision to use a curriculum will automatically inspire its effective implementation. Recent investigations suggest that adoption of a curriculum does not necessarily result in implementation. If curriculum change is to occur, educators must pay careful attention to the implementation stage.

The study of curriculum implementation as a process is relatively new. It is apparent, however, that it is what happens during the implementation effort that determines whether or not a curriculum change will occur in schools (R.Common, 1979; Fullan, 1978; McLaughlin and Berman, 1975). It seems reasonable to conclude that if the curriculum implementation process is a crucial component of the curriculum change effort, a thorough understanding of the process will enhance practice.

Increasing numbers of studies are addressing curriculum implementation. Kritek (1976) isolated the trend of these as being primarily concerned with the identification of factors which directly influence the implementation process. This trend continued in 1981 (e.g. Dow and Whitehead, 1981). While the findings of these studies are providing considerable information about the curriculum implementation process, few studies have provided the means for the practitioner and/or researcher to achieve a comprehensive picture (Fullan and Pomfret, 1976; Leithwood, 1976; and Fullan and Park, 1981 represent notable exceptions). Even fewer studies utilize a precise theoretical methodology in drawing their conclusions. None of the studies presents a view of curriculum implementation which incorporates all the factors known to influence the process. In order to understand the nature of curriculum implementation it is necessary as well to investigate the concept of change in the larger context of educational organizations. Therefore the purpose of this study is to develop a theoretically comprehensive model of the curriculum implementation process because of the rigor of the methodology involved. Through the examination of studies which meet established criteria, and the subjection of these findings to an interpretative-theoretical methodology a model is developed. The model describes curriculum implementation as it occurs in schools, and as such aids in the understanding of the process.

The study is reported in six chapters. A theoretical rationale is presented in Chapter One. The second chapter describes the four-

phased methodology utilized in model building. The first phase of the methodology, exploration, is presented in Chapter Three. Two phases, analysis and classification, constitute Chapter Four. The final phase, explanation, is presented in the fifth chapter in the form of a conceptual model. The final chapter of the study reviews the study and suggests implications of the resultant model for increasing the understanding of curriculum implementation as a process, for educational research and for educational practice.

Chapter One

Theoretical Rationale

In the following statement of rationale, literature related to organizational change theory and to curriculum implementation is reviewed in order to establish the relationship between the two processes. Educational change literature is explored, both to determine its reflectiveness of the principles of organizational change and to establish the relationship between educational change and curriculum implementation. Curriculum implementation is examined in order to identify the need for further consideration of the nature of the implementation process and to facilitate the identification of the relationships within the process in need of reexamination or specification. The problem for the study is identified and key terms are defined.

Organizational Change

The phenomenon of change has been the focus of extensive investigation in almost every field of the physical and behavioural sciences. Interest in organizational change and development has generated numerous approaches, each of which suggests strategies to facilitate the change process. In what follows, the approaches to change are characterized according to the view of man apparent in them. The view of man expressed by the theorist determines, to a large extent, the strategies appropriate for utilization in the change

process. Stages of change are examined to determine the appropriate sequencing and the relationship among parts.

Change, which is viewed as a basic characteristic of organizations (Griffith, 1964), is an innovative effort. Although there are numerous definitions of innovation, the essence of their meaning is found in the simplistic statement that an innovation is anything which is new or which is perceived as new by the receiving organism or its environment.

Within the organizational context, change is categorized in a variety of ways. Guba (1968) describes change as evolutionary, homeostatic or neomobilistic. Evolutionary change is that which occurs without conscious direction or intent. Homeostatic or reactive change is mainly automatic and instinctive rather than thoughtfully guided. Neomobilistic or planned change is the result of conscious direction. Neomobilistic change is precipitated by the assumption that simple reaction is not enough and that a specific mechanism is required to guarantee the direction and completion of the desired change.

Havelock and Huberman (1978) describe organizational change as either "homeostatic" or "planned". Homeostatic change is that which occurs naturally and creates no disorder in the organization. Planned change has a predetermined focus and is designed to alter organizational behaviour. The discussion which follows centers on planned organizational change.

Approaches to Change

Planned change is a systematic and multidimensional process (Dalin, 1978). Several approaches to planned change are evident in the literature. Chin and Benne (1969) suggest a typology of existing models which they updated in 1976. This typology is based on a historical review of change literature and represents divisions based on the view of man exhibited in the models. Their categories are in terms of the following approaches: rational-empirical, normative-reeducative, and power-coercive. Each approach is described briefly.

Rational-empirical Approaches. These assume that men are rational beings who follow their rational self-interest. Therefore, if they can be convinced that the proposed change will create a better state, they will make the effort to change.

Rogers (1962) represents one of the first major reviews of change literature. The majority of the 1200 empirical studies and 300 non-empirical studies cited in this review and in the updated survey by Rogers and Shoemaker (1971) belong in this category. A further updated bibliography by Rogers and Thomas (1975) of more than 2700 entries illustrates the growth of research related to the diffusion of innovations.

Research and development models such as those proposed by Guba (1967), Clark and Guba (1972), and Lippitt (1973) are rational-empirical approaches. More recent research and development models suggested by Havelock (1970, 1972, 1978), Stiles and Robertson

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(1973), Guba and Clark (1974), McDonald and Walker (1976), and Paul (1977) have been identified by the authors as belonging within this category.

Normative-reducative Approaches. A basic assumption in these models is the belief that man is an inherently active searcher for solutions to his problems. He is in constant quest of need satisfaction through continuous transactions with his environment. The focus in models in this category is special interaction as an initiating mechanism for change. The approach includes models developed by therapists, trainers, and situation changers.

Lewin's (1974) original three-step model and the Schein (1973) adaptation of it are typical of this category. The Lippitt, Watson, and Wesley (1972) modification is more descriptive but it exhibits the same view of man. Chin and Benne (1976) include models proposed by Argyris (1970), McGregor (1960), and Likert (1961) in this category. Most problem-solving approaches to change are consistent with this view (Havelock, 1978; Paul 1977).

Power-coercive Approaches. Man in these models is viewed as a powerless manipulable being. Although all planned change depends on some type of power, the power stressed in this approach is political, economical or moral in nature. It plays upon the sentiments of guilt and shame. Few models exist in organizational change literature advocating such a plan for change, but descriptions of methodologies in praxis often incorporate this view. Kimborough (1971) and Park (1980) describe change models which are

representative of such an approach.

Models of Change

The typology suggested by Chin and Benne (1969) stimulated the construction of a number of alternative categorizations including those by Maguire (1970) and Havelock (1970, 1972, 1978). The Havelock categories are based largely on the nature of the tactics for change suggested by the models being categorized (Zaltman and Duncan, 1979). The four types of models he identified are problem-solving models; social-interaction models; research, development and diffusion models; and linkage models. Although Havelock's categories were originally drawn from non-education studies, his recent work has focused almost exclusively on the educational context. Each model type is discussed briefly.

Problem-solving models. These models arose from group problem-solving and interactive techniques such as T-grouping. They assume that innovation is a natural process that goes on constantly. A further assumption underlying many of these models is that learning from one problem-solving situation is transferable to similar situations. People learn to change (Viney, 1978). Models suggested by Berman and McLaughlin (1976) and by Leithwood (1974) are characteristic of this category.

Social-interaction Models. Communication channels and the nature of the messages diffused are focal concerns in these models. Interpersonal influence, legitimacy, knowledge of the innovation, peer support, and persuasion are important variables in the process.

Considerable emphasis is placed on the dichotomy between adoption and rejection in these models. There seems to be no consideration in the models that part of the innovation may be accepted by the organizational members. Models characteristic of this category include those proposed by Rogers (1962) and Eichholz (1963).

Research, Development and Diffusion Models. There are major similarities between this group and the social-interaction models. There is heavy reliance on communication, interpersonal contacts, peer support, and persuasion. The most fundamental difference in the models is that the innovation is assumed to be of excellent quality because of the high initial development costs. The innovation in some ways, then, is assumed to "sell itself". The planning phase of these models typically involves a massive target, a projected period of time, and extensive division of labor. A passive, rational and cooperative consumer for the innovation is considered a "given".

Models which may be included in this category include those of Emrick and Agawala-Rogers (1978) and Bolam (1975). Plans for infiltration of the market place with new products frequently use research, development and diffusion models.

Linkage Models. These models are somewhat eclectic. They assume that potential users of the innovation have different socio-cultural norms from the system which develops the innovation. The developer is perceived to be cooperating with the potential user. Five basic strategies are typically employed within the models: problem solving and helping; need sensing; client-centered solution building;

solution-processing channels; and micro-system building. The agent is typically from outside the organization and lacks authority for power-coercive techniques.

Paul (1977) states that "emphasis of the linkage model is in the establishment of communication networks between sources of innovations and users via an intermediary facilitating role either in the form of a linkage agent or as a linking agency" (p. 26). Models typical of this category are described by Bhola (1965), Paul (1977) and Havelock (1978).

Integration of Change Models and Approaches

In describing the relationship between the Chin and Benne (1976) approaches and the categories of Havelock (1970, 1973), Paul (1977) suggests that each of the views of man described by Chin and Benne (1976) is subsumed in the categories suggested by Havelock (1970). Figure 1 demonstrates this relationship.

From the figure it is apparent, in change theory, that problem-solving models depend more on the normative-reeducative approach, and less on the rational-empirical approach.

Whichever approach is utilized in planning the change process, factors within the organization appear to influence the effectiveness of the procedure. These factors may be considered elements of the change process which occur in a phase. Authors vary in their identification of the number and names of the phases but all recognize change as a multiphased and sequenced phenomenon. Rogers (1962) describes change as having five phases: innovation, awareness and interest,

		<u>Chin and Benne (1976) Categories</u>		
		<u>Rational-empirical</u>	<u>Normative reeducative</u>	<u>Power-coercive</u>
<u>Havelock (1970) categories</u>	Problem Solving	Moderate	High	Low
	Social interaction action	High	Moderate	Moderate
	Research, Development and diffusion	High	Low	High
	Linkage	Moderate	High	Low

Note: High, moderate and low refer to the degree to which the categories reflect each other.

Figure 1: A comparison of the Chin and Benne (1976) categories of approaches to change and the Havelock (1970) categories of models of change. Adapted from Paul (1978, p.33).

evaluation, trial run, and adoption. Hanson (1979) describes three phases: initiation, implementation, and incorporation. Berman and McLaughlin (1976) identify three phases: innovation, implementation, and installation. In Berman and McLaughlin's (1976) description of the Rand Change studies, another stage emerges which precedes innovation, specifically, instigation. Filley, House and Kerr (1976) describe a number of patterns and phases of change.

In summary, from the discussion above it is apparent that organizational change is a complex phenomenon addressed from a variety of approaches. Each approach is found in varying degrees, in all categories of change models.

Targets of Change

From an analysis of the phases of change and the factors which influence it, Leavitt (1975) concludes that regardless of the approach employed, change in organization involves the interaction of four basic elements: task, structure, actors and technology. Task refers to the organization's principal reason for existence and the subtasks which are needed in order to accomplish the organization's principal task. Actors refer to those people within the system, but also to influentials outside the system. Technology refers to the work programmes within the organization and may refer to the method of incorporating the technology. Structure refers to the organizational system of communication, authority and work flow. Because of the interactive nature of the model, a change in one element results in disequilibrium necessitating change in other elements. (Figure 2). Change may be

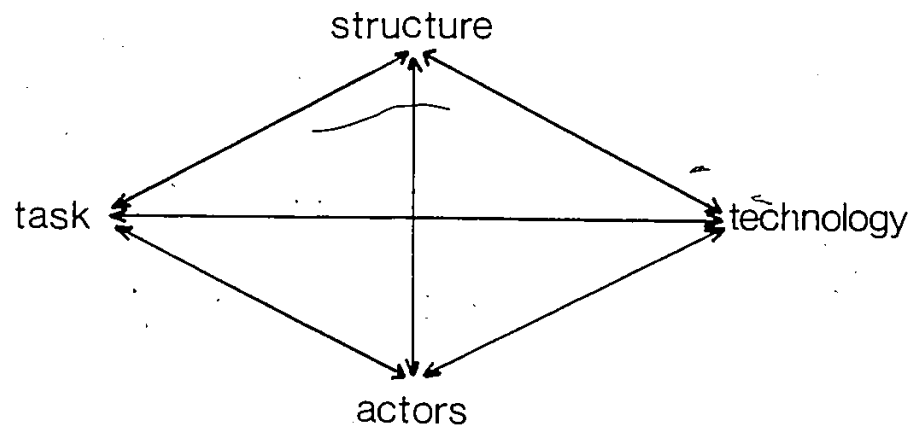


Figure 2: Elements of organizations affected by change
(after Leavitt, 1975).

introduced to the system through any of the elements. The model implies that in planning for change it is imperative to consider the effects of the change on all of the elements.

Scott (1978) in describing the status of organizational theory states:

...we are on the threshold of another major paradigm shift in the type of theoretical models that guide our investigation of structure of organizations. Such a shift has occurred twice before in this century...

(p.21)

The shifts to which he refers are those from viewing the organization as a closed system, to viewing the organization as an open system, and now viewing the organization as affected by and responding to factors external to the organization itself. In essence, the closed system is seen as responsive to factors within the set of clearly defined boundaries which enclose the organization. The open system is seen as responsive to factors within the system and to influences from outside the organization. It is considered to have permeable boundaries. The third view presents the organization as both being affected by the environment in which it is found and in influencing the environment. Permeability of the organizational boundary is greater than in previous conceptualizations. "The environment of organizations, conceived in terms of economic, political, cultural, social, technological, and interorganizational elements, now figure importantly in the explanation

of organizational structure and behaviour".(p.21) This concept is not entirely new. Kunkel (1967) describes a number of behavioural aspects of an ecological approach to social organizations. Baldrige and Burnham (1975) investigate the probability of individuals adopting innovations in light of their environmental impact.

Meyer (1978) utilizes considerable research in arguing for an environmental view of organizations. Hannan and Freeman (1978) utilize the biological principles of population ecology to formulate potential relationships within the organization and between the organization and its environment. Hodge, Anthony, and Gioia (1979) incorporate this approach to organizations in an introductory administration textbook. Drucker (1980) describes the organization as being constantly in interaction with its environment.

The organization as needing to be responsive to the environment is viewed as being basic to the development of management theory in profit-oriented organizations. (Hodge and Anthony, 1979) A review of management journals reveals numerous techniques which are utilized to evaluate the needs and expectations external to the formal organizations.

In summary, models for planned organizational change contain a view of man which influences the attempted means of actualizing change. Change is considered to occur in sequenced phases, of which implementation is one. Change in organizations results in the interaction of four organizational elements; namely, structure, task, technology and actors. Further, organizations are now considered to

be interactive with the environment within which they are found.

Hodge and Anthony (1979) describe organizations as having goals, work, power and authority, delegation, differentiation, integration, structure, design, boundaries and environments, and adaptation and change (p.18). An examination of schools leads to the conclusion that they exhibit all of these characteristics. Schools are viewed as organizations (Hanson, 1979) and it seems reasonable to assume that much which is said about change in organizations can be generalized to educational settings. A large body of change literature exists which is specific to educational institutions. This literature is discussed in the pages which follow.

Educational Change

Approaches to Change

Sieber (1972, 1975, 1976) identifies four images of the practitioner in the literature related to educational change from which he develops a typology. The typology describes the locus of control, the channels of influence, the typical change agent, and the relative efficiency of the image with respect to efforts, coverage, and yield of the approach. The four images are that of the Rational Man, the Cooperator, the Powerless Functionary and the Eclectic. Each is described briefly.

The Rational Man. Decisions are based on the best available information. Man is viewed as a complex information processing system who will be influenced mainly by one-way communication and will change

as the result of internal, intellectual processes. This view clearly parallels that evident in Chin and Benne's (1976) Rational-empirical approaches.

The Cooperator. The practitioner is viewed as "an untapped reservoir of motivation to cooperate" (p.368). The desire to cooperate is perceived as latent. Two-way communication is the major channel of influence utilizing consultants, field agents, and human relations experts. This view obviously is analogous to the Normative-reeducative approach identified by Chin and Benne.

The Powerless Functionary. Man is perceived as a malleable entity to be molded at the will of those in positions of authority. The locus of change is external-structural and prescriptions and sanctions are the principal methods of change. This approach to change is consistent with the Chin and Benne Power-coercive category.

The Eclectic. Sieber (1975) criticizes the preponderance of emphasis on the three approaches outlined above and suggests an eclectic approach as being more effective and more reflective of actual behaviour. He refers to this approach as a "Combined Strategy" and suggests that it includes elements found in each of the other three strategies; specifically, the cognitive aspect of human behavior from the Rational Man, the evaluative aspect of the Cooperative Man, and the prescriptive aspect of the Powerless Functionary. This eclectic approach is reminiscent of the linkage view purported by Havelock (1970). It is also similar to the view taken by Paul (1976, 1977) in its inclusion of prescriptive tactics reflective of varying views of man.

This approach appears to house many of the assumptions basic to contingency management strategies suggested by Reddin (1970), and Fiedler (1967, 1974).

Emmrick and Agarwala-Rogers (1978) examine diffusion models for education and conclude that there are three distinct phases of educational change. Specifically these are initiation, implementation, and assimilation. Rogers (1962), Rogers and Shoemaker (1971) and Rogers and Thomas (1975) delineate similar phases. It should be noted that these are the stages recognized in organizational change. Additional discussion of the implementation stage occurs later in this rationale.

Extensive reviews of educational change literature utilizing the framework suggested in Chin and Benne (1976) include those by Huberman (1973), Bolam (1975), Hoyle (1975), and Paulson (1976). Each of these incorporates change literature reviewed by Bhola (1965) and Havelock (1970).

Paul (1977) utilizes the Havelock (1970) categories of change models in analyzing 100 empirical studies completed between 1970 and 1976. From his review he develops a listing of generalizations about change related to factors internal to the organization, factors external to the organization, and factors associated with the nature of the innovation.

Targets of Change

In describing factors within the educational organization which are subject to change, Dalin (1978) names objectives and functions,

organization and administration, roles and relationships, and the curriculum (p. 20-21). These four categories are consistent with those identified by Leavitt (1975) as existing within organizations in general which are subject to change. Dalin (1978) also describes the interactive nature of these elements and suggests that a change in any one results in a change in the others. (Figure 3).

In summary, it has been demonstrated that the literature related to organizational change in general and that related to educational change in particular, share their views of man, identify specific phases of the change process and identify elements of the organization which are interactive during the change process. A shift is identified in organizational literature toward the viewing of schools as organizations responsive to change from within, and to factors in the environment.

External Influences

In educational organizations the source of innovation is shifting. "While the 1960's was an era of innovation from within, the 1980's will be the era of innovation from without" (Fege, 1980, p.17). The permeability of educational systems has increased. A more educated public is making increasingly specific demands of educators. The educational system is being forced to become more responsive to public criticism, student unrest, Federal Government programmes, and single issue special concern groups. Boyd (1977) concludes that "one can hardly avoid the view that today's administrator is engulfed in a pressure-packed set of constraints". (p.539).

Zaltman and Duncan (1977) state that the environment of an

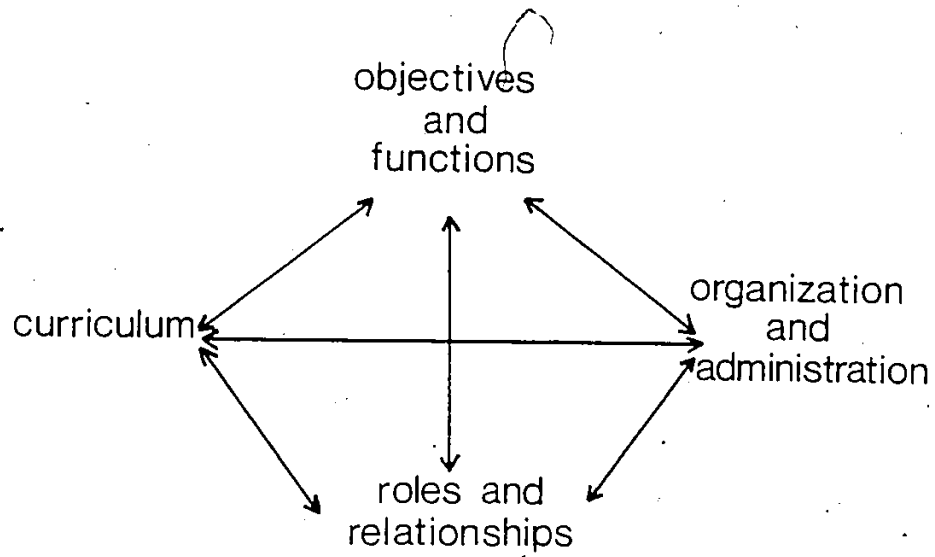


Figure: 3: Interactive elements in educational organizations affected by change (after Dalin, 1978).

organization can have an impact on the change-innovation process in at least two ways. These are in the initiation of change and in reaction to attempted change. They further suggest that the more components there are in the environment, the more likely the organization will undergo change (p. 257).

As early as 1969, Herriott and Hodkins report attempts to determine the effects of a variety of social factors on educational change. Scribner (1970) delineates contextual variables related to social factors on educational change. Scribner (1970) also delineates contextual variables related to social control, stratification, political structure, economic indicators and the sociological context which result in interaction between the school and its environment. Belasco (1973) identifies a direct relationship between the success of an innovative programme, as measured by student achievement levels, and the school system's and the innovative project's perceived capacity to satisfy parental group expectations concerning decisional participation levels.

House (1976) indicates that factors in the life of the teacher outside the school organization influence his/her willingness to adopt innovations. Firestone (1975-1976) describes schools as "simultaneously service organizations where children who cannot evaluate what they need are cared for by professional educators, and a commonweal organization governed by popularly elected school boards" (p.1). This requires the organization to be responsive to external pressures in both suggesting and enacting educational change.

Articles by Apker (1978) and Park (1980) underline the responsiveness of public schooling to community pressures and educational governance.

Zaltman, Florio and Sikorski (1977) describe a "turnkey" model of educational change in which linkage with the environment is a major focus in the change process. Paul (1977), in his generalization from empirical investigations of educational change, underscores the importance of innovative efforts linking with factors external to the school organization.

Dalin (1978) provides a succinct statement on educational change. He identifies four factors which must be considered if the dynamics of educational change are to be understood. Specifically, these are the educational setting (financing, decision making, size and the like), the environment (economy, political stability, social expectations, labor market, relations to other sectors, unions, technological changes, among others), the specific innovation (technology involved, changes caused in the normal organizational behaviour, social change, task change), and the specific change strategy employed. This further supports the contention that educational change must be considered in light of the environment in which it occurs.

Inbar (1980) describes the ecology of education as "the web of spatial-functional patterns which arise and change through reciprocal modifications, and which affect this educational process, or the whole framework in which the educational process takes place." (p. 381).

In summary, educational institutions, like other organizations,

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are influenced by factors external to them. Planned change in the educational setting is influenced by factors external to the schools. Implementation is one part of the planned change process and, as such, is influenced by factors external to the educational institution. Dalin (1978) states that "the process of implementation ... is the process characterized by dialogue between the institution and its environment..."(p.96). It appears inappropriate, then, to plan for the implementation of educational change without consideration of the interaction between the identified endogenous organizational variables and those outside the organization itself.

Phases of Change

D. Common (1980) states that "implementation is extrically [sic] bound as only one component of the change process..."(p.2). The literature related to change contains numerous categorizations of the states or phases of the change process. Some of these are cited earlier in the discussion while others, such as that of Giacquinta (1973), focus attention on the implementation of change as a single step in a multi-stepped process. Although some of the categorizations do not mention the word "implementation", the concept of putting the innovation to work is found in all of them. The term "implementation" is representative of the enactment phase. With the exception of the study by Gross, Giacquinta and Bernstein (1971), limited attention had been paid to the implementation stage of change in the educational context. This conclusion appears to exist in most social sciences as evidenced by the Pressman and Wildavsky (1973, 1979) statement that although a number

of people talk about the literature related to implementation "except for a few pieces, ..., we have been unable to find any significant analytical work dealing with implementation" (1973, p. 166)

The apparent failure of so many educational innovations combined with the belief that the innovations themselves house potentially meaningful educational reforms directs attention toward the significance of their implementation. As Gross, Giacquinta and Bernstein (1971) suggest, if innovations are to achieve their potential "they must be implemented" (p.7). It is evident that implementation, while part of a planning and adoption process, is more than that - "it is a phenomenon in its own right" (Fullan and Pomfret, 1977, p. 336).

Brantley (1975) states that "it is obvious that a thorough, grounded knowledge base of the implementation process is in its infancy" (p.36). The statement represents as well the 1981 context. It would appear that there continues to be a lack of serious effort to develop a theory of implementation.

The nature of an innovation is known to influence the effectiveness of its implementation. (Fullan and Pomfret 1977; Hall and Loucks, 1975, 1976, 1977, 1978; Loucks, 1977; D. Common 1978, 1981; Dow and Whitehead, 1980, 1981).

Since curriculum innovations are a specific category of educational innovations, the issue of curriculum implementation as a "missing link" in the curriculum change process must be addressed (Beauchamp, 1978). To be effective, implementation must be viewed as a management process - a definitely planned process. (Leithwood, 1976, 1977, 1978,

1979, 1980, 1981; Loucks, 1977; Berman and McLaughlin, 1976; Dow and Whitehead, 1980, 1981). Berman and McLaughlin (1976) identify implementation as a process, not an event. This sentiment is supported by Dow and Whitehead (1981).

Curriculum modification and/or replacement have been a common type of educational change since the early 1960's (Schiro, 1978). Many descriptions exist of the funding and development of these innovations. Only recently, however, is educational literature focusing on attempts to implement the curriculum innovations. The simplistic view of man as an exclusively rational being may have led to the assumption that the innovative phase of the change process would automatically lead to the completion of the change, or that constructing and disseminating a curriculum is enough to guarantee its functioning in the school. This is not the case, however, as experience attests.

In summary, change is a phenomenon which permeates the literature in all areas of social science. Studies of change have identified three major approaches based on assumptions about man. Specifically, man is viewed as being rational-empirical, normative-reeducative or power-coercive. Each of these views is present to some extent in most change models. The literature suggests that four targets are addressed by change efforts in organizations: the task of the organization, the structure, the technology, and the roles people play. When examining the literature relative to change in educational organizations, similar approaches and models emerge as do similar targets of change.

One of the targets of change in educational institutions is the curriculum. Curriculum change as a phenomenon is being addressed increasingly in research. Like other types of change, curriculum change is multiphased. One phase of that change is referred to as curriculum implementation which is the focus of this study.

Purpose of the study

If curriculum innovations are to be effected and their potential realized, the nature of the curriculum implementation process must be understood. A number of recent studies focus on the degree of implementation of particular curricula (Hall and Loucks, 1977, 1978; Loucks, 1977; Leithwood, 1976; R. Common, 1979; Dow and Whitehead 1980; among others), but limited attention has been given to the identification of the elements of the curriculum implementation process and to the relationship among these elements.

The Rand Corporation Studies focus attention on the problem of implementation. Their extensive investigation of the effectiveness of federally funded innovations in American schools led Berman and McLaughlin (1976) to the conclusion that innovations meet one of three ends - they are not implemented, they are co-opted, or they are utilized in a mutually adapted form. Their studies provide useful information in identifying some of the constraining factors related to implementation, but provide little insight into the nature of the process itself.

Fullan and Pomfret (1977) present the first substantive review of

studies which focus on the implementation of educational innovations. Much of what they say deals with the implementation of curricula. Although they do not formulate a theory of curriculum implementation, their work is seen as an initial step in that direction. (D. Common, 1978; R. Common, 1980). Few other attempts to develop a theory of curriculum implementation emerge from an extensive review of educational literature. Smith and Keith (1971), utilizing a participant-observation technique and analysis of records of a single innovative elementary school, present a rudimentary attempt at model building. The resultant model exhibits little insight into the general nature of implementation elements or into the possible relationships among these elements.

The most rigorous theoretical treatment of curriculum implementation available is that developed by D. Common (1978) utilizing an interpretative-theoretical methodology. Implementation, in this model, is treated as a process in isolation from the overall curriculum change effort. The model provides a sound basis for the examination of the nature and function of the identified elements of implementation, but makes no attempt to examine the relationships which exist among these elements, the relationships which exist between the elements and the overall change process, or the influence of factors exogenous to the school setting on the elements. It is this broader view of implementation that is addressed in this study.

Mouly (1978), in describing the process of theorizing, suggests that a theorist "must bypass certain problems until he has gathered

enough facts to solve them." (p. 37). He adds, "no theory is ever complete, no theory incorporates all that is involved in a given phenomenon." (p. 37). Early theories are extended and modified by more sophisticated theories which incorporate more information and clarify relationships. "A conceptual scheme is either modified or replaced by a better one, never abandoned with nothing left to take its place." (Conant, 1951, p. 123).

Although the existing models of curriculum implementation do not account for the influence of other phases of the change process or for the effects of exogenous factors, these factors do appear to influence effective curriculum change. Literature exists which can be employed by a theorist to extend and modify existing theory. The purpose of this study is to develop a theoretical contextual model of curriculum implementation which incorporates the view of the curriculum change of which it is one part, and in the context of the environmental or exogenous contingencies of the educational system. The model will extend existing theoretical knowledge of the curriculum implementation process, but will itself be limited by the specific problems bypassed by the theorist. It will represent a sophistication in the understanding of curriculum implementation as a process. Increased understanding leads to increased predictability (Dubin, 1978; Caws, 1974). It will proffer truth (Wartofsky, 1979) in an effort to understand and to explain a process, the understanding of which seems crucial in curriculum implementation.

Models which may justifiably be described as theoretical must be

developed through a vigorous and correct methodology. Few systematic descriptions of such methodologies exist. The methodology utilized in this study is based primarily on what is called an interpretative - theoretical mode of investigation by de Groot (1969) and as theoretical model building by Dubin (1978). It is described in detail in the following chapter.

CHAPTER TWO

Methodology

Introduction

The systematic study of curriculum implementation is a relatively recent phenomenon. Various modes of investigation have been employed yet Dill and Friedman (1979) conclude that few of the studies make reference to data based on the utilization of carefully developed theoretical orientations. This situation is due largely to the lack of theoretical models in the area of implementation (Wildavsky and Pressman, 1979). The purpose of this study therefore is to develop a theoretical contextual model of curriculum implementation. The methodology employed in the development of the model is described in this chapter.

Theoretical Model Building

In the development of theoretical models, a theoretical methodology must be employed. Dubin (1978) describes the sequence of events in the development of theoretical models as follows: the isolation of units "whose interactions constitute the subject matter of attention" (p. 7); the formulation of laws of interaction among the units of the model: the establishment of boundaries within which the theory is expected to hold; and the description of the "system states" in each of which the units interact differently with each other (pp. 7-8). Kaplan (1964) describes theory building as providing two types of knowledge.

One type of knowledge results from "extension", or the expansion of the boundaries of existing theory to include factors not considered previously. The other type of knowledge is "intension" making the partial understanding of one region of knowledge more lucid by increasing the adequacy of existing explanations. The interpretative-theoretical methodology described here results in both extension and intension. Halpin (1969) describes such a process as "creative" (p.5). Only through adherence to such a creative process can the theorist "derive conclusions that represent logical and true deductions about the model in operation" (Dubin, 1978, p. 7).

The Dubin description of theoretical model building, while succinct, offers little direction to the investigator. de Groot (1969) describes a more prescriptive methodology referred to as "interpretative-theoretical research". The first phase of the de Groot process is one of exploration or description of data sources which includes the establishment of a research orientation and the delineation of parameters for the investigation. This phase corresponds to the isolation of units identified by Dubin (1978) as the first step in theory model building. The second phase of research identified by de Groot (1969), interpretation, involves the description of existing conditions and relationships. This phase of research must utilize specified and defensible methods of identifying the phenomena encountered. The third phase, classification, involves the conceptualization of the phenomenon being studied in an understandable format. de Groot (1969) suggests that the amount of freedom the researcher has in this phase of research is

contingent on the amount of existing theorizing relative to the phenomenon being studied. The newer the problem addressed the more freedom the theorist has to create categories. Dubin (1978) describes the formulation of laws and the establishment of boundaries as the second and third stages of theoretical model building. These processes, although not utilizing the same terminology as de Groot (1969), involve similar procedures. Boundaries are essentially being established in the first three phases of both approaches. After the third phase the situation in which the emerging theory is applicable can be readily identified.

The final stage of theory building is referred to as explanation by de Groot (1969) and as the description of "system state" by Dubin (1978). This involves the explanation and theoretical explanation of the relationships apparent from the data, which may include a model of the findings. The outcome of both methodologies is a theoretical conceptualization of the phenomenon being studied.

The interpretative-theoretical methodology described by de Groot (1969) incorporates all the stages of the Dubin (1978) process and is the methodology employed in this investigation. The purpose and activities in each phase of the methodology for this investigation are discussed.

Phase ONE: Exploration

Research Questions

This phase provides a framework, poses the basic questions to be considered, and delineates the data base for study. In this investigation, a comprehensive theoretical explanation for curriculum implementation is sought.

A theoretical explanation of the curriculum implementation process requires a thorough examination of what is known about the mode of the implementation process, the analysis of the curriculum implementation process to facilitate the identification of its elements or constituent parts, and the nature of the influence of factors external to the curriculum implementation process. Since the literature relative to implementation in schools is the focus of this investigation, the mode of the process and the elements of the process are identified utilizing two research questions:

1. How does curriculum implementation occur in schools?
2. What are the elements of curriculum implementation in schools?

The theoretical rationale presented in Chapter 1 of this study suggests that two categories of factors may influence the curriculum implementation process: those resulting from curriculum implementation being one phase of the curriculum change process, and those emerging from factors external to the school curriculum implementation process. From these categories, two further research questions emerge:

3. How is the implementation of curriculum in schools affected

by being part of the total curriculum change process?

4. How is the implementation of curriculum in schools affected by factors external to the system responsible for the implementation?

Answers to these four questions provide the data necessary for the development of a theoretical contextual model utilizing the interpretative-theoretical methodology.

The four questions provide a guide for the review of literature. To address the first two questions literature related to curriculum implementation is reviewed. Question three requires the examination of literature related to the curriculum change process, and the fourth question necessitates the inclusion of literature relative to factors affecting the education system which also affect or have the potential to affect the process of curriculum implementation.

To provide consistency, the review of available literature related to each of these areas encompasses the same time span. With the exception of a study by Krey in 1968, the literature related to curriculum implementation appears to be confined to the 1970's and the 1980's. The literature reviewed in this study is limited to that available from 1970-1981.

Data Sources

The literature reviewed is classified as either a major data source or a minor data source. Answers to the research questions are derived from major data sources while minor data sources are utilized only in clarifying answers to the research questions, or in suggesting

tentative relationships.

Criteria for major data sources are:

1. Studies published between 1970 and 1981.
2. Descriptive surveys, statistical reports, experimental research, or reports of quasi-experimental research.
3. Studies addressing curriculum implementation as a process, not as an event.
4. Reports which deal with the implementation of specified curricula or programmes.

Sample

In this study, major data sources constitute the sample upon which the investigation is based. A description of the selection of the sample is critical in the assessment of the extent to which the theoretical model becomes generalizable.

Major data sources have been identified through computer searches utilizing the major descriptors "change" and "implementation" in combination with the minor descriptors "curriculum", "course", and "programme" as well as the major descriptor "curriculum" in combination with "school community relationships", "development", "design", "change" and "policy formation". These searches were done by the University of Ottawa Computer Search Service and by the National Library of Canada Computer Search Service. Data bases included in the computer search are:

1. Exceptional Child Education Abstracts
2. Research in Education

3. Current Index to Journals in Education
4. Canadiana
5. Dissertation Abstracts International
6. American Doctoral Dissertation
7. Comprehensive Dissertation Index
8. Sociological Abstracts
9. Social Science Citation Index
10. Psychological Abstracts
11. National Clearinghouse for Mental Health Information

Manual searches for major data sources include:

1. University of Alberta Theses
2. Canadian Theses
3. British Educational Index
4. Canadian Education Index
5. Ontario Abstracts
6. Listings of publications from educational institutions
7. Textbooks related to curriculum and change

Minor data sources include articles in which the curriculum change process, the curriculum implementation process and factors affecting these processes are discussed from a nonresearch perspective. They are utilized to clarify, to question or to suggest tentative relationships in the model throughout its development and explanation.

Phase TWO: Analysis

This phase is primarily descriptive. de Groot (1969) includes the

systematic comparison of data sources as the principal activity. He emphasizes the need for an explicitly stated systematic basis for the process.

In this investigation, analysis includes the systematic comparison of major data sources focused on the identification of relationships that may exist, processes that are employed, and practices that are suggested. The end result of this phase is an integrative view of the major data sources which provides answers to the four research questions. The juxtapositioning and integration provide the means of extending and intending information from single sources (Halpin 1968).

Phase THREE: Classification

This phase involves the development of categories of data. The purpose of categorization is both to organize and to clarify thought about the particular phenomenon being studied. Category schemes should "incorporate what appears, from description to be the major distinctions in or about the phenomenon." (Posner and Strike, 1976, p. 667).

Three procedures have been identified as occurring in the development of conceptual categories. These are analyzing, abstracting, and generalizing (Alexander, 1972). Adequacy of criteria must be considered in category formulation. Several factors emerge from the literature as significant in assessing the adequacy of categories which are employed in this study; namely:

1. Sufficiency of empirical evidence (Halpin, 1958; Alexander,

- 1972, Posner and Strike, 1976).
2. Generative powers (Halpin, 1958).
 3. Significance (de Groot, 1969).
 4. Power to convey meaning (Rickman, 1967).
 5. Originality (de Groot, 1969, Power and Strike, 1976).
 6. Logical consistency (Halpin, 1958).
 7. Mutual exclusiveness (Halpin, 1958).

In this investigation the classification phase promotes a means of organizing the diverse descriptive data from phases one and two into a more meaningful format. The categories are developed in order to address the four research questions:

1. How does curriculum implementation occur in schools?
2. What are the elements of curriculum implementation in schools?
3. How is the implementation of curriculum in schools affected by its being part of the total curriculum change process?
4. How is the implementation of curriculum in schools affected by factors external to the system responsible for the implementation?

The categories provide the pieces from which the theoretical model and explanation in Phase Four emerge.

Phase FOUR: Explanation

This phase consists of interpretation, evaluation of interpretation, and theoretical evaluation of the closed set of findings

(de Groot, 1969). Adequacy of explanation is housed both in the sufficiency of the categorical scheme, and in the process utilized to give meaning. In this study the conceptualization of theoretical relationships will be finalized with the construction of a theoretical model.

There are a number of categorical systems for models. Black (1962) identifies scale (representational) models, analogue models, mathematical models, and theoretical models. Caws (1974) identifies operational models, representational models, and explanatory models. Belth (1970) describes analogue, scale, and theoretical models.

Models, in themselves, are not theory. They represent a stage in thinking that often has to take place before theory can be stated or extended. (Travers, 1969, p. 20). It could be said that a theoretical model is a primitive theory.

Theory...when formulated into a model, becomes an instrument for explaining...theory makes possible an organization of data that is not already organized. This is its great distinctive characteristic. When we are concerned with theory, we are concerned with raw data which have no specific order or meaning. And precisely because of this, the data have infinite potential that can be actualized in a model of possibilities, the theoretical model. (Belth, 1970, p. 90)

The model developed in this study is best described as a theoretical model or an explanatory model which both extends and intends current knowledge of the curriculum implementation process. The extension in the model is found in the inclusion of factors not previously considered in curriculum implementation model building, such as the influence of the larger curriculum change process on its constituent part — implementation, and the influence of factors normally considered external to the process of implementation. Intension in the model is found in the reexamination of major questions and in the broader range of data sources utilized.

Summary

This chapter describes the methodology of interpretative-theoretical studies. It delineates the four phases inherent in this investigative mode: exploration, analysis, categorization and explanation. Procedures utilized in each phase are described.

The chapter also identifies characteristics of major and minor data sources utilized in the study, describes the sampling techniques employed in this selection, and delineates criteria for the assessment of the adequacy of categories adopted in model building.

In the chapter which follows the exploration phase of the investigation is presented, primarily for the identification and description of the major data sources of this investigation. Critical analysis of information culled from these studies is presented in the discussion of phase two of the research which will form the basis of Chapter Four.

CHAPTER THREE

Exploration

In the previous chapter, the methodology employed in this study was described as being interpretive-theoretical. The four phases required for theoretical model building were identified as: exploration, description, categorization and explanation. In this chapter, the first phase is presented. In essence, the chapter identifies the major data sources and describes the answers provided by these sources to each of the four research questions developed for this phase. These questions are:

1. How does curriculum implementation occur in schools?
2. What are the elements of curriculum implementation in schools?
3. How is the implementation of curriculum in schools affected by being part of the total curriculum change process?
4. How is the implementation of curriculum in schools affected by factors external to the system responsible for the implementation?

Identification of Major Data Sources

In the preceding chapter criteria for the identification of major data sources were established. These criteria are:

1. Studies published between 1970 and 1981.
2. Descriptive surveys, statistical reports, experimental

research, or reports of quasi-experimental research.

3. Studies addressing curriculum implementation as a process, not as an event.
4. Reports which deal with the implementation of specified curricula or programmes.

Figure 4 presents the major sources for this study. The author(s), date of publication, title, curriculum innovation addressed and method of data collection are identified for each study. These studies are described in relation to the research questions identified. In this phase of the interpretive-theoretical methodology, the intent is to present a view of the phenomenon being investigated and to provide an extensive data base from which categorical schema can be abstracted. Analysis of the data is not the objective in this phase of the study but is addressed in phase two of the process.

Mode of Curriculum Implementation

Various organizing frameworks are possible in describing curriculum implementation studies. The most frequently utilized in recent studies is that developed by Fullan and Pomfret (1977). They describe the approach to curriculum implementation as being either "fidelity" oriented or oriented to "mutual adaptation". The fidelity approach implies that at the end of the implementation process, the curriculum will be utilized exactly as intended by the developers. The mutual adaptation approach assumes that the curriculum will be altered in some manner during the implementation process. This framework is

Author	Date	Title	Innovation of Data	Method of data collection
Center for Educational Field Studies	1970	A project for the analysis, development, implementation and diffusion of the new Social Studies Curricula	Social Studies	Observation scales
Ashley, J. and Butts, D.	1970	A study of the impact of an in-service education program on teachers behaviour	Science	Observation of teacher behaviour
Cole, H.	1971	Implementation of a process curriculum by the Campus team strategy	Man and Course Study	Teacher questionnaire
Growth, F.	1972	Factors affecting the rate of adoption of the 1971 Alberta Social Studies Curriculum for Elementary School	Science	Direct Observation, teacher questionnaire, student observation
Russell, H., Leithwood, K. and Baxter, R.	1973	The Peterborough Project: A case study of educational change and innovation	Mathematics, Social Studies, Conceptual Studies	Pre/post tests of student performance, teacher, student and parent attitudes
Solomon, W. et al.	nd	The development, use and importance of instruments that validity and reliability assess the degree to which experimental programs are implemented	Pre-school curricula	Classroom observation scale
Hall, D., Wallace, R. Dossett, W.	1973	A developmental conceptualization of the adoption process within educational institutions	Various	Instrument development
Leinhardt, G.	1973	Observation as a tool for the evaluation of implementation	Reading and mathematics	Direct observation
Leinhardt, G.	1974	Evaluation of the implementation of a program of adoptive education at the second grade (1972-73)	Reading and mathematics	Questionnaire for teacher observation
Elliott, J. and Adelman, C.	1974	Innovation in teaching and action-research. An interim report on the Ford Teaching Project.	Inquiry Social Studies	Teacher/researcher evaluation instrument
Regan, E. and Leithwood, K.	1974	Effecting curriculum changes	Conceptual skills	Teacher/Parent/Students opinion and Student performance
Evans, W. and	1974	Degree of implementation: a	I.P.L. mathematics	Classroom observation scale

Elliott, J. and Adelman, C.	1974	Innovation in teaching and action-research. An interim report on the Ford Teaching Project.	Inquiry Social Studies	Teacher/researcher evaluation instrument
Regan, E. and Leithwood, K.	1974	Effecting curriculum changes	Conceptual skills	Teacher/Parent/Students opinion and student performance
Evans, W. and Scheffler, J.	1974	Degree of implementation: a first approximation	I.P.I. mathematics	Classroom observation scale
Hess, R. and Buckholdt, D.	1974	Degree of implementation as a critical variable in program evaluation	Language and Thinking	Classroom observation
Shipman, M.	1974	Inside a curriculum project	Integrated studies	Contractual success curriculum innovation scales
Berman, P. and Pauley, E.	1975	Federal programs supporting educational change, Vol. II: factors affecting change agent projects	Variety	Case studies and individually constructed questionnaires
Brantley, P.	1975	Implementing classroom innovations: a case study of the relationship between teacher receptivity, degree of implementation and selected innovation variables	Minimal Mathematics	Interviews and observation scales
Dalin, P.	1975	Strategies for innovation in education	Variety	Observation
Downey, L. et.al.	1975	The Social Studies in Alberta, 1975	Social Studies	Questionnaires developed from content analysis of key documents, and field observation
Fullan, M.	1975	Implementation: its nature and determinants	Various	Review of literature- descriptive
Hampson, D.	1975	Curriculum change at the local level: a case study	Social Studies	Questionnaires and Interviews (cont)

Figure 4: Major data sources

Author	Date	Title	Innovation of Data	Method of data collection
McLaughlin, M. and Berman, P.	1975	Critical process in implementation	ESEA Title I	Descriptive case study
Winklevoss, C.	1975	An analysis of implementation as related to an educational innovation	Reading and communications programme	Observation rating scales
Berman, P. and McLaughlin, M.	1976	Implementation of educational innovations	ESEA Title I	Descriptive case study Observation rating scales
Leithwood, K.	1976	A decision-oriented strategy for managing the implementation of curriculum innovations	Various	Literature review
McLaughlin, M.	1976	Implementation as mutual adaptation	ESEA Title I	Case Study
Roose, C.	1976	The process of implementing a curriculum innovation	Dealing with causes of behaviour EEP	Observation/analysis
Warren, C.	1976	The non-implementation of EEP: "All that money for business as usual"		Case study, descriptive instruments
Wirt, J.	1976	Implementing diagnosis/prescriptive reading innovations	Reading	Case study
Hall, G. and Loucks, S.	1976	A developmental model for determining whether or not the treatment really is implemented	Various	Instrument construction
Fullan, M. and Pomfret, A.	1977	Research in curriculum and instruction implementation	Various	Literature analysis
Nicodemus, R.	1977	Why science teachers adopt new curriculum projects	Science	Descriptive questionnaire
Common, D.	1978	A theoretical model for curriculum implementation	Various	Model building
Harlacher, E. and Gollattscheck, J.	1978	Implementing community-based education	Community-based Education	Case study
Common, R.	1979	An investigation of the relationship between school management patterns and the degree of implementation of an innovative curriculum	Science	Stages of Concern, Levels of Use, Profile of a School

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Common, R.	1979	An investigation of the relationship between school management patterns and the degree of implementation of an innovative curriculum	Science	Stages of Concern, Levels of Use, Profile of a School
Ellis, J.	1979	The construct validation of the degree of implementation of an innovation	Intermediate Science Curriculum Study (ISCS)	Levels of Use and several self-constructed achievement and attitude questionnaires for student teachers
Bucko, R.	1980	Factors affecting the implementation of individually provided education in New Jersey Public Schools	I.G.E.	Case study/interventions
Dow, I., and Whitehead, R.	1980	Curriculum Implementation study: Personal Well Being	Physical Education	Barriers to implementation questionnaire, principal leadership profile
Grossnickle, D.	1980	The development of a model for guiding planned organizational change: a case study of school centred reform	School curriculum goals	Case study/descriptive
Hughes, A., and Keith, J.	1980	Teachers perceptions of an innovation and degree of Implementation	Science	C.O.R.F., Perception of innovation questionnaire
Senarath, P.	1980	An assessment of the implementation of planned curricular change in elementary schools in Bangkok, Thailand	Integrated studies	Curriculum implementation questionnaire for teachers, curriculum implementation questionnaire for principals
Dow, I. and Whitehead, R.	1981	Curriculum	Varied	Barriers to implementation questionnaire
Banathy, B.	1981	A generic model for the institutionalization of curriculum change: a discussion paper	Varied	Literature review
Fullan, M. and Park, P.	1981	Curriculum implementation: a resource booklet	Varied	Literature review

Figure 4.: Major data sources (cont.)

found in studies by D. Common (1978), R. Common (1979), Dow and Whitehead (1980, 1981) among others.

Alternate frameworks which could be employed include categorizing studies by the country in which they were generated, the type of curriculum innovation being studied, or the specific method of data collection employed. Each of these methods of organizing descriptions of studies includes biases which may affect the objectivity of later phases of the research methodology of this study.

No organizing framework is value free. There is however, need for systematic presentation of data in interpretative-theoretical studies (de Groot, 1969). Chronological presentation appears to be the least value-laden organizing framework available. Therefore, the chronological approach is utilized in this chapter.

1970 Data Sources

The Center for Educational Field Studies (1970) at Washington University was responsible for the development and diffusion of social studies curricula through field stations. In formulating plans for the implementation of the curricula a rational procedure was sought which would facilitate the use of the curricula as intended by the developers.

Deliberate training sessions were developed for teachers who were potential users of the curricula. Two distinct training phases were addressed:

1. Phase one was supervised by field station personnel. It consisted of teachers examining the new curriculum in light

of their own assumptions of the nature and purpose of social studies; the assumptions inherent in the curriculum; and the probable outcomes of the use of the curriculum.

2. Phase two involved the production of instructional units by teachers for use in classrooms. Curriculum materials were altered to meet local needs where necessary. In-service training was provided by the field station personnel for teachers in the use of novel instructional techniques when necessary.

The investigators suggest that provision of the two-phased training programme guaranteed rationality by requiring systematic examination and focused planning by teachers for instruction. Not all teachers were trained by field station personnel. Those who were, were expected to train other teachers in the use of the new curriculum. Release time was provided for the teachers to be involved in the field station training programme, but not, in most cases, for their training of other teachers.

The Center's study emphasizes two aspects of the curriculum implementation process. The first is the recognition of the need for rationality. The second is the importance of teachers in the process not only as receivers of curriculum, but as active questioning translators of curriculum into instruction. A tertiary consideration is the involvement of teachers in transmission of curriculum intents through peer relationships.

Ashley and Butts (1970) measured the degree of implementation of

a K-6 science curriculum utilizing a teacher behaviour observation instrument. In addition, they tried to determine whether inservice training actually affects teacher behaviour. The measurement of degree of implementation utilized was a researcher developed instrument called the Classroom Observation Form (COF). The COF consists of four categories of observation which affect the specific science curriculum. These categories relate to teacher/student interaction and student behaviour; teacher responses and action; specific teacher traits; and physical environmental aspects of the classroom.

An assumption underlying the study is that a specific group of behaviours, traits and environmental factors is evidence of curriculum implementation. It is hypothesized that by identifying the areas in which the teacher is not reflecting the behaviour, traits or environmental arrangements implied by the curriculum, remediation can be prescribed to help the teacher with the implementation.

Twenty-nine teachers were observed utilizing the COF. Specific in-service training programmes were developed to overcome behaviours not consistent with those expected in the full implementation of the curriculum. A shift in behaviour in the desired direction was reported for all 29 teachers.

From the Ashley and Butts (1970) study, three factors emerge relative to the nature of the curriculum implementation process. Firstly, curriculum implementation is a rational process. Secondly, implementation involves changes in teacher behaviour, student

behaviour, classroom environment, and teacher traits. The third factor is that in-service training of teachers does affect the degree of implementation of a curriculum.

Figure 5 presents a point-form summary of the information identified from the 1970 major sources relative to the research questions. Similar summaries are presented throughout the chapter to facilitate analysis in chapter four.

1971 Data Sources

In 1971, Cole described an attempt to implement Man: A Course of Study (MACOS) in elementary schools. To measure the degree of implementation, teachers were asked to respond to statements designed to test their knowledge of the assumptions, principles and instructional competencies underpinning MACOS. Because MACOS is a process oriented curriculum, student/teacher relationships were also questioned. Responses to the resultant questionnaire indicate that teachers were knowledgeable about MACOS.

Through a combination of instruments and interviews with administrators, teachers and pupils, Cole (1971) concludes that MACOS was being successfully implemented in the opinion of each group. It becomes obvious from the methodology utilized in assessing the implementation that Cole (1971) assumes that implementation is influenced by teachers, students, administrators, and by the nature of the curriculum itself. It is also evident that self reports are considered to be sufficient indicators of the degree of implementation.

<u>Questions</u>	<u>Ashley and Butts (1970)</u>	<u>Centre for Educational Field Studies (1970)</u>
1. Mode of Implementation	- Identified by specifiable behaviour traits. results from intervention and remediation strategies - rational process. - change in teacher behaviour, classroom environment, teacher traits.	- planned rational procedure, fidelity wanted, mutual adaptation occurred - training process
2. Elements of Implementation	- document. - in-service training - teacher traits	- teacher - document - school - in-service training - external change agent - teachers become change agent - teachers as translators - students
3. Relationship of Implementation to other phases of change	- translation	- effective diffusion depends on rational development
4. External factors influencing Implementation	- physical aspects of the classroom	- teacher training - presence - released time available - field center - change agent

Figure 5: Summary of information relative to questions from major data sources 1970

Although Cole (1971) discusses the importance of the specific characteristics of MACOS to be utilized in the development of instrument and interview items, the actual items designed do not reflect the emphasis. Fullan and Pomfret (1977) conclude that the explicit dimensions have been ignored and that "its transferability and criteria for comparison with other MACOS classrooms would be severely limited" (p. 350). See Figure 6.

1972 Data Sources

The lack of explicitness in the Cole (1971) study is in direct contrast with that of Crowther (1972). In attempting to identify factors affecting the implementation of the Alberta Social Studies Curriculum for elementary schools, Crowther (1972) utilizes a paradigm of variables which affect adoption behaviour developed by Rogers and Shoemaker (1971).

Based on a sample of 317 teachers in 38 schools in Edmonton, Crowther (1972) tested five hypotheses:

1. "Teachers tend to adopt more quickly those innovations which they perceive to have a high relative advantage, compatibility, trialability, and observability, and a low complexity". (p. 32) This hypothesis is supported and leads to the conclusion that there is "...the need for giving significant consideration to classroom teachers whenever new curricula are developed and diffused..." (p.98). In examining the data relative to each characteristic of the

QuestionsCole (1971) ←

- | | |
|---|--|
| 1. Mode of implementation | - equated with change in teacher knowledge, assumptions and behaviours |
| 2. Elements of implementation | - teachers
- documents
- students
- administrators |
| 3. Relationship of implementation to other phases of change | - not addressed |
| 4. External factors influencing implementation | - not addressed |

Figure 6: Summary of information relative to research questions from major data source, 1971.

innovation specified, Crowther (1972) concludes that although all characteristics are significant, they vary in their importance. The trialability of the curriculum is the least significant factor.

2. Teachers adopt innovations more quickly if they perceive that they are receiving assistance and encouragement from the principal or vice principal, supervising personnel, and other teachers. This hypothesis is supported by all types of change-agent personnel investigated. Crowther (1972) states that "...different change-agent personnel performed different functions at various stages of the adoption process" (p. 106).
3. The rate of adoption of innovations is increased if teachers perceive that they have received assistance and encouragement from in-service activities. This hypothesis is accepted, but differences between mean scores of non-adoptives and partial-adoptives suggest that in-service activities serve a less useful purpose with teachers in the earlier stages of the adoption process than with those in later stages of implementation.
4. Teaching experience does not influence rate of adoption of educational innovations. This hypothesis is supported and Crowther (1972) suggests that years of experience may be unimportant because of the significance of other factors including the influence of the change agent personnel,

in-service training, the nature of the innovation or the teacher's philosophy in regard to change.

5. Teachers with more years of professional training tend to adopt innovations more quickly. Failure to support this hypothesis is attributed to the fact that teachers are generally well educated. In addition, the teachers surveyed represented a more homogeneous grouping than the former population from whose behaviour the Rogers and Shoemaker (1971) model was generated.

In constructing the teacher questionnaire for use in the study, Crowther (1972) combined direct observation with teacher questionnaires, principal interviews and student interviews. The instruments utilized were characterized by generally vigorous validity testing. The author suggests that similar questionnaires could be developed to determine the level of implementation of other curricula.

See Figure 7.

1973 Data Sources

Russell, Leithwood and Baxter (1973) report the development and implementation of three curriculum innovations in Peterborough, Ontario. The study, conducted in three phases from 1969-1973 involved 48 schools in the final phase. Although not concerned with the degree of implementation of the three programmes (mathematics, social studies, and conceptual skills) investigated, insight is provided into the "relationships phases" of the change process. Implementation is

QuestionsCrowther (1972)

- | | |
|---|---|
| 1. Mode of Implementation | <ul style="list-style-type: none"> - rational process controlled by administrators - inservice - training process - optional adopted/non adopted - fidelity |
| 2. Elements of implementation | <ul style="list-style-type: none"> - teachers - curriculum relative advantage - compatibility - trialability - observability - complexity - principal - supervisor - student |
| 3. Relationship of Implementation to other phases of change | <ul style="list-style-type: none"> - translation - nature of developed curriculum - influence rate of implementation |
| 4. External factors influencing Implementation | <ul style="list-style-type: none"> - not addressed |

Figure 7: Summary of Information relative to research questions from major data source, 1972

depicted as a process occurring through the seven stages found in problem-solving models suggested by Havelock (1969) and others.

In the Peterborough project the school was considered the unit of change. Curriculum alternatives were not generated until the teachers in the school recognized a need. The seven stages identified are: Stage 1. Agreement to begin; Stage 2, Establish organization; Stage 3, Problem and goal selection; Stage 4, Study of available solutions; Stage 5, Field trial; Stage 6, Adoption, adaptation or rejection; and Stage 7, Field trial. Each stage is described in terms of the nature of the activities which occurred in them.

In an attempt to delineate more clearly the information from the Peterborough project and that which is relevant to implementation, Leithwood and Russell (1973) present a descriptive model of the implementation process. In this model an additional stage is identified which must precede the agreement to begin. This is the establishment of a climate for change which involves the presentation of a curriculum alternative which is perceived by the user as being viable for the satisfaction of the perceived need. This allows the teacher to acquire a sense of meaningfulness about the curriculum, and allows the motivation for change to come from the teacher's own context.

The proximity of teachers to students and their responsiveness to student needs make teachers the critical link in the curriculum development and implementation processes. Administrators are necessary as providers of support and motivation.

Leithwood and Russell (1973) posit four arguments for the

consideration of implementation as a problem-solving process:

1. Because teachers are exposed to students, they are more cognizant of the need for curriculum change.
2. The teacher is in a position to monitor the effectiveness of curriculum change and to suggest alternatives.
3. Implementation should be a continuous process of revision based on the evaluation of student and teacher performance.
4. The implementation of curriculum change is viewed as curriculum revision rather than radical change.

Russell, Leithwood and Baxter (1973) suggest that an interactional matrix be considered as a model for the generation of research relative to curriculum change. The vertical axis contains the identified stages of problem-solving based implementation and the horizontal axis identifies components of the implementation process which must be addressed at each stage: climate ~~for~~ change, academic-school interaction, evaluation, curriculum development, interschool cooperation, communication network, and teacher responsibility. The Leithwood and Russell (1973) article suggests that establishing a climate for change should be viewed as a stage of the implementation process rather than as a component of it.

The models and data generated from the Peterborough Project confirm much of what had been said by other investigators. Curriculum implementation was viewed as a linear rational process in which teachers were the major targets of change. Students were considered passive actors for the most part, yet ultimately the initiators of the

change process by not producing expected results in the learning environment. Administrators were viewed as assuming supportive roles.

In contrast to the locally developed curricula examined in the Peterborough Project, Solomon et al (n.d.) assessed the degree of implementation of a prepackaged and highly standardized preschool curriculum. A 95 item scale was utilized to collect information from 15 classrooms. Document analysis and teacher interviews supplemented classroom observations.

Teachers were rated on nine dimensions which are not clearly defined but which included teacher role, reinforcement and management behaviours, planning and evaluation, parent involvement, and unit approach. Details are sparse with respect to sample selection and scale development, but a general conclusion deemed warranted from the study by Fullan and Pomfret (1977) is that structural changes are more effectively implemented than role changes. The Solomon et al. study, although questionable methodologically as the result of insufficient reporting, suggests that a curriculum being implemented may be considered as a composite of parts which may be implemented to various degrees.

Hall, Wallace and Dossett (1973) report the development of a Concerns Based Adoption-Model (CBAM) for innovations. Their study clearly differentiates between adoption of an innovation as typically defined in diffusion studies and the implementation process. They hypothesized that an individual implementing an innovation experiences

a logical progression of concerns in relation to the innovation. These concerns are considered to be identifiable and developmental.

Teachers are predicted to progress through a series of Stages of Concern (SOC) about the use of an innovation. The stages identified house concerns in relation to thoughts, feelings and informational needs. The natural progression suggested is that proposed by Fuller (1969) from concerns relative to self, to concerns related to the task and then to concerns related to the impact or worth of the innovation. These concerns are divided into seven distinct stages, reflecting the developmental progression of the user (Figure 8). Users are assumed to respond in a unique fashion to the innovation but to proceed at an individual rate.

A second component of the CBAM is related to the actual use of the innovation. Eight specific Levels of Use (LOU) are identified. (Figure 9). These range from lack of knowledge of the innovation to a sophisticated renewal of the innovation. Users are assumed to progress from low levels of use to higher levels of use over time as the result of a learning process. In the highest stages, the user refines the innovation to suit the situation in which it is utilized.

Hall, Wallace and Dossett (1973) suggest a parallel progression through the stages of concern and the actual level of use of the innovation. "Both Levels of Use and Stages of Concern are aspects of the same developmental process. At each Level of Use there should be a congruent stage of concern if adoption is progressing satisfactorily." (p. 16).

Stages of Concern

- 0 Unaware: No indication of awareness that the innovation exists. There may be interest in similar innovations or a complete absence of awareness or interest in the area.
- I Awareness: Indicates a general awareness of the innovation. The potential adopter is likely to inquire about obvious characteristics of the innovation and of himself in relation to it in various non-specific ways. May even include expressions of concern about the possible personal conflict or threats.
- II Exploration: Indicates exploration of the roles played by the individual user and of the demands placed upon him; also includes exploration of role in relation to the reward structure of the organization and exploration of potential conflicts with existing structures or personal commitment that have financial or status implications.
- III Early Trial: Indicates user's exploration of his performance and manipulation of materials and time.
- IV Limited Impact: Indicates user's exploration of the total impact of innovation on clients in his immediate sphere of influence.
- V Maximum Benefit: Indicates user's exploration of the total impact of the innovation in an institutional context on learners and users.
- VI Renewal: Indicates user's exploration of new or better ways to reach the same goals or new goals.

Figure 8: Stages of concern about a curriculum innovation after Hall, Wallace and Dossett (1973)

Levels of Use

- 0 Non-Use: State in which the user does not know that the innovation exists.
- I Orientation: State in which the user is acquiring information about the innovation, its value orientation, its demands upon him, and the user system.
- II Initial Training: An action state in which the user is being trained in the logistics and use of the innovation.
- III Mechanical: A stage of implementation where users are engaged in pilot use of the innovation. The user is engaged in a step-wide attempt to master the tasks required by the innovation, often resulting in disjointed and superficial use.
- IV Independent: A state of innovation usage where the user handles the innovation well as an individual with quality impact on learners in his immediate sphere of influence, yet fails to integrate his work with the total system's effort.
- V Integrated: Stage in which the user is actively seeking ways to combine his efforts in using the innovation with colleagues to achieve a collective impact on all learners within an institution.
- VI Renewing: The stage of use of an innovation in which the user re-evaluates the quality of use of the innovation, seeks new alternatives to achieve impact on learners, examines new developments in the field, and identifies new goals for himself and the institution.

Figure 9: Levels of use of a curriculum innovation after Hall, Wallace and Dosssett (1973)

The CBAM was developed as the result of systematic observation of the implementation of a number of innovations. Applied to curriculum innovation, it extends knowledge of the nature of the implementation process by: identifying the user as the necessary target for management activities during the process of implementation, demonstrating the need for intervention strategies in the implementation, and providing a testable model. In addition, two distinct systems are identified as being involved in the implementation process: the user as a member of a formal organization and the agent or manager of implementation responsible for maintenance of a resource system to facilitate the implementation process. Hall, Wallace and Dossett (1973) maintain that the interaction of these systems during the implementation process creates a "third force" "collaborative system" (p. 8) which exists only during implementation. This collaborative system would be perpetual in a situation in which curriculum renewal is considered a continuous and individual activity as implied by Russell, Leithwood and Baxter (1973).

Within the collaborative system the role of the implementation agent is crucial to effective implementation. The implementation agent is viewed as being concerned with changing three factors if necessary: the practices of the user, the organization into which the innovation is introduced, and the nature of the innovation itself (p. 19). The implementation agent must be cognizant of the nature of these factors to effectively change them. The role becomes one of liaison (R. Common, 1979, p. 33).

Examination of the Stages of Concern (SOC) and Levels of Use (LOU) dimension of the CBAM reveals three possible outcomes relative to the nature of the curriculum actually in use. In the case of users who do not reach the maximum benefit SOC and/or independent LOU, the curriculum is not being maximized as intended by the developer. If users reach the SOC IV and LOU V, the curriculum is being utilized as intended by the developer. In cases where the user exceeds SOC IV and LOU IV, the curriculum is being changed from the developers' intention. This indicates that curriculum implementation was not considered in terms of a use/nonuse dichotomy by the investigators. Figure 10 presents a summary of this and other 1973 data sources.

1974 Data Sources

In assessing the degree of implementation of a prepackaged second grade mathematics curriculum, Leinhardt (1973; 1974) considered successful implementation as the achievement of the curriculum developers' intents. In the 1973 study an observation instrument was utilized to determine the level of implementation, while the 1974 study utilized a questionnaire.

Leinhardt's failure to identify adequately the relationship between the two measuring instruments makes it difficult to compare the findings of the two studies although both reported successful implementation in terms of changes in classroom behaviour as exemplified by increased student autonomy. Six components are reported as significant in determining the degree of implementation:

Questions	Russell, Leithwood and Baxter (1973)	Leithwood and Russell (1973)	Solomon et.al. (n
1. Mode of Implementation	- problem-solving process - fidelity approach with mutual adaptation overtness	- linear, rational process - problem-solving process initiated by climate for change in response to student needs - continuous process based on outcomes of student and teacher evolution - revisionary process	- fidelity - can be described in relation to the parts - different to different de
2. Elements of Implementation	- school strategies - teacher - parents - innovation - school - administrator - external change agent	- school - communication - teacher - students - parent - strategies - administrators - innovation - climate for change	- document-com - classroom - teachers - role - structure
3. Relationship of Implementation to other phases of change	- curriculum development in response to need to implement change	- curriculum development in response to teacher perceived need to implement, climate for change necessary for development and implementation - need for pilot testing - need to plan development, implications and evaluation with the same team - communication	- nature of the development in the degree to which is implemented
4. External factors influencing implementation	- parents - external - field center - change	- change agent - parents - other teachers (field testing) - academic-school interaction - interschool cooperation	

Figure 10:

Summary of information from major questions from ma

1 of 1

Good and Russell (1973)	Solomon et.al. (n.d.)	Hall, Wallace & Dossett (1973)	Leinhardt (1973) *
- ear, rational process - blem-solving process - iated by climate for - nge in response to - dent needs - tinuous process based - outcomes of student - teacher evolution - visionary process	- fidelity - can be described in relation to the component parts - different parts to different degrees	- learning process in which teacher as user of curriculum and the ability to utilize the innovation effectively - temporary systems - collaborative system of interaction	- achievement of curriculum developer's intent
- ool - communication - cher - students - ent - strategies - ministrators - ovation - ate for change	- document-components - classroom - teachers - role - structure	- user - innovation - concerns - organization - formal - informal - administrator - strategies - agent - interaction of above	- user - document - student - teacher - time - space - procedures - classroom management
- riculum development - esponse to teacher - ceived need to - lement, - ate for change - essary for develop- - nt and implement- - n - d for pilot testing - d to plan develop- - nt, implications and - uation with the - e team - munication	- nature of the curriculum development influences the degree to which it is implemented	- establishment of a temporary system - nature of innovation, affect rate of implementation - nature of development influences collaboration system possible - curriculum manager is liaison person between development and implementation system	- nature of product developed influenced the communicability
- nge agent - ents - er teachers (field - ing) - emic-school interaction - rschool cooperation		- any factor which contributes to teacher beliefs - agent (sometimes)	- not addressed
			* This summary also represents the findings of Leinhardt (1974)

Figure 10:

Summary of information relative to research questions from major data sources, 1973.

2 of 2

the context into which the innovation is introduced, allocation of time, allocation of space, assignment procedures, classroom management and student independence.

In determining the degree of implementation of an Inquiry Social Studies Curriculum, Eni~~ot~~ and Adelman (1974) were interested in the amount of change made to the original curriculum rather than in the degree to which teachers reflected the curriculum developer's original intents. This desired variation was due, at least in part, to the lack of prescription in the curriculum being investigated. An assumption underlying the study is that the researchers, as implementation agents, foster greater implementation by creating an awareness in individual teachers of the areas of the curriculum in which they are not effective implementers.

Through the involvement of headmasters/advisors, teachers and the researchers themselves, the aims of the curriculum were delineated into constituent values. Values were translated in practice and in procedures which could be expected of the teachers in achieving curriculum aims. The perceptions of pupils regarding teacher effectiveness in utilizing the practice and procedures provided data from which the degree of implementation was determined.

Headmasters were appointed as coordinators of teacher teams in an attempt to increase the rate of implementation. Team meetings were utilized to treat deficiencies in individual team member's practices and procedures. Large group workshops were also employed.

The report of the study does not include quantifiable data.

Researcher conclusions listed below provide several observations of relevance in describing the nature of the curriculum implementation process:

1. Many teachers find it difficult to be open and honest with respect to feedback from pupils.
2. Many teachers find it difficult to be open and honest with their peers in regard to classroom practices.
3. Constraints exist in the institution itself which make it difficult for teachers to implement the curriculum.
4. Roles and relationships are more difficult to change than other characteristics of the curriculum.
5. Characteristics of the students and of the teachers change during the process of implementing the curriculum.
6. The most successful implementation occurs in an environment which is open and trusting.
7. Implementation increases when feedback is continuous.
8. Identified methods of self-monitoring increased the rate of implementation.

Self-monitoring of curriculum implementation is considered one of several means of assessing the degree of implementation by Elliot and Adelman (1974). This type of evaluation is described as spurious by Evans and Sheffler (1974) because of the subjectivity involved. In an effort to overcome the problem, Evans and Sheffler (1974) focused on instrument development in assessing the degree of implementation of an Individual Progress Instruction (IPI) mathematics curriculum. In the

tradition of diffusion studies, the characteristics of the curriculum innovation were utilized to generate instrument items. Two categories emerge: those related to organization for instruction and those related to the instructional process itself. Included in the organizational category are materials and space, audio room, scheduling, and monitoring. The instructional category includes placement tests, pre- and post-tests, curriculum-embedded tests, prescription writing, classroom management, student self-management and planning sessions. Fullan and Pomfret (1977) suggest that the first category should incorporate a structure while the second should be separated into instructional and role items. In 1977, Evans and Berman reemphasized the inadequacy of evaluative instruments for curriculum implementation.

A significant finding from the Evans and Scheffler (1974) study is that different items within the categorization are implemented to different degrees. The unit of analysis in this study differs from those already described. Instead of considering the teacher or the student as the basic unit of implementation, the school is used.

Individual teachers are the focus of the Hess and Buckholdt (1974) assessment of the degree of implementation of a Language and Thinking (LAT) program for kindergarten and first grade children. Classroom observation methods were employed to determine the degree of implementation relative to teacher preparedness, adherence to specified procedures, correct usage of materials, positive reinforcement techniques with students, and teacher enthusiasm. The

observations were unannounced and randomly scheduled.

The investigators were concerned with the extent to which the teachers were utilizing the curriculum as it was intended by the developers. Three groups of teachers were assessed: those receiving complete sets of LAT material and training in their use; those receiving no LAT materials but receiving LAT objectives and training; and a control group which received no LAT materials and no training. Eighteen teachers representing 34 classes were assessed. By trichotomizing teachers who received both LAT materials and training into low, moderate, and high implementers, Hess and Buckholdt (1974) illustrated that students of high implementors performed better on criterion-referenced tests based on LAT than did students of low implementers. This demonstrates that the degree of implementation varies among teachers receiving the same materials and the same type of training.

Regan and Leithwood (1974) described the implementation of a Conceptual Skills Program, a packaged programme, in a group of Ontario schools. Concerned with the implementation of the curriculum so that its use reflects the developer's stated intents, the project focused on reducing potential barriers in the local situation which might have limited the effects of implementation intents. Among the potential obstacles identified are:

1. A product rather than process view of implementation.
2. Inadequate attention to the organizational structure of schools into which the curriculum was introduced.

3. Reliance on illogical diffusion models in planning for implementation.
4. Dependence upon oversimplified change strategies.

In their view "successful implementation of an educational innovation thus necessitates effectively surmounting conceptual obstacles as well as the many practical obstacles" (p. 6).

The model suggested for curriculum implementation in this study is significantly more refined than that described by Russell, Leithwood, and Baxter (1973) and by Leithwood and Russell (1973). The teacher emerges as occupying the pivotal role for the enlarged model in which implementation is described as occurring in four distinct phases; namely, the decision to use the curriculum, planning the strategies to be employed during implementation to foster use of the curriculum, actual use, and evaluation of the use in terms of the original curriculum goals.

Regan and Leithwood (1974) identify adequate teacher training in the skills and attitudes necessary for use of the curriculum as the fundamental activity of the second phase of the implementation. They conclude that "...the teacher's philosophy of education, a teacher's personality, and the specificity of the program's objectives will all influence the successful implementation..." (p. 43). The role of the student emerged in the third and fourth phases as a modifier of the teacher's efforts to use the curriculum. Formative evaluation and extensive supervision of students and teachers relative to the goals of

the new curriculum are identified as critical to success in the actual use phase. This formative evaluation includes the assessment of student performance, student attitudes, teacher beliefs, teacher practice, parent attitudes and the attitudes of other teachers. The evaluation is conducted by the trainee and by the supervisor who also appears to be the curriculum developer.

Although most implementation studies are concerned with the impact of the change process on the curriculum itself, Shipman (1974) identifies the influence of a curriculum change on the school as an organization. The teacher, while the focus for the implementation process, is viewed as part of a large school unit which is the target for the Keele integrated studies project. Because the curriculum was being used by teachers in particular organizational settings with students with specific needs, mutual adaptation is considered to occur among all these factors (p. 77-78). The curriculum then becomes a catalytic force within the organization during the implementation process (p. 176).

Shipman (1974) clearly distinguishes between the curriculum development process and the curriculum implementation process. Although leadership roles are not specified in the development process, the school administrator is identified as central to the implementation of the curriculum. The chief role of the administrator is the provision of resources, structures, and organizational strategies which will facilitate teachers in the implementation process. The administrator, whether willing or not, affects the implementation process by his or her

attitudes and activities (p. 121). The achieved degree of implementation is contingent upon organizational effort toward the implementation process. It is implied that by implementing a curriculum, a school as an organization learns to change (p. 176).

Three distinct operational phases are identified as preceding the effective entrenchment of the curriculum in the school. These are development, dissemination, and demonstration. Shipman (1974) describes the development stage as one of producing a broad framework within which each school can operate (p. 126). Dissemination involves giving information about the curriculum while demonstration is considered as distinct from the dissemination process. This is a departure from the research, development and diffusion literature of the time which considered demonstration as part of the overall dissemination process. Demonstration is presented as showing the potential effectiveness of the particular curriculum for the specific target school (p. 160). Underlying this approach is the belief that unlimited variation is possible relative to the curriculum being implemented.

A summary of the Elliot and Adelman (1974), Evans and Scheffler (1974), Hess and Buckholdt (1974), Regan and Leithwood (1974) and Shipman studies is presented in Figure 11. The information from the studies relative to the four research questions in this chapter is presented in point form.

<u>Questions</u>	<u>Elliot and Adelman (1974)</u>	<u>Evans and Sheffler (1974)</u>	<u>Hess and Buckholdt (1974)</u>
1. Mode of implementation	- mutual adaptation perspectives - achievement of curriculum	- planned process - different parts of curriculum implementation to different degree	- fidelity per - rate varies individual
2. Elements of implementation	- feedback - teachers - document - headmasters - workshops - organizational climate - constraints in school - students	- innovation - organization for investors - materials - space - planning sessions - roles-teacher and student - school	- teacher - classroom - strategies - document - students - training
3. Relationship of implementation to other phases of change	- researchers as developers are also implementation managers	- nature of the product developed influences rate of implementation	- not addressed
4. External factors influencing implementation	- agents - researcher - teacher teams - workshops - socio-economic factors	- not addressed	- not addressed

Figure 11: Summary of information relative to research questions from major data

es and
fler (1974)

Hess and
Buckholdt (1974)

Regan and
Leithwood (1974)

Shipman (1974)

planned process
different parts of
curriculum implemen-
tation to different
degree

- fidelity perspective
- rate varies from individual to individual

- surmounting conceptual obstacles and practical obstacles to use

- the direct result of organizational effort toward the goals of the curriculum
- unlimited potential for variation in curriculum

novation
organization for
investors
materials
pace
anning sessions
les-teacher and student
hool

- teacher
- classroom
- strategies
- document
- students
- training

- document
- teachers-philosophy of evaluation
- personality
- organization, structure of school
- strategies for implementation innovation
- teacher training-supervision
- student

- classroom
- school
- teacher
- innovation
- teacher relation-ship with school
- students
- administration
- strategies

ture of the product
veloped influences
ce of implementation

- not addressed

- interrelation among innova-tors
- decision to use planning for use, and evaluation
- specificity of objectives
- curriculum developer should be involved in training & supervising

- development and implemen-tation limited by leadership
- organization effort important
- developed document catalytic force within organization
- development dis-semination and entrench-ment inseparable

addressed

- not addressed

- socioeconomic factors
- agent
- trainer

- other schools

relative to research questions from major data sources, 1974.

1975 Data Sources

During the 1960's considerable money was dispersed by the United States Office of Education for the development of innovative educational projects in public schools. A variety of innovations emerged including alternative classroom organizational schemata, bilingual programmes, and reading programmes, among others. In order to determine the effectiveness of these innovations, the Rand Corporation was commissioned to assess the educational impact of 293 projects in school districts across the United States. Numerous individual reports emerged. Those addressing the implementation of curriculum innovations provided useful information for planners of curriculum implementation. Like Shipman (1974), the Rand researchers expected that educational innovation would appear differently in different classrooms and schools.

Relevant Rand reports are described in this chapter continuing in the chronological pattern established. Basic to all the studies, however, is the view of implementation described by Gross, Glacuinta and Bernstein (1971). In this view, implementation is the bridge between the initiation and the incorporation of an innovation. As such, its effectiveness is determined by the behaviour of members in the organization. In the school setting, the roles viewed as being of primary importance are those of the manager or administrator and the teacher. While management's responsibility is viewed as being mainly in the provision of resources and support, the teacher is viewed as pivotal because of the need for the teacher to act upon the demand to

incorporate the innovation.

Gross, Giacquinta, and Bernstein (1971) view implementation effectiveness in terms of the extent to which the developers' intents are exhibited in classroom practice. Degree of implementation is defined as "... the extent to which organizational members have changed their behaviour so that it is congruent with the behaviour patterns required by the innovation (p. 16)". They propose a model of conditions to be met and maintained during the implementation period: user understanding of the philosophy, design, methodologies and intents of the innovation; user possession of the basic skills needed to utilize the innovation effectively; provision of resources necessary for utilization of the innovation; compatibility of the innovation and the organizational and structural arrangements of the school; and the maintenance of a willingness to implement the innovation.

In spite of their initial reliance on the Gross, Giacquinta and Bernstein (1971) view of the implementation process, the Rand researchers were forced to conclude early in their investigations that most educational innovations required adaptations in specific organizational settings. Two of the Rand investigators, Berman and Pauley (1975), utilized observers and self-reports by users to determine the degree of implementation of innovations. Five measures, utilized in their study which are found throughout the Rand studies are:

1. Teacher perception of goal achievement.
2. Teacher perception of fidelity to the original contents of the

innovation.

3. Teacher perception of their behaviour change.
4. Perception of difficulty of the implementation.
5. Expectations relative to the continuation of the project when Federal support was terminated (p. 13-17, 77-78).

Five additional factors emerged from the Berman and Pauley (1975) study which are significant to the description of the nature of curriculum implementation in schools:

1. The degree of implementation of innovations was reported by observers as "systematically lower than the reports of participants" (p. 15).
2. Organizational climate was identified as a possible influencing factor in the implementation process.
3. Teacher participation in decision making relative to the implementation process was considered to be an influence.
4. The nature of the interaction between the school administrator and the teacher implementer was felt to influence the degree of implementation.
5. The provision of resources by administrators was identified as influencing the degree of implementation.

Reliance on the case study approach and the inadequacy of some of the measures of the degree of implementation employed in the Rand Studies are sometimes criticized (e.g. Fullan and Pomfret, 1977).

Dalin (1975) reported case study research being carried out within the Organization for Economic Cooperation and Development (OECD).

through the Centre for Educational Research and Innovation (CERI) and International Management Training for Educational Change (IMTEC) which supported the findings of the Rand Corporation studies. "...Successful implementation means mutual adaptation" (p. 2). In his report Dalin (1975) identifies three perspectives which dominate the literature at that time. The first is referred to as a "topdown process" (p. 1). This approach is described as "onesided, directed from political and administrative bodies outside the school" (p. 1). In this view, the school is considered the receiver and the degree of implementation is determined by the discrepancies between the innovation as an idea and the innovation as practised.

In the second perspective Dalin (1975) describes implementation as a "schoolbased process" (p. 2) in which each school is responsible for the adoption of innovations in response to its own development needs. "Degree of implementation would in this case be the degree to which the school is able to improve its own practice in response to crises and problems experienced by the total school culture" (p. 2).

The third perspective combined the first two and is described as a "mutual development and adaptation process" (p. 2). In this perspective,

The individual school is looked upon as a creative unit in a larger system of schools and support institutions. Successful implementation would mean the ability of the

school to be responsive to centrally or externally developed and/or directed innovations, on the one hand and, at the same time, the ability to develop a creative growth and improvement process within the school itself. The process of implementation therefore is a process characterised by dialogue between the school and its environment, in particular between the school and central administration. Degree of implementation in this case would not only be a measure of the degree to which the school, as a unit, adopts centrally developed innovations and at the same time takes care of its own development needs, but also the extent to which central units (e.g. political units and administrative units) adapt themselves to the continuous demand and creative processes within the schools...In the process of mutual development and adaptation, the innovation undergoes change. In addition, the structure, strategies and people involved in the process also change. The process implies continuous development. (p. 2)

It is this third perspective that Dalin (1975) considers the most realistic.

Three phenomena of major concern during the implementation process are also identified by Dalin (1975):

1. Barriers toward implementation. These include value barriers, power barriers, practical barriers and psychological barriers of all the concerned groups in the implementation process. The concerned groups isolated are students, parents, teachers, heads, and central administrators although the existence of other groups is implied (p. 4).
2. Degree of mutual development and adaptation. Two factors are identified as needing research in this area: the process of creative developments within the school and the process of adopting innovations from outside the school (p. 3 - 5). A hypothetical direct relationship is cited between these factors.
3. Strategies for implementation. Dalin (1975) suggests that strategies must be described for specific groups in specific places. To understand how strategies function in schools, two factors are identified for consideration: the locus of use of the strategy (external or internal) and the consequence of the strategy (consensus or conflict).

Dalin (1975) notes that "forces external to the educational system can influence the process of change" (appendix, p. 2). Included in the

factors identified are political stability, economic growth, social expectation, technological development, and changing job expectations. Several influential factors within the educational system which might influence curriculum change are also identified. These include: resources, evaluation, teacher-personnel tasks, qualifications, organizational linkages, incentive systems, leadership, control mechanisms, and relationships among organizational members.

In summary, Dalin (1975) considers that curriculum innovation is neither completely developed external to the school in which it is to be utilized or within the school. The innovation undergoes a process which makes it compatible with the factors initiating the change process, the organization into which it is introduced and the strategies utilized in its implementation. In a later publication not directly related to change case studies, Dalin (1978) reiterated these factors:

Brantley (1975) utilized a case study methodology to determine the extent to which the conditions described by Gross, Giacquinta and Bernstein (1971) were influenced in the implementation of a minimal mathematics curriculum for migrant students with achievement levels ranging from preschool to junior high school. Implementation was assumed to have been effected in one year.

Implementation as defined by Brantley (1975) is "a process - that, when successful, results in the alteration of teacher behaviour and attitudes so that they conform to the expectations of the innovation" (p. 15). The degree of implementation was assessed

utilizing a researcher developed observational rating scale, focused interview and teacher self rating scales. The behaviours sought were identified as those reflecting curriculum goals.

Brantley (1975) reported positive relationships between the degree of implementation and the teacher's perception of clarity of the innovation, material availability, organizational compatibility, ability of teacher to implement, and teacher receptivity to change. He also concluded that "... teachers were not generally resistant to the idea of introducing a new change" (p. 132). Implementation is viewed as impeded by:

1. Lack of familiarity with the mechanics of the innovation.
2. Unavailability of essential materials.
3. Incompatibility between innovation requirements and teacher roles.
4. Inadequate support from administrators and developers. (p. 140)

In regard to the fourth impeding factor, the necessity for stringent monitoring of the implementation process is identified. Administrators are expected to anticipate problems in implementation, and to remove impediments to successful implementation (p. 133).

It should be noted that although Brantley (1975) views implementation procedures as malleable, the degree of implementation is assessed in relation to the reflection of developers' intents in teachers' practices. This view is consistent with that of the Gross, Giacquinta

and Bernstein (1971).

Another direct test of the model suggested by Gross, Giacquinta and Bernstein (1971) was conducted by Winklevoss (1975) in relation to the implementation of a reading and communication programme. Winklevoss (1975) considers planning for implementation to be separable into two phases. In the first, the end toward which the implementation process works - that of the curriculum functioning as it was originally intended by the developer is considered. In the second, the ongoing means of achieving the desired implementation end are involved. The emphasis in this process phase is teacher attitudes.

In addition to emphasizing the need to recognize that curriculum implementation is more complex than described in the Gross, Giacquinta and Bernstein (1971) model, Winklevoss notes that "...the individuality of an innovation and all the related factors, e.g., the teachers involved, the principals, the students, the school setting, etc. continually define the essence of ... implementation" (p. 328).

This suggests that the implementation process must be responsive to the needs of the situation or context in which it occurs. Winklevoss (1975) further suggests that both formative and summative evaluation of the implementation process are necessary for effective achievement. The standards by which the evaluator judges the effectiveness of the process are formulated from the goals of the curriculum. Summative evaluation should be based on reports of organizational members utilizing the curriculum in light of its influence on their performances, e.g. administrators, teachers, supervisors. Formative evaluation

provides monitoring information important in planning successive implementation interventions and in planning for the implementation of other curricula.

Downey et. al. (1975) describe a study in which the effectiveness of curriculum implementation is defined in terms of the reflection of the curriculum developers' intents. The study examined the implementation of the Alberta social studies curriculum addressed by Crowther (1972). Downey et. al. (1975) were concerned with the appropriateness of the Provincial curriculum guidelines, and user knowledge relative to the guidelines, the degree to which locally developed programmes reflect ministry document intents, and the degree to which the classroom demonstrates the ministry guideline intents.

Four means of assessing implementation were employed in the study; namely, content analyses of ministry documents, analysis of local curriculum documents; site visits including interviews with teachers, students and parents and classroom observations; and the administration of questionnaires to 1794 teachers, 900 students, and 1440 parents.

An interesting finding of the Downey et. al. (1975) study is that there were philosophical inconsistencies in the ministry documents. These discrepancies decreased the probability that the curriculum intents could be effectively translated at the local level. In addition, few teachers, including those involved in local curriculum development based on the ministry documents, appeared aware of the more subtle implications housed in the goals for the curriculum (p.7). A similar

condition existed in regard to the locally developed documents.

In discussing the results of the study, Downey et. al. (1975) provide support for the contention that effective feedback mechanisms must be established to facilitate communication across hierarchical levels. The importance of team building is also emphasized.

Hampson (1975) described the attempted implementation of a novel social studies curriculum entitled American Political Behavior. Although no quantified level of implementation is reported, the effort was generally considered unsuccessful. Three significant findings emerged from the study:

1. Professional staff must be involved in the early stages of the change process (p. 374).
2. The "...degree of closure that the board of education can choose to exercise..." should be clearly identified (p. 375).
3. The school administrator responsible for the implementation effort "...must have both political sensitivities and professional expertise in order to provide the leadership necessary..." (p. 376).

Hampson (1975) identifies fifteen forces which impinge on the curriculum change studies. These forces are categorized as: professional internal, including administrators, teachers, steering committees, and teacher organizations; professional external, including state curriculum centres, steering committees at the state level, consultant and professional organizations; non-professional internal including school boards, parents, students, and newspapers;

and non-professional external including the state board of education, legislature and funding foundations.

In discussing further implications from the Rand Corporation investigations at an instructional conference, McLaughlin and Berman (1975) suggested that two levels of implementation must be considered, local and centralized. Centralized actions, referred to as macro-implementation efforts, must consider the factors present at the local or micro-levels in formulating plans. In this regard, four factors are identified as relevant for consideration: the process of implementation and not the adoption of an innovation determine its outcomes; mutual adaptation normally occurs when significant change is effected; the institutional setting affects its receptivity to change; and micro settings vary in their ability to implement change.

At the same conference in Germany, Fullan (1975) defined implementation as the "putting into practice of the essential characteristics of an innovation" (p. 1). The process is described as occurring in a social system and as affecting four dimensions: structure, role/behaviour, knowledge and understanding, and value internalization. These elements or dimensions are described as interactive over time. Each element was described as follows:

Structure: This element includes the formal arrangement and physical conditions associated with the curriculum being implemented.

Role/Behaviour: This dimension includes any changes in relationships required during the implementation of the curriculum

or once the curriculum is in place.

Knowledge and understanding: This factor necessitates a thorough understanding of the philosophy underpinning the curriculum, as well as its design and implications for practice.

Value Internalization: This element is demonstrated in commitment to the curriculum and to its implementation.

Fullan (1975) suggests that all four elements must be considered in assessing the degree of implementation.

Factors are identified as facilitating implementation: explicitness of the curriculum innovation, in-service training, resource support, feedback mechanisms relative to problems during the implementation process, user involvement in the decision to adopt the curriculum, favourable organizational and political awareness on the part of the planners for implementation. Each of these factors is considered to impinge upon the four elements or dimensions identified. Point form summaries of Fullan (1975) and other studies described from the same year are presented in Figure 12.

1976 Data Sources

Four Rand Corporation reports published in 1976 contain information useful in expanding the view of the nature of the curriculum implementation process. Each is discussed below.

Berman and McLaughlin (1976) reinforce their earlier contention that implementation, as part of a three-phased process, is characterized by mutual adaptation. They state: "... the particular

<u>Questions</u>	<u>Berman and Pauley (1975)</u>	<u>Dalin (1975)</u>	<u>Brantley (1975)</u>
1. Mode of implementation	- extent to which developers' intents are met - mutual adaptation is the rule not the exception	- mutual adaptation process - developmental process - communication content - responsive to intent - and external factors	- a process alteration behaviour of innova - success of administration to anticipate potential
2. Elements of implementation	- school setting - teacher: - skills - understanding - philosophy - resources support - philosophy - innovation - interaction between teachers and administrators - organizational structure - climate of organization - teacher participation in decision making	- strategies - school - innovation - barriers - organization - conflict - parents - heads - central administrators	- innovation - resources - organization - compatibility - teacher role - to change - teacher role - administration
3. Relationship of implementation to other phases of change	- bridge between initiation and incorporation - perception of difficulty	- implementation influenced by evaluation process - factors initiating development influence implementation	- development - implemented by the development
4. External factors influencing implementation	- community support - federal support - federal change agents - socio-economic factors	- political stability of region - higher levels of administration in school systems - issues - communication vehicles - social expectations - technological development	- not addressed

Figure 12: Summary of information relative to research questions

Dalin (1975)

- mutual adaptation process
- developmental process
- communication content
- responsive to intent
- and external factors

- strategies
- school
- innovation
- barriers
- organization
- conflict
- parents
- heads — central administrators

- implementation influenced by evaluation process
- factors initiating development influence implementation

- political stability of region
- higher levels of administration in school systems
- issues
- communication vehicles
- social expectations
- technological development

Brantley (1975)

- a process in which the alteration of teacher behaviour to expectation of innovation
- success determined by administrator's ability to anticipate and remove potential impediments

- innovation — clarity
- resources
- organizational compatibility
- teacher ability
- teacher receptivity to change
- teacher role
- administrative support

- development and implementation related by the developer during implementation

- not addressed

Winklevoss (1975)

- two distinct components, ends towards which process is aimed and process utilized to meet ends

- curriculum
- teacher attitudes
- principal
- school setting
- student
- evaluation — summative and formative
- supervisors

- developer intent is aim of implementation
- implementation must be followed by evaluation of the total change process

- socio-economic factors
- community demands

(cont.)

Summary of information relative to research questions from major data sources, 1976

2 of 2

<u>Questions</u>	<u>Downey et al. (1975)</u>	<u>Hampson (1975)</u>	<u>McLaughlin and Berman (1983)</u>
1. Mode of Implementation	- characterized by reflection of developer's interests	- process concerned with translation of developer into teacher practice	- distinct from other change - mutual agreement to be expected - change is large - influence of institutional factors
2. Elements of implementation	- innovation - peer team building - classroom - school - teacher - parent - administration - feedback systems	- user - motivation - administrators - professional staff	- school - teacher - administrator - innovation - strategies - history
3. Relationship of implementation to other phases of change	- local development processes influence implementation	- users involvement in development increases - nature of selection committee influences translation of intents of developers during implementation	- two levels and central
4. External factors influencing implementation	- context of school Ministry guidelines	- board of education power - teacher organizations - state policies - media - professional organizations - legislature - funding foundations	- institutional - macro level - micro level

Figure 12: Summary of Information relative to research questions from major data (cont.)

Hampson (1975)

- process concerned with translation of developer into teacher practice
- user
- motivation
- administrators
- professional staff
- users involvement in development increases
- nature of selection committee influences translation of intents of developers during implementation
- board of education power
- teacher organizations
- state policies
- media
- professional organizations
- legislature
- funding foundations

McLaughlin and Berman (1975)

- distinct from adoption
- mutual adaptation is to be expected when change is significantly large
- influenced by capacity of institution to change
- school
- teacher
- administrator
- innovation
- strategies
- history
- two levels involved, local and centralized
- institutional setting
- macro level influences
- micro level

Fullan (1975)

- putting innovations in practice in a manner reflective of the essential characteristics of the innovation
- innovation - resource support
- structure - incentive systems
- evaluation
- user - knowledge
- understanding
- internalization
- interaction
- role/behaviour
- in-service training
- user participation in planning for implementation facilitates it
- user participation in decision to adopt
- political contingencies

on relative to research questions from major data sources, 1976

organizational setting of the school, classroom or other institutional host, and, at the same time, the organization and its members must adapt to the demands of the project" (p. 349). This implied that the implementation process is one of ongoing training within the organization.

McLaughlin (1976) expanded on her explanation of the mutual adaptation process. "Implementation was a dynamic organizational process that is shaped over time by interactions between project goals and methods, and the institutional setting. As such, it is neither automatic nor certain." (p. 340).

In the 293 situations examined, the Rand Corporation researchers identify three characteristic outcomes of implementation efforts:

1. Mutual adaptation which represented successfully implemented projects.
2. Cooptation which represented "adaptation of the project design, but no change on the part of participants of the institutional setting" (p. 341)
3. Non-implementation in which the implementation process broke down.

McLaughlin (1976) notes that "the amount of interest, commitment, and support evidenced by principal actors had a major influence on the prospects for successful project implementation" (p. 341). The central administrator's attitudes are described as providing the "signal" for other people involved in the process. Unless implementation is clearly identified as a priority item by the administrators, it is unlikely to be

successful.

These strategies for adaptive implementation are identified as critical: local material development to foster a sense of "ownership", staff training spaced to facilitate the learning processes during implementation, and adaptive planning (staff meetings) to provide opportunity for treatment of unanticipated consequences and to encourage "on-going, interactive planning" (p. 347).

Elsewhere McLaughlin (1976, b) suggests that many Title I projects were not implemented because of failure to foster compliance during the change process. Five factors are identified as having potential to promote such compliance: "goals, an incentive system, information feedback, reliable knowledge about effective strategies, and effective authority - are interdependent in their functioning. Weakness in any one aspect is likely to undermine the others..." (p. 414).

The third Rand Corporation study of interest in 1976 is a description of the non-implementation of Experimental Elementary Programs (EEP) in New York City schools: Warren (1976) concludes that EEP failed because schools into which the programmes were introduced lacked "the flexibility, the democracy of staff participation, the freedom to depart from the curriculum in new ways, the research and evaluation process and the interaction with the community" (p. 387). In addition, the need to account for forces within the organization must be considered when planning for implementation.

Warren (1976) identifies the principal as occupying the "pivotal role in sanctioning any change effort in schools..." (p. 395). She adds

that teachers are less likely to endorse curriculum changes not sanctioned by the principals. In addition, the number of decision-making levels between the decision to implement and user must be limited. "For a program to succeed, those involved must want it to succeed, especially where built-in resistances are strong. This mutual commitment constitutes normative sanction for change. In its absence, remunerative or coercive sanctions are weaker substitutes. Without any sanctions, inertia triumphs" (p. 396).

The description of the implementation of diagnostic/prescriptive reading innovations by Wirt is the fourth Rand Corporation study of interest published in 1976. This study compared the rates of implementation of six separate reading projects in local school districts in an effort to identify major barriers to implementation and their implications for an implementation strategy. Several conclusions emerge which are significant in describing the nature of curriculum implementation:

1. Superintendent support increases continued implementation.
2. Coercive implementation strategies, although apparently successful in the early stages, result in piecemeal implementation.
3. Implementation of curricula often requires continued provision of resources for maintenance.
4. Teachers abandon behaviour changes which require a great deal of effort.
5. Flexible curricula are implemented more readily than less

flexible ones.

6. Implementation procedures must be specific for the situation in which the change is to occur.
7. There is a significant negative correlation between the number of schools involved in a curriculum change and the amount of change.

Leithwood et al. (1976), in a further analysis of the Mathematics Project in Peterborough County, amplify and extend the model proposed early in the project. The report describes the problem solving model discussed earlier but focuses on the role of the change agent who is identified in this report as a person from outside the organization and in some cases as the principal. Specifically, the change agent must provide the mechanism for effective communication about the nature of the curriculum innovation. This type of communication is identified as of utmost importance. "One important task of the change agent, therefore, is to design communication requiring optimal amounts of assimilation and accommodation on the part of the client" (p. 104). In addition it is the change agent's responsibility to shift the focus relative to the major target of communication to different levels of the organization as the process continues.

The change agent is considered to be responsible for recapitulation processes through which the client understands, accepts and knows how to act in a manner consistent with the goals of the curriculum. In essence, the agent plays a modifying role "in an intermediate position between the initiator and the ultimate client."

(p.109). In this role, the users are assisted in making successive approximations toward desired behaviour. Since the skills "...required to effectively implement a change vary from individual to individual" (p. 115), the agent must do all that is possible to keep the target users permeable to information.

The role of reward structures in facilitating implementation is an important one because "... there are frequently few incentives, and indeed substantial disincentives to adapt a change." (p. 116). One incentive identified as crucial to the success of curriculum implementation is the clear demonstration that implementation will produce increases in student progress. There are three options available to the curriculum change agent relative to rewards which could result in successful strategies: the increase in proffered positive rewards to those who do implement, the reduction or removal of disincentives, and the increase of negative rewards for those who do not change (p. 118). Recognition of potential intrinsic rewards as motivators is also important. During late stages of implementation, the success of implementation exerts pressure on those who have not implemented the curriculum.

The curriculum implementer, then, must foreshadow the change that will eventually occur by identifying the authority figures to be involved in the change, by providing training for the authority figures prior to the change, involving teachers where possible, and once the curriculum change is presented by the authority figure, by training teachers. The training of teachers should be gradual and acquire

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"...the contextual knowledge possessed only by practitioners in the local system" (p. 121). Throughout, successive approximations should be encouraged with the educational merits of the change in focus.

In an effort to conceptualize what could be extracted relative to the nature of the curriculum implementation process from the Ontario Institute for Studies in Education (OISE) field studies, Leithwood (1976) developed a rudimentary model. In the model implementation is depicted as a linear rational activity comprised of three distinct stages: diagnosis, application and evaluation. The diagnostic stage includes the identification of goals relative to the implementation and their delineation as interim goals. In the formulation of goals, consideration must be given to the structure of the formal organization into which the curriculum is being introduced; the teacher style, roles and relationships; to the values inherent in the curriculum, and to the knowledge and understanding necessary to implement the curriculum in the classroom. The diagnosis phase is basically one of identifying discrepancies between what is and what should be for the curriculum to be implemented as the developer intends it and of identifying potential obstacles to discrepancy reduction.

The second phase of the process, application, requires the identification and selection of alternative means for overcoming the discrepancies identified in the diagnosis phase. Specific procedures for inculcating skills, attitudes, and knowledge in potential users are activated, reward and incentive systems are designed and utilized, and changes are made in organizational structures and resources to

facilitate the implementation. The final phase of the process involves two forms of evaluation. Formative evaluation occurs throughout the process and involves both the change agent and the targets of change. Summative evaluation assesses the effectiveness of all stages of the implementation process.

Roose (1976), in describing curricular change, ranked the factors identified as crucial to implementation by OISE projects and others. The factors considered were involvement in decision making about implementation, pilot programs, change agent roles, administrative support and the planned nature of curriculum change.

The curriculum change described by Roose (1976) is distinctive in that it resulted from political pressure for change. Implementation is described as the achievement of objectives identified in policy statements. The implementation process begins with policy and ends with the installation of the curriculum in the school setting and the integration of the philosophy of the specific curriculum and the school's philosophy.

Roose (1976) reports that not all the elements of the implementation process were of equal importance in effecting curriculum change. Pilot programs, formal communication channels, solitary in-service sessions and the behaviour of the change agent influence curriculum implementation to the extent that continued and regular in-service training does. Other factors which emerge as important for effective curriculum implementation are reward, integration of the new curriculum with existing curricula, planning for teacher difference,

and the informal communication networks. Strong commitment to the implementation process by the administrator is identified as the most significant factor in effecting curriculum implementation.

Hall and Loucks (1976) reported testing of the CBAM in relation to three specific innovations: team teaching, an elementary science curriculum, and the use of modules. Although the investigations did not alter the structure of the model three conclusions appear relevant for consideration in planning for implementation. First, although a curriculum change effort may be initiated with a group of teachers at the same point in time, individuals from the group exhibit different levels of use and stages of concern. The implication of this finding is that the implementation agent to be effective may have to consider different intervention strategies for members of the user group at any one particular time.

A second related conclusion is that the majority of users do not advance beyond a level of routine use. This routine level may be considered from a fidelity perspective as the point at which the user is reflecting the basic intent of the developer. If adaptation and revision of the curriculum are considered as part of the curriculum implementation plan, intervention strategies must be generated to facilitate movement to higher levels of use.

The third significant conclusion is based on the assessment of student achievement in relation to teacher level of use. In mathematics achievement, student scores increased steadily with teacher level of use, but in relation to reading, achievement scores

peaked when teachers reached a routine level of operation. These findings infer that there may be situations in which the revision or renewal of curricula may be non-beneficial to students. An alternative consideration is that the higher levels of use may in fact represent the lower levels of use of a new innovation. Point form summaries of the 1976 major data sources are shown in Figure 13.

1977 Data Sources

Two studies are discussed in this section. The first by Nicodemus (1977) describes the factors involved in teachers' decisions to implement a science curriculum. In the second, Fullan and Pomfret (1977) delineate a conceptual framework of the nature of the implementation process based on seventeen studies which had defined and attempted to measure implementation.

Nicodemus (1977), although not defining the term, appears to equate the initial behaviour in the implementation process with the dissemination of the centrally developed curriculum. Level of use is identified in terms of the use of material and ideas from the curriculum. His results indicate that individual teacher characteristics can be considered by the curriculum developer and by the curriculum monitor in implementation efforts. Specifically, teachers at the extremes of teaching experience tend to exhibit lower levels of use; professional training is negatively associated with high levels of use; and teachers in elementary school tend to use the curriculum materials more than secondary school teachers. Considered in isolation, these findings may

<u>Questions</u>	<u>Berman and McLaughlin (1976)</u>	<u>McLaughlin (1976)</u>	<u>Warren (1976)</u>
1. Mode of implementation	- characterized by mutual adaptation over time - ongoing training process - possible outcomes - non-implementation - co-optation - adoption	- characterized by mutual adaptation - ongoing training	- mutual process
2. Elements of implementation	- user - innovation - classroom - school - training - principal - central administration - strategies	- user - classroom - school - training - principal - central administrator - strategies - compliance - incentives - feedback - innovation - critical mass goals	- school - innovation - flexibility - organization - decision - teacher - normal
3. Relationship of implementation to other phases of change	- not addressed	- involvement in development creates feeling of "ownership" which influences implementation	- not addressed
4. External factors influencing implementation	- organizational setting - federal agencies	- organizational setting - federal agencies	- community - interrelationships

Figure 13: Summary of information relative to research questions from major data sources, 1976.

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Warren (1976)

- mutual adaptive process
- school
- innovation
- flexibility
- organization
- decision-making levels
- teacher
- normative sanctions
-
- not addressed
- community
- inertia

Wirt (1976)

- mutual adaptive process which depends on decision-making for success
- superintendent
- strategies
- resource support
- teacher
- quantity of change
- innovation
- flexibility
- strategies
- involvement by teachers in development influences implementation
- flexibility of curriculum document influences implementation
- characteristics of school district
- number of schools involved in change

(cont.)

y of information relative to research questions
ajor data sources, 1976.

Questions

1. Mode of implementation

Leithwood et al. (1976)

- a problem-solving process based on communication
- successive approximations to desired ends

Roose (1976)

- achievement of objectives of curriculum policy statement

Hall and Loucks

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2. Elements of implementation

- change agent
- principal
- innovation
- user
- rewards
- peer pressure
- teachers
- training

- change agent
- innovation
- innovation
- administrators
 - support
 - commitment
- pilot programs
- communication channels
- in-service
- amount of change

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3. Relationship of implementation to other phases of change

- the greater the involvement of users in development, the more likely the effective implementation

- involvement in decision-making relative to development facilitates implementation

- no
- 7

4. External factors influencing implementation

- change agent
- context of school

- political pressure for change

- no

Figure 13:
(cont.)

Summary of information relative to questions from major data sources, 1

Roose (1976)Hall and
Loucks (1976)

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|--|---|
| <ul style="list-style-type: none"> - achievement of objectives of curriculum policy statement - change agent - innovation - innovation administrators <ul style="list-style-type: none"> - support - commitment - pilot programs - communication channels - in-service - amount of change - involvement in decision-making relative to development facilitates implementation - political pressure for change | <ul style="list-style-type: none"> - a developmental process which occurs at different rates in individual users - strategies - teachers <ul style="list-style-type: none"> - concerns - self - task - levels of use - innovation - time - nature and timing of training - students - not addressed - not addressed |
|--|---|

Summary of information relative to research questions from major data sources, 1976

be rationalized. Collectively they support the Hall and Loucks (1976) finding that individual teachers implement at different rates and, therefore, that implementation strategies must address these differences.

Nicodemus (1977) attempted to identify other variables which discriminate between high and low implementation. Factors identified as facilitating use include available money, accommodation, time, in-service activities, resources, organizational restructuring and increased student achievement. The primary factor appears to be communication at several levels of decision making: with the developer, the monitor, support personnel, the public, mass media, and other educators.

Nicodemus (1977) suggests that the curriculum developer should play a supervisory role in which support, motivation, and professional development are critical components. The developer should encourage mutual adaptation between the curriculum and the receiving organization. In an earlier study, Nicodemus (1976) described the process of curriculum implementation as consisting of three stages: discipline research, curriculum projects and social change through information systems. This view is consistent with that of the Rand Corporation Researchers.

Fullan and Pomfret (1977) identify the need for careful study of the nature of curriculum implementation on the basis of deficiencies in knowledge related to what actually changes during implementation, why so many educational change efforts have failed, the exact nature of the

implementation processes as distinguished from the adoption decision, and the actual causes of student learning outcomes. The literature reviewed in their study is that which attempted to measure directly the degree of implementation of curricula or organizational changes in educational settings. The study extends conceptions presented in Fullan (1975).

Literature is categorized according to the research instruments utilized in assessing the level of implementation and according to the apparent view of the researchers of the nature of the curriculum implementation process. Two perspectives relative to implementation dominate the study. Some studies consider the ultimate goal of the implementation process to be the use of the curriculum innovation reflective of the developers' intents — called "fidelity". The second perspective considers implementation as naturally resulting in changes in the behaviour of the user, in the nature of curriculum and/or in the nature of the organization in which it is used.

Determinants of implementation are isolated from the studies and categorized. Four broad categories emerge: features of the innovation, strategies utilized in the implementation efforts, characteristics of the adopting units, and characteristics of the macro socio-political units. In addition, dimensions of implementation practice are identified, namely: changes in materials, structure, role/behaviour, knowledge and understanding, and value internalization. These are consistent with dimensions identified in other studies reviewed in the chapter.

From the description of the implementation process, it is possible

to infer that there is interaction among the dimensions of implementation which Fullan and Pomfret identify and the determinants of implementation. Figure 14 suggests a possible framework which could be utilized in the description of the interactions. Whatever the exact nature of the interaction, Fullan and Pomfret offer this conclusion:

Implementation is a highly complex process involving relationships between the users and managers, and among various groups of users, in a process characterized by unanticipated problems that should be prepared for prior to attempting implementation, and continually addressed during it (p. 391).

This conclusion is more in keeping with the mutual adaptation perspective than with the fidelity perspective.

In describing the socio-political determinants of curriculum, dimensions of implementation Fullan and Pomfret (1977) refer to a number of studies related to policy implementation and the implementation of organizational change. They have not, however, concentrated on the description of the nature of these interactions. They do suggest that those responsible for the implementation must be aware of the macro-socio-political factors. It would appear that the administrator is primarily responsible for the protection of the users from at least some of these factors. (p. 394-397). Figure 15 presents a summary of the two major data sources from 1977.

Determinants of Implementation	Dimensions of Implementation			
	Change in material	Change in structure	Change in role/behaviour	Change in knowledge and understanding
	Change in value	Change in internalization		
Characteristics of innovation				
Strategies				
Characteristics of adopting unit				
Characteristics of macro-social political units				

Figure 14: Matrix for the consideration of the interaction of determinants and dimensions of implementation.

1978 Data Sources

The Fullan and Pomfret (1977) study provides part of the data base for the development of a theoretical model of curriculum implementation by D. Common (1978). By restricting her data sources to 25 studies published between 1968 and 1977 which addressed all of her research questions, and by utilizing an interpretative-theoretical methodology, D. Common (1978) developed a theoretical model of curriculum implementation. The questions which served as parameters and investigative devices for the model are:

1. What are the components and elements of curriculum implementation?
2. What is the purpose of curriculum implementation?
3. Who are the curriculum actors?
4. How does implementation occur?

The model which emerged identifies three elements in the curriculum implementation process: the curriculum, the user, and the organization. Each is discussed below.

Three attributes of the curriculum are identified as influencing implementation; namely, its complexity, its clarity and its practicality. The curriculum was reported as performing two functions. "First, the curriculum exerts influence on the process, and second, the curriculum adapts to the process activities" (p. 214). This is the mutual adaptation perspective as defined by Fullan and Pomfret (1977).

The users of the curriculum, the second element, are described as possessing three characteristics which influence implementation:

<u>Questions</u>	<u>Nicodemus (1977)</u>	<u>Fullan and Pomfret (1977)</u>
1. Mode of Implementation	- Implementation by individuals occurs at differing rates in individuals - learning process - related to professional development	- either fidelity or mutual adaptation orientation - complex interaction between users and manager - planning for problem intervention
2. Elements of Implementation	- curriculum - teacher - experiences - training - level - monitor - strategies - resources	- prehistory - innovation - strategies - characteristics of adopting unit - macro-socio-political units - dimensions
3. Relationship of Implementation to other phases of change	- curriculum developer should be curriculum monitor	- not addressed
4. External factors Influencing Implementation	- mass media - public support - other educators - universities - faculties of education	- socio-political factors

Figure 15:

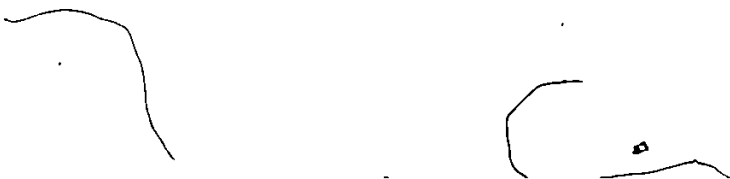
Summary of information relative to research questions from major data sources, 1970

knowledge and understanding, attitude and ability or skill to implement. The user serves three distinctive functions: planning, performing, and monitoring. "It is recognized that the subcategories are not mutually exclusive; and are in a dynamic state of interaction and definition". (p. 217).

In the third element, the organization is described as consisting of two interacting yet distinct sub-elements; the characteristics of the organization itself and the manager of the implementation process. Two factors relative to the nature of organizational characteristics are described as influential relative to the implementation process; the openness and the adaptability. The functions of these identified organizational characteristics are to adapt, to maintain openness, to establish temporary systems, and to facilitate problem solving. The functions of the managerial sub-elements of the organization are planning, organizing, evaluating and encouraging implementation. Effective management is described as exhibiting leadership, knowledge, and a positive attitude.

In describing the nature of curriculum implementation, D. Common (1978) defined a curriculum implementation plan as "...an attempt to predict interactions among the implementation elements necessary for the achievement of implementation goals" (p.233). As such, constant redefinition of plans occurs during the implementation process.

In an effort to clarify the nature of the reaction, D. Common (1978) utilizes the diagram shown in Figure 16. Rather than clarifying the relationships the diagram seems to obscure the nature of the



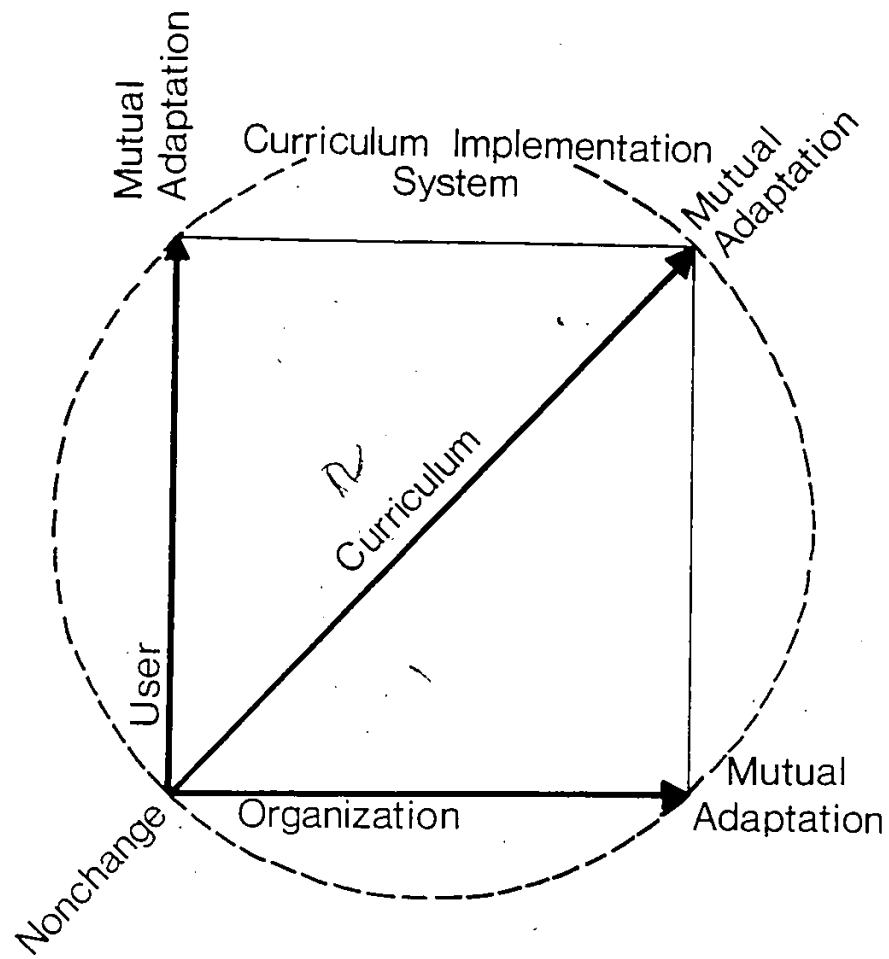


Figure 16: Theoretical model for curriculum implementation (D. Common, 1978, p. 241)

relationships described by suggesting that the curriculum can be considered as the relationship between the organization and the users. An alternative diagram might more clearly depict the nature of the relationship described. (Figure 17).

The actual change occurring in the curriculum, in the organization and in the user could then be described by a trinomial system. The point at the intersect of the three axes (O,O,O) represents no change, while (n,n,n,) represents mutual adaptation among all three elements.

The D. Common (1978) model provides a rigorous representation of the curriculum process. It is intended only as "...an interpretation framework, it makes no pretense to have direct predictive significance." (p. 268) It is also not intended to be inclusive of all factors influencing the implementation process, as evidenced by its lack of attention to the macro socio-political influences identified by Fullan and Pömfret (1977). D. Common (1978) concluded the report of her study with the statement:

More pervasive empirical and theoretical research is necessary for curriculum implementation knowledge to advance along the avenue of understanding in order to achieve the goal of intellectual maturity. (p. 276)

The relevance of the effects of socio-cultural and political factors on the implementation process is demonstrated by Harlacher and Gollattscheck (1978) in their description of the implementation of community-based education. An assessment of efforts described in

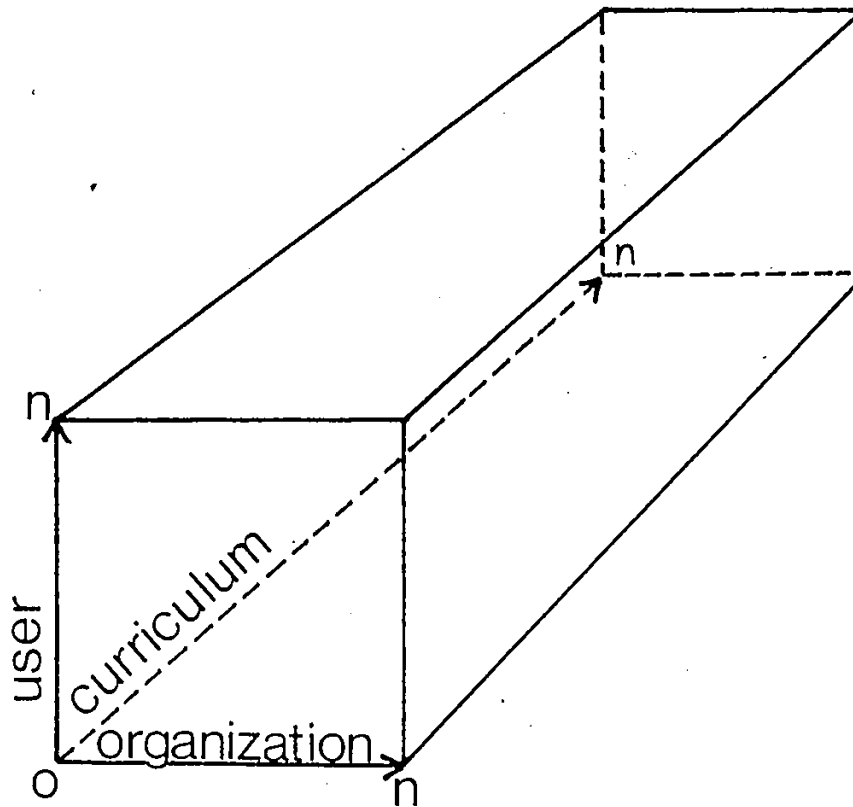


Figure 17: Relationship among elements as described by D. Common (1978).

their case study leads to the conclusion that educational innovations have impact on educational factors, economic factors, socio-cultural factors, political factors and technological factors and are in turn influenced by them. The authors describe four "communities" which frequently influence the implementation of educational changes: individuals and groups, interest-based groups, geographic-based groups, and aggregates of people (p. 81). The findings of major data sources from 1978 are presented in Figure 18.

1979 Data Sources

R. Common (1979), in assessing the relationship between the degree of implementation of an elementary science curriculum in Manitoba schools and the school management patterns, concludes that significant relationships exist between teachers' perceptions of school management patterns and the extent of curriculum implementation. Utilizing the CBAM and Likert instrumentation as measurement devices, he concludes that:

In elementary schools with an innovative curriculum developed externally to the user group, teachers in high participatory management pattern schools...exhibit a higher level of implementation...than teachers in more authoritarian management pattern schools. (p 159)

<u>Questions</u>	<u>D. Common (1978)</u>	<u>Harlacher and Gollattscheck (1978)</u>
1. Mode of Implementation	- planning for interaction among elements relative to the innovation	- mutually adaptive process
2. Elements of Implementation	- curriculum - complexity - clarity - practicality - user - teacher - manager - organization - manager - structure	- innovation - user - organization
3. Relationship of Implementation to other phases of change	- not addressed	- not addressed
4. External factors physical aspects influencing Implementation	- not addressed	- economic factors - socio-cultural factors - individuals - interest groups - geographic group - aggregates of people - technological factors

Figure 18: Summary of information relative to research questions from major data sources, 1978

The importance of the principal in leadership and development of staff relations relative to curriculum implementation necessitates its consideration as a primary function. Interaction and communication with staff relative to curriculum implementation are identified as two ways in which the priority could be manifested.

R. Common (1979) provides further support for the University of Texas researchers' contention that "...some individuals within an institution could and did vary markedly from the group" relative to their level of implementation. This implies that implementation efforts must be planned for individual users. It also extends knowledge of the management aspect of the model by specifying characteristics of the principal's role.

The assertion by the Rand Corporation Studies and the Peterborough Project that adoption cannot be equated with implementation is also given support by the R. Common (1979) study. Thirty-six percent of the teachers sampled were nonusers, in spite of the fact that the curriculum had been considered to be implemented by the Ministry for two years in most schools and up to four years in others.

In the same year, Ellis (1979) tested the validity of the degree of implementation Construct by exploring the relationships between different approaches to measuring the degree of implementation of Intermediate Science Curriculum Study (ISCS) materials in seventh grade classrooms. He suggests that the implementation process is cyclical proceeding from non use, to adaptation, to use, to equilibrium

of use, to improvement of use, and back to non use. He maintained that there is an identifiable point beyond which mutual adaptation becomes innovation: "...at the point where the improvements surpass the critical level of defining attributes, the innovation is no longer considered to be part of the system." (p.13)

Ellis (1979) defines implementation as "...the management of a subset of all possible interactions of an individual with his environment with the intent of educating." (p.8) Management is facilitated by user participation in both the development and implementation processes. This study employed seven distinct measures to determine degree of implementation: the LOU, a student perception of use questionnaire, a document analysis questionnaire, and ISCS achievement test, the Iowa Test of Basic Skills and an ISCS Attitude questionnaire. Ellis (1979) maintains that the instruments provided measures of implementation reflecting the process or mutual adaptation approach and the fidelity approach. The major conclusion from the study is that the "Fidelity Approach and Process Approach are roughly measuring the same construct, however, the lack of discrimination between the higher Levels of Use lessens the construct validation from the concurrent validation approach". (p.92)

The methodology utilized in the study may be criticized on several dimensions including the consideration of only part of the components, characteristics of ISCS, the equating of student achievement with evidence of the degree of implementation of the curriculum, and the utilization of teachers as the unit of analysis when the LOU is designed

for use with the school as the unit of analysis. The study does contribute to the understanding of the nature of the curriculum implementation process, however, by contending that fidelity and mutual adaptation approaches to implementation may be more similar than they are generally considered to be. The study also raises the question of the point at which curriculum implementation becomes curriculum innovation, particularly with respect to CBAM. The R. Common (1979) and Ellis (1979) studies are summarized in Figure 19.

1980 Data Sources

In describing the implementation of an Individually Guided Education (IGE) programme in six New Jersey schools, Bucko (1980) posited three questions:

1. Are successful IGE schools characterized by their involvement in the decision to implement the curriculum?
2. Are successful IGE schools characterized by a change agent actively involved in the decision to implement the curriculum?
3. Are successful IGE schools characterized by senior administrators in their system supportive of the IGE curriculum?

He suggests that the findings indicate that successful IGE schools were characterized by a high degree of implementation of the IGE curriculum. Each question received an affirmative answer. In answering the third question, Bucko (1980) concluded that in some

Questions

1. Mode of implementation

D.Common (1979)

- developmental process influenced by organizational rate varies in individuals

Ellis (1979)

- cyclic process with four stages:
 - non-use
 - adaptation
 - equilibrium
 - improvement
- management of individual environment

2. Elements of implementation

- curricula
- user
- administrator
- organization
 - climate
 - structure

- manager
- user
- student
- school
- innovation

3. Relationship of implementation to other phases of change

- number of decision-making levels between development and implementation important

- management of implementation is easier when users are involved in the development

4. External factors influencing implementation

- not addressed

- not addressed

Figure 19: Summary of information relative to research questions from major data sources, 1979

schools the principal was the supportive supervisor while in others the superintendent was the key administrator.

Bucko (1980) contends that adequate training for the staff and the provision of adequate time to complete training were crucial to effective implementation. He distinguishes between commitment to IGE and the general willingness to change and suggests that while the latter is necessary for implementation it was real commitment to the IGE materials which most influenced the implementation. A further conclusion indicates that the environment was compatible to the innovation in the successful IGE schools. By a compatible environment Bucko (1980) refers to factors in the school system such as physical facilities, and to the nature of the community into which the IGE was being introduced. IGE was more fully implemented in less economically affluent communities, adding further support for the contention that socio-political factors influence the degree of implementation of curricula (Fullan and Pomfret, 1977; Harlacker and Gallattscheck, 1978).

Grossnickle (1980) employed a case study approach in studying the factors which influenced school-centered curriculum reform. He concludes that ten factors significantly influence the implementation process: the availability of the innovative curriculum, the quality of the innovation, the cost of the innovation, the communicability of the innovation, the organizational climate of the school, the availability of a change consultant, training in regard to utilization of the innovation, leadership and sponsorship particularly by the principal, and the

specific implementation strategies used. These factors are consistent with those suggested by Fullan and Pomfret (1977). The political processes involved are clarified in the model which emerged from the study. In the model the curriculum change process is described as including six distinct stages:

1. Identification of the need to change. This decision was precipitated from the interaction of school board members, parents, federal government policy, state government policy, students, principals, the superintendent and teachers. This interaction results in the adoption and agreement to new curriculum goals by each group.
2. Teachers, students, administrators and an external change agent were involved in developing a specific plan for the implementation for the goals.
3. The plan was adopted and implementation began.
4. The reactions of students, parents, teachers, and administrators necessitated the modification of the implementation procedures.
5. The modified plan was administered.
6. A summative evaluation was planned in terms of teacher performance, administrator assessment of success, and student satisfaction and performance. School board members, parents and the outside agencies demanded access to the evaluation efforts and suggested further goal reform, (p.72).

Grossnickle (1980) concludes that in planning to implement a curriculum a manager must address the need to communicate the intent and nature of the innovation to all of the persons affected, directly and indirectly, by the change. This communication must be related to the need for change and the benefits to be expected from it. Recognition must also be given that the implementation requires extra time and effort on the part of all people involved in the change. The users of the curriculum require skills and time to build confidence in the curriculum. The users include students, teachers, parents, administrators, and the school board. Grossnickle (1980) emphasizes that the curriculum manager must have knowledge of the evaluation process and the ability to interpret the results of evaluation correctly. Further, the manager must constantly monitor the change process with the intent of providing intervention strategies while being aware of the need to document for accountability.

From this study it is apparent that factors external to the system normally identified as the implementation system do, in fact, influence the process. The mutual adaptation perspective of implementation is already evident and must be considered from a larger contextual perspective.

Lane (1980) also included the larger context in which the implementation process occurred when she assessed the implementation of an elementary Energy Curriculum in Indiana school districts. Included in her typology of contextual factors are principal support, colleague support, school location and socioeconomic factors. The sample in the

study was small and, consequently, conclusions from the study are tentative.

Log sheets and interviews were utilized in data collection. Findings indicated that teachers had separate and distinct implementation patterns. This is consistent with findings reported in earlier studies.

Lane (1980) concludes that teachers actually implemented the curriculum in a piecemeal manner. Sections of the curriculum supported with moderate numbers of lessons and activities are generally utilized before more complex sections. Again, the finding adds support to earlier suggestions that relate the degree of implementation to the complexity of the innovation.

Another conclusion from the study is that teachers considered student interest and needs, community happenings and their own knowledge and interests in deciding which parts of a curriculum they would actually implement. This implies that mutual adaptation is influenced by more than the three elements suggested by D. Common (1978) and others. Contextual factors may hinder inclusiveness and, therefore, influence the degree of implementation from a fidelity perspective. Lane (1980) states that her sample indicates the existence of three distinct types of implementers which she refers to as redesigners, believers, and experimenters. Redesigners are inner-directed; they prefer decentralized decision-making, a laissez-faire leadership style, and are largely willing to be autonomous. Believers are principally other-directed, prefer

centralized decision-making, authoritarian leaders and are conformers. Experimenters exhibit views which incorporate some of those held by believers and some held by redesigners. It seems reasonable to suggest that redesigners implement in a mutually adaptive fashion and that believers implement in a fidelity mode. In essence, teacher perceptions are identified as affecting the type and degree of implementation.

Hughes and Keith (1980) were also concerned with teacher perceptions in their investigation of the degree of implementation of an innovative science curriculum in Nova Scotia schools. Reporting that the "...lack of concern for implementation currently is the crucial impediment to improving program operations, policy analysis, and experimentation..." (p.43) in schools, they examined the extent to which teacher perceptions of the curriculum's relative advantage, compatibility, complexity, trialability, and observability influenced implementation. Utilizing the Classroom Observation Rating Form (CORF) employed by Ashley and Butts (1970) and their own Perception of Innovation Scale with a sample of 30 teachers, they found that all teachers perceived themselves as implementers but that in reality a third of the teachers were non-implementers, 43% were partial implementers and only about 20% were high implementers. Since the curriculum was adopted for use at the same time in all districts represented by the sample, and since all teachers had been subjected to the same training opportunities, this finding supports the individuality of the implementation process identified by R. Common (1979) and

others.

Four attributes of the innovation were identified by the teachers to be positively and significantly correlated with the degree of implementation. In decreasing order of significance they were observability, compatibility, relative advantage, and trialability. Complexity was not significantly related to the degree of implementation. The degree of causal dependence among the variables was not investigated. The findings of the study are generally supportive of the literature suggesting a relationship between potential adopters' perceptions of the innovation and its effective implementation. The factors responsible for teacher perceptions are not investigated and the implementation process is considered in isolation from the larger social context.

Large scale curricular reforms in Thailand are the focus of a number of recent doctoral dissertations at the University of Pittsburg. One of these addressed the socio-culture factors affecting the implementation of the intended curricular changes (Senarith, 1980). Utilizing a rationale based largely on the Rand Corporation studies and a study by Zaltman et. al. (1977), Senarith (1980) suggests that: "The larger the scale of the change program the more prominent the role of the socio-economic and political factors". (p.35). Two researcher-developed questionnaires, the Curriculum Implementation Questionnaire for Teachers (CIQT) and the Curriculum Implementation Questionnaire for Principals (CIQP), were utilized with 423 teachers and principals in 134 schools in an effort to assess the degree of

implementation of the curriculum innovations and to isolate factors which influence the process.

An examination of the instrument items indicates that Senarith (1980), although differentiating between the implementation stage of change and the innovative stage, made no distinction in his assessment. He equated innovativeness with willingness to implement. Findings from the study indicate that the curriculum innovations were moderately implemented. Teacher characteristics such as attitude, commitment, capability, understanding, age and educational background influenced the degree to which the new curriculum was implemented.

Senarith (1980) concludes that the characteristics of the new curriculum influenced the teachers' capacity to understand the desired change. The limited effect of complexity of the curriculum on implementation provides additional support for the Hughes and Keith (1980) findings. The quality of inservice training appears to be more influential than the quantity but no suggestion is made relative to the most effective timing of these activities.

The individual school principal emerges as a significant factor influencing teacher commitment to the curriculum being implemented. Organizational climate is reported as indirectly related to the degree of implementation. These suggestions are supportive of the R. Common (1979) Manitoba study.

Seven other factors are identified as influencing the degree of curriculum implementation in the study: school size, location of school, structural arrangements within schools, the age of the

principal, the experience the principal has in implementing curricula, principal commitment, and the diversity of student readiness perceived by teachers.

Utilizing the elements suggested by D. Common (1978) as a framework, Dow and Whitehead (1980) investigated the extent to which teachers in one Ontario school board district were implementing an innovative physical education curriculum. Assuming that the implementation would not be complete, the investigators attempted to identify the concerns teachers had relative to the curriculum and the role and concerns of principals and vice-principals relative to the implementation process.

Level of use of the curriculum was determined utilizing a teacher questionnaire and a structured interview format developed chiefly from the CBAM. Teacher, principal and vice-principal concerns about the curriculum were assessed utilizing the researcher-developed Barriers to Implementation Questionnaires (BIQ) which reflected the model of implementation developed by D. Common (1978). The BIQ for principals and vice-principals did not contain all the items in the BIQ for teachers but the majority of items were common to both. The role of the principal in implementation was assessed through directed interviews.

Findings of the research indicate that a generally low level of implementation existed. In discussing this finding the researchers stated that teachers were at different levels of implementation, a conclusion consistent with other research utilizing the CBAM concepts. Much of the variance may have resulted from the fact that

"...individuals have their own rate of growth within this process" (p.92). Some of the variance may have been due to inconsistency in exposure to the curriculum in question.

Teachers identified 20 major barriers to implementation of the curriculum. Two of the barriers were related to the nature of the document itself: its expectations relative to materials to be presented to students and the lack of suggestions relative to student evaluation. Six items were perceived as barriers relative to the teachers themselves: insufficient knowledge of the guidelines, commitment to implementation, too little opportunity to communicate with peers relative to the curriculum, inadequate opportunity to learn about the curriculum, insufficient opportunity to provide feedback relative to the guideline, and insufficient specific inservice relative to the curriculum. Of the 12 barriers relative to the organization itself, five are related to the role of the principal and vice-principal in the implementation process. These five include: the lack of support, lack of clarity in implementation procedures, unclear expectations relative to implementation, a confused view of the principal's role, and the perception that the principal and vice-principal lack knowledge about the innovation. The other barriers in this category are concerned with communication among central office, principals, and teachers, motivation to implement, time for implementation and resource support. The comparison of barriers perceived by teachers who were better implementers with those not implementing might have provided some interesting conclusions.

In the discussion of the implications of the data from principals and vice-principals, Dow and Whitehead (1980) state "there is considerable agreement today that the principal is the person responsible for designing, implementing and evaluating changes in the instructional programme of the school." (p.73)

Principals also identified 20 barriers to implementation. There are some differences between the barriers perceived by teachers and those perceived by principals. Relative to the curriculum document the principals identified the physical make-up of the guideline as a barrier as well as the lack of student evaluation techniques. With respect to the user, identified as teacher in the principal's BIQ, lack of knowledge of the curriculum, unclear expectations, poor communication with resource personnel and other teachers, insufficient time to implement, and to plan to implement, lack of skill and commitment, and inadequate opportunity to learn about the guide are identified as the major barriers. The majority of barriers related to the organization identified by principals focus on the superintendent and relate to knowledge, role clarity, support, communication, resources, and specific procedures for implementation.

The study indicates that the elements of the role depicted for principals from early studies of implementation (communicator, resource provider, facilitator, consultant and supervisor) were not of equal importance to the principals surveyed. Principals also varied in their perception of the importance of these elements. Although the researchers do present a hierarchy, the application of a weighting

factor to their data suggests a slightly different emphasis relative to the ordering of these factors. From greatest to least involvement, the principals perceived themselves as resource providers and communicators, facilitators, supervisors, then consultants. This prioritization is interesting in light of the fact that the role of supporter is so frequently cited in the literature (R. Common, 1979, Leithwood et. al, 1976, among others).

The Dow and Whitehead (1980) study represents a decisive step in the direction of the translation of much of what had been suggested relative to the implementation process into factors to be considered in planning for implementation. Their 1981 study provides more generalized data relative to the nature of barriers to implementation. Summaries of their 1980 study and other major data sources from the same year are presented in Figure 20.

1981 Data Sources

In their second major study relative to barriers to implementation, Dow and Whitehead (1981) surveyed 229 teachers, 196 principals, and 44 consultants from across Ontario utilizing the BIQ employed in their 1980 study and a third and similar questionnaire designed specifically for consultants. Respondents were asked to consider a curriculum that had been adopted at least a year previously, to identify the specific curriculum and to respond to the BIQ with that curriculum in mind. Major barriers identified by each group are summarized in Figure 21.

Generally respondents were satisfied with the nature of the

Questions	Bucko (1980)	Grossnickle (1980)	Lane (1980)	Hughes Kalth
1. Mode of Implementation	- training process for users	- mutual adaptation process - facilitated and effected by communication	- piecemeal process leading to eventual adaptation - characterized by three types of user: - redesigners - experimenters - believers	- a p - focu - ach - inte - curr - oper
2. Elements of Implementation	- trainers - material - training - physical facilities - innovation	- curriculum: - availability - quality - cost - communicability - administrators - organizational climate - change consultant - principal sponsorship - strategies - students - teachers - parents - time - curriculum manager	- principal - innovation - teachers - organization	- teach - inno - - - - stud - orge
3. Relationship of Implementation to other phases of change	- interaction among need identification, production, implementation, and evaluation phases of curriculum change	- not addressed	- need for conscious consideration of implementation in development process	- mass - imp - dete - of - eva
4. External factors Influencing Implementation	- school board members - parents - Federal Government Policy - state policy	- socio-economic factors - professional support	- not addressed	- poli - soc - geog

* This summary also represents information from Dow and Whitehead

Figure 20:

Summary of information relative to research questions from major data sources, 1980.

Lane (1980)	Hughes and Keith (1980)	Senarath (1980)	Dow and Whitehead (1980)*
- piecemeal process leading to eventual adaptation - characterized by three types of user: - redesigners - experimenters - believers	- a planned process focused on achieving the interests of curriculum developers	- planned process with fidelity perspective	- management process responsible for anticipating and dealing with possible barriers
- principal - innovation - teachers - organization	- teachers - innovation - relative advantage - observability - trialability - compatibility - students - organization	- teacher - administrator - organizational factors - climate - structure - size - innovation - training - principal - age - experience - commitment - student readiness	- organization - user: - teacher - principal/vice-principal - consultant - innovation - time - communication - strategies - resources - commitment - rewards - barriers
- need for conscious consideration of implementation in development process	- massiveness of change implied in innovation determines complexity of implementation and evaluation	- not addressed	
- not addressed	- political stability - socio-economic factors - geographical location	- not addressed	

presents information from Dow and Whitehead (1981).

relative to research questions
, 1980.

MAJOR BARRIERS TO CURRICULUM IMPLEMENTATION
AS PERCEIVED BY GROUPS

TEACHERS	PRINCIPALS	CONSULTANTS/COORDINATORS
1. Principal's role in implementation is not clearly defined	1. Principals have inadequate information about guidelines prior to implementation	1. There is inadequate time for teachers to plan for implementation.
2. There are inadequate workshops and in-service	2. There is inadequate communication between teachers and resource persons related to the guideline.	2. The school's organization is not flexible enough to accommodate implementation.
3. The guidelines contain inadequate suggestions for student evaluation.	3. There are insufficient opportunities for teachers to confer with other teachers regarding the implementation of the guideline.	3. Principals have inadequate knowledge of the guideline.
4. Teachers have inadequate opportunity to provide feedback.	4. Inadequate time is provided to plan for implementation.	4. Resource personnel have inadequate opportunity for face-to-face communication with teachers related to the guidelines.
5. Central office resource personnel provide too little motivation for teachers.	5. There is inadequate communication among school board office personnel, principals and teachers related to the guideline.	5. Teachers have insufficient opportunity to increase their knowledge of the guideline.

(cont.)

Figure 21: Barriers to Implementation
(Dow and Whitehead, 1981, p.40-41)

MAJOR BARRIERS TO CURRICULUM IMPLEMENTATION
AS PERCEIVED BY GROUPS

TEACHERS	PRINCIPALS	CONSULTANTS/COORDINATORS
6. There is inadequate communication between central office personnel, principals and teachers related to the guideline.	6. Insufficient resources are provided by the board.	6. Guidelines have inadequate suggestions for student evaluation.
7. Teachers have insufficient opportunity to learn about the guideline.	7. Insufficient workshops and in-service opportunities are available for teachers related to the guideline.	7. The consultant/co-ordinator role in curriculum implementation is not clearly defined.
8. Time is not provided for teachers to plan for implementation.	8. There is inadequate communication between principals and superintendents regarding implementation.	8. The principal's role in curriculum implementation is not clearly defined.
9. There is inadequate communication between the principal and teaching staff related to the guideline and its implementation.	9. The superintendent's role in curriculum implementation is not clearly defined.	9. There is insufficient communication among school board personnel, principals and teachers related to the guideline.
10. Insufficient resources are provided by the principal.	10. Implementation procedures are not specific and clearly outlined.	10. Principals do not articulate their expectations in regard to implementation.

Figure 21 (cont.): Barriers to Implementation
(Dow and Whitehead, 1981, p.40-41)

curricula they identified with the exception of the provision of recommendations for student evaluation. Major problems appear in role definitions for those involved in the implementation process. Communication about the innovation is another major problem area. Another consistently identified problem is in relation to teacher opportunity to participate in the curriculum development process. The need for careful planning to ensure that adequate resources are available for the implementation process is another area of concern. These resources include the time to plan for implementation.

Dow and Whitehead (1981) make no attempt to compare teacher, principal and consultant concerns about implementation relative to subject areas, but in examining the results of the 1980 and 1981 study, it is apparent that the major barriers in both studies centered around role clarity, communication, resource support, and commitment. Flexibility and rewards for implementing are of less concern.

Banathy (1981) suggested requirements for a curriculum change system which might be considered to respond to some of the barriers identified by Dow and Whitehead (1980, 1981). His five requirements are identified:

1. Strategies relative to the specific curriculum for its implementation in school settings based on (a) user needs, (b) information and materials, (c) choices and alternatives, (d) the adoption, installation, and use of the curriculum
2. Strategies relative to several levels including (a) societal, (b) institutional, (c) managerial, (d) instructional, and (e)

experimental.

3. Planned interaction must consider the (a) environment and societal/community context, (b) curriculum goals, (c) program functions, (d) program structures and components, and (e) processes applied to these interactions.
4. Compatible interfaces between the real world and the ideal curriculum image.
5. Three basic functions: (a) a definitional system which identifies the characteristics of the educational system and identifies the need for change, (b) a design subsystem that provides a plan for implementation and (c) an implementation/managerial system to carry out the planned change. In the implementation system key personnel must be involved including parents, teachers, principals, district administrators and school board members. Resources, training and vitality are other concerns.

This view indicates that the implementation phase of curriculum change, though distinct from innovation, must be considered as related to it. The emphasis placed on responsiveness to the larger context of the change process is more specific than other authors' prescriptions. The requirements do not include the specification process.

In an attempt to clarify the state of the art relative to curriculum implementation in Ontario, Fullan and Park (1981) utilized two main sources of information: research literature and an examination of current practice in six boards throughout the Province. Their basic

premise reflected a management perspective in regard to the implementation process. "Implementation depends solely on what people ... do and don't do".(p.5) They maintained that during the implementation process at least three types of changes must be effected: those relative to materials, teaching strategies, and beliefs — all of which are influenced by the philosophies, assumptions or beliefs about education housed in the novel curriculum.

A more complete definition of implementation is stated: "Implementation consists of alterations from existing practice to some new or revised practice (potentially involving materials, teaching and beliefs) in order to achieve certain desired student outcomes." (p.10)

Twelve factors are identified as affecting implementation (Figure 22). These are essentially those identified by Fullan and Pomfret (1977).

Implementation is considered to be a learning process involving resocialization of people over time. Implied in the process is the expectation that the innovation is altered during the implementation. Because of the time span involved in the implementation, management procedures must be addressed continuously throughout the process. Six groups are identified as targets for management planning: teachers, principals, trustees, parents and students, board administrators and groups external to the board such as ministry, teacher federations, and faculties of education.

Fullan and Park (1981) identify a discrepancy between implementation procedures as intended by policy makers and as

Factors Affecting Implementation

A. CHARACTERISTICS OF THE INNOVATION OR REVISION

1. Need for the change
2. Clarity, complexity of the change
3. Quality and availability of materials

B. CHARACTERISTICS AT THE SCHOOL SYSTEM LEVEL

4. History of innovative attempts
5. Expectations and training for principals
6. Teacher input and professional development
(in-service technical assistance)
7. Board and community support
8. Time line and monitoring
9. Overload

C. CHARACTERISTICS AT THE SCHOOL LEVEL

10. Principal's actions
11. Teacher/teacher relations and actions

D. FACTORS EXTERNAL TO THE SCHOOL SYSTEM

12. Role of the Ministry of Education and
other educational agencies.

Figure 22: Factors affecting Implementation
(Fullan and Park, 1981, p.14)

perceived by implementers. From the policy-maker's perspective clearly defined policy is generated at the Ministerial level, interpreted and supported by teacher federations, local boards, the media, and faculties of education; modified by principals; and then it remains for teachers to try to cope with a confused, overwhelming body of information.

Ten factors are identified as influencing the implementation process: the release of multiple guidelines; board and community support, time line and monitoring system, clarity of need for change, quality and availability of materials, the support and role of the principal, consultant role and support, quality and amount of in-service for teacher, teacher/teacher interaction, and availability and use of external resources. These factors are consistent with those identified by Dow and Whitehead (1980, 1981).

Fullan and Park (1981) conclude that implementation is more difficult in some boards than others due to a variety of staffing and socio-economic factors. They suggest that differences exist from school to school in terms of readiness for implementation again due to a variety of factors including in-school resources and leadership. Implementation appears, then, to be a contingent process. Figure 23 presents a summary of this and other major data sources from 1981.

Summary

The intent of the exploratory phase of the study reported in this chapter is to describe data from major data sources which address the

<u>Questions</u>	<u>Banathy (1981)</u>	<u>Fullan and Park (1981)</u>
1. Mode of Implementation	- management process with fidelity goals	- socializing process - alteration of existing practice in the direction of new practice.
2. Elements of Implementation	- strategies - user - resources - students - organization - parents - teachers - principal - school board - training - district administrators - resources	- innovation - need - clarity/complexity - quality/availability - system - prehistory - training - in-service/professional development - board/community support - time - monitoring - overload - school - principal action - teacher/teacher action - consultant - external factors
3. Relationship of Implementation to other phases of change	- Implementation must be considered in relation to other stages of change	- nature of policy in development phase affects effectiveness of translation into implementation.
4. External factors influencing Implementation	- societal expectations - community - interface between real world and	- make up of district - community support - Ministry of Education - educational agencies

Figure: 23

Summary of information relative to research questions from major data sources, 1981

following questions:

1. How does curriculum implementation occur in school?
2. What are the elements of curriculum implementation in schools?
3. How is the implementation of curriculum in schools affected by its being part of the total curriculum change process?
4. How is the implementation of curriculum in schools affected by factors external to the school system responsible for the implementation?

Data sources were presented in chronological order to prevent formerly developed conceptual schemes from biasing description. Critical analysis was not the objective of the initial phase of the study.

In Chapter Four the information culled from the major data sources is subjected to analysis. Critical analysis is integral to the classification phase in the methodology employed in this investigation.

Chapter Four
Analysis and Classification

Two phases of the interpretative-theoretical methodology are presented in this chapter, analysis and classification. Analysis involves the systematic juxtaposing of information from major data sources in an effort to suggest answers to the four research questions posed in the exploration phase of the study:

1. How does curriculum implementation occur in schools?
2. What are the elements of curriculum implementation in schools?
3. How is the implementation of curriculum in schools affected by being part of the total curriculum change process?
4. How is the implementation of curriculum in schools affected by factors external to the system responsible for the implementation?

Answers to these questions are presented in the first section of the chapter. Subsections relate to each research question.

The second section of the chapter presents the classification of information extracted from the analysis of major data sources. The purpose of this third phase of the interpretative-theoretical methodology is both to organize and to clarify thought about the phenomenon curriculum implementation. Three distinct but interrelated procedures are involved in this phase; namely, analyzing, abstracting, and generalizing. These activities provide the components of the theoretical model which emerge from the research. The subsections in this part of the chapter correspond to the research questions. A

chapter summary constitutes the third section of the chapter.

Analysis of Data Relative to Research Questions

The answers provided by the major data sources for each research question are described below. Frequencies relative to factors identified by major data sources are presented in Figures 24, 25, 26, and 27. These frequencies were determined by a count of the number of studies making reference to the factor in question.

Mode of Implementation

Curriculum implementation is a management process which may be focused on the use of the curriculum in a manner consistent with the intents of the developer (a fidelity approach) the use of the curriculum in a manner somewhat modified to suit the situation (a mutual adaptation approach) or toward either a fidelity or a mutual adaptation approach. As a rational process, curriculum implementation requires the establishment of a temporary system which has as its purpose the alteration of existing practice toward new practice.

Successful implementation may be identified by specifiable behavioral traits either in teachers, in the classroom environment, or in students. It is a learning process in which teachers develop concerns and abilities and as such is a revisionary process rather than a revolutionary process. Because curriculum implementation involves learning to change, it can be expected to occur in individuals at differing rates.

The individual ultimately responsible for the curriculum implementation system is viewed as a strategy planner for intervention, remediation, problem solving, participative decision making, discrepancy reduction, and socialization of potential users. Factors identified as essential to the implementation process include effective communication systems, carefully planned and timed workshops and in-service sessions, the means of surmounting conceptual and perceptual obstacles to use, an effective incentive system, and a good organizational climate in which the implementation can occur. Each of these factors facilitates the training process. Implementation, then, may be viewed as a collaborative system of interaction representative of organizational effort toward goals of the curriculum policy of the school system in which it is occurring. As such, it is influenced by factors from within the school and factors outside the school.

There is more than one possible outcome resulting from the effort to implement. These include non-implementation, co-optation, and actual implementation. Co-optation is distinct from mutual adaptation in that co-optation is a verbal implementation not followed or accompanied by change in classroom practice reflective of implementation. Mutual adaptation represents actual implementation in which the curriculum is somewhat altered to fit the situation, but which involves actual change in behavior in the requisite direction. Fidelity, on the other hand, is actual implementation in the direction specified or intended by the curriculum developers. The larger the actual change in behavior demanded by the innovation, the more likely that mutual

adaptation will occur rather than fidelity.

Although terminology varies among studies, the implementation process is viewed as consisting of more than one stage by most of the major data sources. Adoption is considered by most to be the decision to implement which precedes actual implementation effort and use. This is followed by actual use in varying levels of completeness, and if the implementation process is complete, by an equilibrium stage in which the use is that desired by the curriculum implementation goals (either mutual adaptation or fidelity). A further phase of the total implementation is described as "impact" or "improvement" which involves the initiating of further curriculum change or renewal. The process may be considered, then, as generative of additional implementation in a cyclical or spiral manner. Figure 24 presents the frequencies of statements relative to the mode of curriculum implementation.

Elements of Implementation

An analysis of the major data sources revealed 97 elements or factors involved in the curriculum implementation process. These elements are presented in Figure 25 together with the frequency of major data sources in which they are identified. Many of these elements are not discrete and many appear to be more meaningful as clusters or categories. Such categorization is inappropriate in the analysis phase of the interpretative-theoretical methodology. It does, however, occur in the classification phase of the research.

Statement	Frequency
1. A discrepancy reduction approach facilitates implementation	3
2. A good organizational climate facilitates implementation	3
3. Actual implementation may occur	43
4. Adaption precedes implementation efforts and use	35
5. An effective incentive system is necessary for implementation	6
6. Co-optation may occur	3
7. Curriculum implementation is a management process	43
8. Curriculum implementation is a rational process	5
9. Curriculum implementation requires the establishment of a temporary system	3
10. Effective communication systems are crucial for implementation	5
11. Factors inside the school and outside the school influence implementation	6
12. Implementation involves organizational effort toward a goal	2
13. Implementation involves the socialization of potential users	3
14. Implementation is a collaborative system of interaction	2
	(cont.)

Figure 24: The mode of curriculum implementation
from the analysis of major data sources

Statement	Frequency
15. Implementation is a training process	5
16. Implementation is a learning process	5
17. Implementation is a revisionary process	1
18. Implementation is identified by specifiable behavioural traits	5
19. Implementation may have a fidelity approach	10
20. Implementation may have a mutual adaptation approach	12
21. Implementation may have a fidelity or a mutual adaptation approach	3
22. Implementation may include "Impact"	4
23. Implementation may involve curriculum improvement	2
24. Individuals implement at different rates	2
25. Means must be found to surmount conceptual and perceptual obstacles	1
26. Non-implementation is possible	43
27. Participative decision making is imperative for successful implementation	2
28. Problem-solving approaches should be used in implementation	3
29. Strategies for implementation include remediation	2
30. Successful implementation is recognized by change in classroom environment	2

(cont.)

Figure 24: The mode of curriculum implementation
(cont.) from the analysis of major data sources

Statement	Frequency
31. Successful Implementation is recognized by change in student behaviour	3
32. Successful Implementation is recognized by change in teacher behaviour	5
33. The Implementation process is cyclical	2
35. The person responsible for the curriculum Implementation system should plan the Intervention strategies	1
36. There is more than one outcome possible from Implementation efforts	43
37. Workshops and In-service sessions must be carefully timed and planned	5

Figure 24: The mode of curriculum Implementation
(cont.) from the analysis of major data sources

Element	Frequency
Administrative support	2
Administrators	13
Administrator roles	1
Barriers	4
Characteristics of adopting unit	2
Classroom	8
Commitment	2
Communication	5
Community support	1
Compliance	1
Constraints in school	1
Consultant	3
Critical mass	3
Curriculum availability	2
Curriculum clarity	3
Curriculum communicability	1
Curriculum complexity	1
Curriculum components	1
Curriculum cost	1
Curriculum dimensions	2
Curriculum flexibility	2
Curriculum manager	3
Curriculum observability	2
Curriculum practicality	2
Curriculum quality	2
Curriculum relative advantage	2
Decision-making levels	1

(cont.)

Figure 25: Elements of curriculum implementation from analysis of major data sources.

Element	Frequency
Document	43
Evaluation: formative	1
Evaluation: summative	1
External change agent	6
External factors	34
Feedback	3
Formal organization	10
Goals	1
History (pre-history)	2
Incentive/reward system	6
Informal organizations	1
In-service	5
Interactions	2
Macro socio-political units	1
Monitor	2
Motivation	1
Need for curriculum	1
Organizational climate	6
Organizational site	1
Overload	3
Parents	5
Peer pressure	2
Peer team building	1
Philosophy	2
Physical facilities	1
Pilot programs	3
Professional staff	1

(cont.)

Figure 25: Elements of curriculum implementation
(cont.) from analysis of major data sources.

<u>Element</u>	<u>Frequency</u>
Principal	14
Principal age	1
Principal commitment	3
Principal experience	1
Principal sponsorship	1
Resources	11
Role	4
School	13
School board	2
School setting	2
Space	3
Strategies	23
Structure	8
Students	19
Student readiness	1
Superintendent	1
Supervision	1
Supervisor	2
Teacher ability	1
Teacher-administrator relationships	1
Teacher attitudes	1
Teacher concerns	3
Teacher level	1
Teacher participation in decision-making	1
Teacher personality	1
Teacher philosophy	2

(cont.)

Figure 25: Elements of curriculum implementation
(cont.) from analysis of major data sources.

<u>Element</u>	<u>Frequency</u>
Teacher receptiveness to change	1
Teacher relations with school	1
Teacher role	1
Teacher skills	1
Teacher traits	1
Teacher training	2
Teacher understanding	1
Time	9
Trainers	1
Training	9
User	15
User internalizations	2
User skills	2
User knowledge	2
Workshops	2

Figure 25: Elements of curriculum implementation
(cont.) from analysis of major data sources.

Relationships to Other Phases of Curriculum Change

The curriculum change process as previously described consists of at least three distinct but interrelated stages. The first curriculum development/design stage involves actually planning for and construction of the curriculum document; curriculum implementation is the second stage, it involves putting the curriculum to work in the schools; the third, curriculum evaluation, is concerned with the assessment of stages one and two as well as the effectiveness of the curriculum change process as a whole. Eight of the major data sources refer to the interrelationships among the stages without specifying the nature of the relationships. Other major data sources provide conclusions which are useful in clarifying the relationships among the change phases. The comments are listed in Figure 26. They directly influence decisions made during the classification phase of this research and are reflected in the theoretical model which emerges in the explanation phase.

External Factors

There is some discrepancy in the views of major data sources relative to the nature of factors within and factors without the curriculum implementation system. Consequently, some of the items identified as elements in Figure 25 appear as external factors in Figure 27. Decisions relative to the placement of these factors within the theoretical model are made in the classification phase of the interpretative-theoretical methodology.

1. Curriculum Implementation is the translation of the developers' Intents into classroom practice.
2. Effective Implementation depends on a rational approach to curriculum development.
3. The nature of curriculum development influences the rate at which it will be implemented.
4. Curriculum development is in response to an identified need to implement change.
5. Curriculum development is in response to the perceived need by teachers for curriculum change.
6. Neither curriculum development nor curriculum implementation will occur if there is not an adequate climate for change.
7. Change is most effective if the same team is involved in development, implementation, and evaluation.
8. The nature of the curriculum developed influences the degree to which the curriculum is implemented.
10. The implementation of a curriculum necessitates the establishment of a temporary system.
11. The nature of the curriculum developed influences the nature of the collaborative system possible for its implementation.
12. The curriculum manager must be conscious of the need for liaison between the persons developing a curriculum and the system established for its implementation.
13. The nature of the development process determines the communicability of the curriculum produced.
14. Researchers who are curriculum developers should also be curriculum implementation managers.

Note: All frequencies 1.

(cont.)

Figure 26: Conclusions from major data sources relative to the relationships among stages of curriculum change.

15. The more specific the objectives of a curriculum are, the more readily it is implemented.
16. Curriculum developers should be involved in training for and supervision of the implementation process.
17. Organizational efforts in implementation provide organizational growth opportunities.
18. The development of a curriculum document can be a catalytic force for change in the organization.
19. The development, dissemination and entrenchment of curriculum documents are inseparable.
20. Both curriculum development and implementation are limited by the leadership available.
21. Implementation is the bridge between initiation and incorporation.
22. Implementation is influenced by the evaluation process expected.
23. Factors which influence development also influence implementation.
24. Development and implementation are related by the support provided by the developer during implementation.
25. Implementation to be effective must be followed by an evaluation of the total change process.
26. Local development processes influence implementation.
27. User involvement in development increases the probability of implementation.
28. The nature of the curriculum selection committee for non-locally developed curricula influences the translation of the developer's intents during implementation.
29. Curriculum change involves two levels of decision making in all phases, central and localized.

Note: All frequencies 1.

(cont.)

Figure 26: Conclusions from major data sources relative
(cont.) to the relationships among stages of
curriculum change.

30. The involvement of users for planning of implementation makes it more successful.
31. The involvement of users in adapting curricula makes implementation more successful.
32. The involvement of potential curriculum users in the development of curricula creates a feeling of "ownership" which influences implementation.
33. Involvement of researchers in the development of curricula provides increased credibility which in turn increases implementation.
34. The more flexible the curriculum document, the more likely it is to be implemented.
35. Curriculum developers should be curriculum monitors.
36. The number of decision-making levels between the curriculum developer and the curriculum users influences the degree of implementation.
37. The management of implementation of curricula is easier when users are involved in the development.
38. The general attitude to the change process influences the success of the implementation effort.
39. Curriculum developers should plan for implementation during the curriculum development process.
40. The massiveness of the change implied by the curriculum determines the complexity of implementation and evaluation plans needed.
41. The nature of policy in the curriculum development stage affects the effectiveness of efforts to translate it into instruction.

Note: All frequencies 1.

Figure 26: Conclusions from major data sources relative to the relationships among stages of curriculum change.

Figure 27 presents a summary of the factors external to the curriculum implementation system considered to influence it. Frequencies are also indicated.

In the first part of this chapter, information obtained from the major data sources relative to the four research questions is presented. Considerable divergence is reported relative to each question which is considered during the classification phase of the research.

The second section of the chapter presents the classification phase of the study. Information abstracted from major data sources during the analysis phase is categorized to provide the building blocks for the development of the theoretical model.

Classification

This phase of the interpretative-theoretical methodology involves the categorization of information resulting from the analysis of major data sources. Through categorization, the extracted data are organized to foster the understanding of the components of the implementation process necessary for model building. The four research questions serve as parameters in the categorization process. Each question is addressed separately in a subsection numbered to correspond to the research question number. A fifth subsection provides a summary of the classification phase.

Mode of Curriculum Implementation

In the examination of the major data sources, it becomes apparent

Factor	Frequency
Academic interaction	1
Aggregates of people	1
Board of education power	1
Change agents	4
Characteristics of school district	2
Community demands	5
Discrepancy between the "real world" and curriculum expectations	1
Educational agencies such as private industry	1
Experience with change	2
Factors contributing to teacher belief	1
Faculties of education	1
Federal agencies	2
Federal government policy	1
Field centres	2
Funding foundations	1
Geographical groups	1
Geographical location	1
Government policies	2
Individuals with a cause	1
Inertia	1
Interests groups	1
Interschool cooperation	1
Institutional setting	1
(cont.)	

Figure 27: External factors identified by major data sources as influencing curriculum implementation

Factor	Frequency
Legislation	1
Macro-level Influences	1
Media	2
Members of schools involved in change	1
Micro-level Influences	1
Ministry of Education policy	1
Organizational setting	2
Parents	2
Physical aspects of the classroom	1
Political contingencies	1
Political pressures for change	1
Professional organizations	1
Professional support	1
Release time available	1
Research	1
School board membership	1
Size by school district	1
Societal expectations	1
Socio-cultural factors	1
Socio-economic factors	1
Socio-political factors	1
Teacher teams	1
Teacher training	2
Teachers not implementing	1
Teacher organizations	1
Technological factors	1
University	1
Workshops	3

Figure 27: External factors identified by major data
(cont.) major data sources as influencing
curriculum implementation.

that curriculum implementation is a multi-staged process with several possible outcomes. Specifically, the decision to adopt a curriculum may be considered a first stage. At the time the decision to adopt is made, implementation is conceived in terms of adherence to the original intents of the developers (fidelity), modification of the systems components and/or the intents of the curriculum developers (mutual adaptation), or as fidelity or mutual adaptation. The goal for implementation can best be achieved through a clearly established plan characterized by rationality, the use of a collaborative temporary system, a view to facilitating learning resulting in a change of behavior of students, teachers or in classroom interaction, and organizational effort. Through the use of selected strategies, the party responsible for implementation, who could be called the curriculum manager, can foster movement of the potential users toward the second phase of implementation, early use, and toward the third phase, full use or renewal.

Strategies available to the curriculum manager include intervention, remediation, problem-solving, participative decision making, discrepancy reduction, workshops, in-service and socialization techniques. Factors which may intervene in the process include existing communication systems, incentive systems, organizational climate, existing in-school relationships and factors external to the implementation system.

Three outcomes are possible from the implementation effort. The implementation occurs, lip-service is paid to the implementation

although little or no change actually occurs, or there is no implementation. Figure 28 illustrates the process with its possible outcomes. This overview provides a focus for the classification of information relative to the other research questions.

Elements of Implementation

An examination of the 97 items that emerge from the major data sources as elements of curriculum implementation suggests that numerous categorical schemata are possible. Utilizing index cards, the factors were sorted until a set of categories emerged which included all of the factors. The frequencies were not used in this process but are indicative of the relative strength of support for each factor in each category. The criteria sufficiency of empirical evidence, generative powers, significance, power to convey meaning, originality, logical consistency and mutual exclusiveness described in Chapter Two were applied. The following categories appear most appropriate: the curriculum, people, strategies, the organization's endogenous (internal) intervening variables, and exogenous (external) intervening variables. Each category is discussed below.

Curriculum. The curriculum as a document houses 15 of the elements identified from the major data sources. Two of these, the philosophy of the document and the components of the document may be called anatomical attributes. The remaining 13 are considered to be ascribed attributes. These are availability, practicality, clarity, relative advantage, compatibility, trialability, observability, flexibility, complexity, quality, communicability, and cost. The

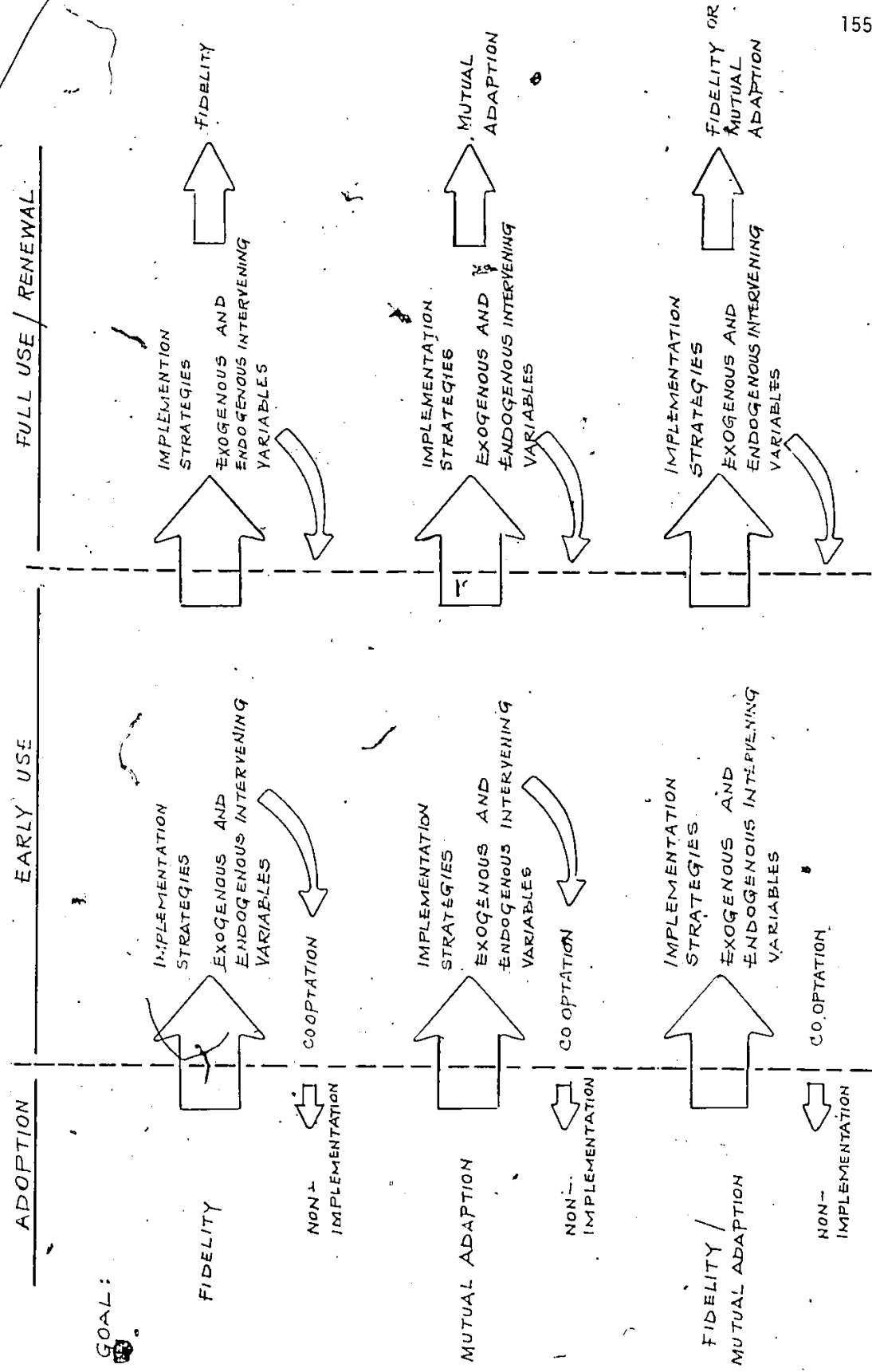


FIGURE 28. MODE OF CURRICULUM IMPLEMENTATION.

category, curriculum, then, has two sub-categories — curriculum anatomical attributes, and curriculum ascribed attributes. Anatomical attributes relate to the specific parts of the curriculum document. Ascribed attributes are those variables which may be perceived in varying ways by potential users of the curriculum. (See Figure 29.)

People. Fifteen people or groups of people are identifiable from the elements of curriculum implementation. These are teachers, principals, external change agents, administrators, students, supervisors, parents, users, professional staff, superintendents, monitors, curriculum managers, trainers, consultants, and school boards. An examination of this listing indicates that subcategories are possible. Clues for the division exist in the choice of terms utilized by the researchers in the major data sources.

Users represent one sub-category. Viewing the teacher as a user creates little difficulty. The student is considered a user by some of the major data sources, and as the ultimate receiver of the curriculum this is logical. The principal, on the other hand plays a boundary role. As the person responsible for instructional practice in the school, the principal is considered an administrator, but as the person responsible for the implementation of the document in the school, the principal must be considered a user. Some of the major data sources present the principal as a necessary supporter of the curriculum implementation effort while in others the principal is perceived as the first user of the curriculum in the school.

Several specific factors regarding teachers appear in the listing of elements of the curriculum implementation process. These include

Curriculum	
Anatomical Attributes	Ascribed Attributes
Philosophy Components	Availability Practicality Clarity Relative Advantage Compatibility Triability Observability Flexibility Complexity Quality Communicability Cost

Figure 29: The curriculum category.

teacher traits, concerns, philosophy, training, skills, understanding, ability, receptiveness to change, attitudes, commitment, motivation, and the level at which they teach. This group of factors may be simplified by considering them as representative of teacher knowledge, skills, and attitudes.

Four factors emerge relative to principals as being of major importance to curriculum implementation. These are age, experience, commitment, and sponsorship. These factors may be considered as affecting principal knowledge, skills and attitudes. In a similar manner student readiness, the only element emerging relative to students, may also be considered to encompass knowledge, skills, and attitudes.

Administrators form a second apparent subcategory of people in the curriculum implementation process. Three features of administrators emerge from the analysis of major data sources relative to administrators: support, commitment and motivation. Included in this category are supervisors, professional support staff, superintendents and consultants. These people are part of the administrative structure of the organization before, after and during the implementation process.

A third category of people involves those who are assigned the ultimate responsibility determining that the curriculum is implemented. In the major data sources these individuals include external change agents, specially appointed monitors, trainers, and curriculum managers. Curriculum managers are generally appointed from within the group of administrators and are concomitantly responsible as

monitors and trainers. The people in this category are part of the temporary system established for the sole purpose of implementing the curriculum. This category is referred to as the implementation system staff. External change agents are the exception not the rule in this category.

Two groups of people remain to be categorized — parents and the school board. The support of both of these groups is viewed as crucial for the effective implementation of a curriculum. The school board plays a boundary role in a manner similar to the principal. Although the school board is part of the administrative structure of the school system and must provide support for the implementation of the curriculum, it is an elected and/or appointed body responsible to the taxpayers including the parents. As such, it is often caught in a highly unstable political arena in which it must function in a manner which separates it from the internal workings of the school system.

Parents are cited in the major data sources as individuals concerned with the curriculum for individual students and as part of larger concern groups which exert obvious support or approval for a curriculum. In either role they are external to the curriculum implementation system, but influence it directly or indirectly. The parents/public and school board are categorized as exogenous people in relation to the curriculum implementation process. The chief characteristic of the exogenous people relative to the implementation process is the support they provide for it.

People, then, are categorized in four sub-categories; namely, users, administrators, implementation system staff, and exogenous

people. The attributes of these groups identified from the major data sources are summarized in Figure 30.

Organization. The third large category of elements of curriculum implementation is the organization. This refers to those parts of the school system which exist when the novel curriculum is being introduced. Included in this category are structure, space, climate, formal organization, informal organization, resources, history of change, frequency of change, reward/incentive systems, delineated roles and behavior, overall goals, decision-making levels, and physical facilities. It is within this organizational setting that adopting units are found and in which the need for a curriculum is perceived to exist. It is by the organization that the implementation system staff is appointed and from the organization that resources, support, and commitment are sought. It is also into the organization that the curriculum is being introduced.

Implementation Strategies. A fourth category of elements which emerges from the data may be referred to as implementation strategies. This category includes the specific means developed as part of the temporary implementation system to facilitate the use of the curriculum. Included in the strategies are workshops, in-service sessions, released time, appropriate timing of activities, feedback mechanisms, training sessions for key personnel, peer team building, pilot programs, goal setting, guaranteeing that the appropriate critical mass of individuals is involved in the curriculum change, and the establishment of formative and summative evaluation systems.

People			
Users	Administrators	Implementation System Staff	Exogenous
Principals Teachers Students	Supervisors Superintendents Professional support staff Consultants	Change agents Monitors (special) Trainers Curriculum managers	Parents/public School board

Figure 30: The people category.

Endogenous and Exogenous Intervening Variables. The

remaining elements identified from the major data sources may be described as intervening variables. The term, intervening, is used to indicate that the element modifies. These variables operate either from within the school system, endogenous intervening variables, or from outside the school system, exogenous intervening variables. The school system as an organization undergoing change is permeable to forces from outside and somewhat responsive to them as well as responsive to pressures from within the system. An intervening variable may be considered to catalyze the change effort. The verb catalyze is used in its scientific sense to mean that these factors may hasten the intended change, may slow the change, or may keep the change occurring at a constant rate.

The endogenous variables identified from the major data sources as existing for the curriculum implementation process include barriers relative to communication across decision-making levels, those which limit resources provision, normative peer pressure, interactions among people within the system, compliance, availability of time, overload, the perceived importance of the curriculum change, role clarity, and the ability and predisposition of users to change. All other items which emerge from the major data sources may be categorized as exogenous intervening variables including community support and macro socio-political units. These factors are sub-categorized later in this chapter in response to the fourth research question: How is the implementation of curriculum in schools affected by factors external to the system

responsible for implementation?

In summary, six categories of elements of curriculum implementation are generated from the major data sources. These are the curriculum, the people, the strategies, the organization, endogenous intervening variables, and exogenous intervening variables. Within the curriculum two sub-categories exist related to the anatomical attributes and the ascribed attributes respectively. The category of 'people' includes four sub-categories — users, administrators, implementation system staff, and exogenous people. The remaining categories contain no sub-categories to this point.

Relationship to Other Phases of Curriculum Change.

From the analysis of major data sources in this study, it becomes apparent that more is known about the influence of the development/design process on curriculum implementation than is known about the relationships which exist between curriculum implementation and curriculum evaluation. Two distinct categories of curriculum development/design emerge which directly influence the curriculum implementation process. The first category comprises those curricula developed/designed external to the adopting system. The second category of curricula is developed/designed locally in response to an identified local curriculum need. Many of the factors identified as important considerations in adopting a curriculum for use and as linking factors between the development/design phase and the plan for implementation are those identified as the ascribed attributes of the

curriculum in response to the previous research question.

The major data sources suggest there are two differing linking procedures between the development/design and implementation phases of the curriculum change process determined by the site of the development/design. Locally developed curricula appear to be more readily implemented. This is attributed to a feeling of "ownership", to increased communication, or to the catalytic force of the developers/designers by some, and to all of these factors by others. The rate and amount of implementation of externally developed/designed curricula seem to be directly related to the nature of the selection committee for the curriculum. The greater involvement of the implementation system staff and the more directly involved potential users are, the more readily the curriculum is implemented.

Regardless of the site of origin of the curriculum, the implementation rate and degree are shown to increase if the need for the curriculum change is apparent, if the organization fosters change, and if the nature of the change involved is understood and perceived as achievable and valid by the potential users before actual use in the classroom begins. Both curriculum development/design and curriculum implementation are limited by the leadership available.

The quantity of change demanded of individuals by the development/design product directly influences the need for and nature of the curriculum implementation system. In a similar way, the complexity and quantity of change demanded by the developed/designed product, and the complexity and quality of the temporary implementation system

influence the type and quantity of curriculum evaluation necessary. The suggestion that those developing a curriculum implementation system should be developers/designers of the curriculum is consistent with the suggestion that those involved in planning for implementation should be involved in the planning for curriculum evaluation.

In summary, the curriculum implementation process is influenced by the nature and site of the curriculum development/design process. In turn, the nature of curriculum implementation affects the nature of the curriculum evaluation process. The involvement of key people, the establishment of communication systems and the complexity of change are determinant factors in the nature of each part of the curriculum change process.

External Factors. In assessing how factors external to the system responsible for implementation affect the process, it is necessary to examine the nature of the factors involved. From the analysis of major data sources, three distinct categories of factors emerge.

The first category consists of factors generated from the community as a whole. Included are specific demands for program changes from the community, specific demands from parents, socio-economic constraints, political activist groups demanding specific curriculum changes, and macro-level influences such as change in ideology regarding the role of the school in society. In addition, the power exercised by the board of education in curriculum decision making may be considered as generated from the community, as may

characteristics of the school district such as size. Socio-political and socio-cultural factors, the presence of special interest groups, geographical groups, or aggregates of people with special educational needs also exert pressures on curriculum implementation systems.

Factors generated from the school setting constitute a second category of external factors. These include the physical aspects of the classroom into which the curriculum is being introduced, the experience the school and community have with curriculum change, the number of teachers in the school not directly involved with the curriculum change but who perceive themselves as directly or indirectly influenced by it, the amount of inter-school cooperation which exists, specific factors contributing to teacher beliefs about how children learn, the type of workshops provided which promote school-community understanding, the geographical location of the school, the school's tendency toward inertia, and the presence of individual teachers within the school with causes that oppose the curriculum being implemented.

External factors generated from other agencies and institutions constitute the third category. These include teacher training institutions, field centers, external change agents, academic-school interaction, available research, teacher organizations, faculties of education, and ministries of education. In addition, factors such as the media, technological development, funding foundations and federal and local government policies are cited as influencing the curriculum implementation process.

These three categories of external factors influencing

implementation may be considered as belonging with the exogenous intervening variables described in the classification phase of information from major data sources relative to the second research question. The category exogenous intervening variables, therefore, is considered to have three sub-categories: those generated from the community, those generated from the school setting, and those generated from other agencies and institutions. (See Figure 31.)

In addressing the question of how the three categories of exogenous intervening variables influence the curriculum implementation process, several modes of operation become apparent. The intervening variables generated from the community exert both a direct and an indirect pressure. Direct intervention includes strongly expressed support or opposition for a proposed curriculum change. Alternately, the community may demand the introduction of curriculum changes not planned by the school system. The curriculum change system may be activated by direct approaches to any or all of the people categories in the implementation process, thereby generating a resisting or activating group. Community generated forces may also work more indirectly by subtly applying pressure for change through the involvement of people in the school system in the demand for curriculum change or retention.

Variables generated from the school setting operate in a manner similar to those generated from the community. They utilize a variety of means of influencing the curriculum implementation system which more often than not inhibit rather than foster the change. Included in

Exogenous Intervening Variables		
Generated from community	Generated from school setting and institutions	Generated from other agencies
Demands for program change Parental specific demands Socio-economic constraints Political activists' demands Macro-level influences Control of board of education Socio-political factors Socio-cultural factors Special interests groups Special educational needs	Physical aspects of the classroom Experience of school with curriculum change Number of teachers in the school not directly involved in the curriculum change Inter-school cooperation Teacher beliefs about learning Workshops for school-community understanding Tendency toward inertia Presence of individual teachers opposing the curriculum	Teacher training institutions Field centers External change agents Academic-school interaction Available research Teacher organizations Faculties of education Ministries of education Media Funding foundations Federal government policy Local government policy Technological factors Professional organizations

Figure 31: The exogenous intervening variables category.

these methods are direct verbal opposition, demand for the funds earmarked for the implementation activities, and the application of pressure to not change on potential users. Occasionally, however, the competition generated among teachers involved in the implementation process is enhanced by inter-school cooperation, teacher beliefs, and school location.

The nature of the influence of exogenous intervening variables in the third category, those generated from other agencies and institutions, has received considerably more attention in the studies constituting major data sources. The type of influence these factors have on the curriculum implementation process is positive in some situations and inhibiting in others. On the one hand, they frequently provide ready-made curricula for implementation and/or for training and resources during the implementation process. On the other hand, the changes proposed may directly countervene existing curriculum implementation efforts.

The primary mode of operation among these variables involves making the public generally aware of the contribution or legislation and its benefits. Seed money, money made available for the initiation of specific curriculum changes, is frequently introduced through the establishment of pilot programs or projects and school systems are expected to follow the pilot program with the decision to implement throughout the system.

Frequently the media and other factors in this group become involved in in-system generated curriculum implementation efforts by

promoting or opposing attempted curriculum change. As a factor in opinion setting, they can influence both the users of the innovation and the public at large.

It may be considered that exogenous intervening variables influence the curriculum implementation process by generating support for the change through direct or indirect contact with the user or the system; by generating opposition for the change through direct and indirect contact with the users or the system; by generating the development of alternatives to existing curricula; or by inhibiting any change in the curriculum.

To summarize, the classification phase of this study suggests that curriculum implementation is a three stage process which may be approached with one of three goals in mind. The stages identified are the decision to implement, early use, and full use/renewal. The goal for implementation may be to implement the document in the manner intended by the developer — fidelity; to implement the document in a manner in keeping with the situation in which it is to be used — mutual adaptation; or to implement the document in either a fidelity or mutual adaptation mode. Implementation efforts may result in non-implementation, co-optation, or implementation.

Six categories of elements of implementation are identified. These are: the curriculum which is described as having anatomical and ascribed attributes; the people, including users, administrators, implementation system staff, and exogenous people; the organization; implementation strategies; and endogenous and exogenous intervening

variables. Exogenous intervening variables include those generated from the community, those generated from the school setting, and those generated from other agencies and institutions.

The relationship of the component parts of the curriculum change process is described. Three distinct stages are identified: curriculum development/design, curriculum implementation, and curriculum evaluation. The interrelationships are largely dependent upon the site of development/design, the communication possible about the curriculum, the people involved in the three stages, and the quality of change demanded by the curriculum during the implementation process.

Summary

Two phases of the interpretative-theoretical methodology are presented in this chapter. The first section represents a descriptive analysis of the major data sources in relation to the four research questions posed for the study. The second section presents the classification phase of the methodology. Categories and relationships described in this section provide the components from which the theoretical model is constructed in the final phase of the research.

In Chapter Five the explanatory phase of the interpretative-theoretical methodology is described. This phase represents the culmination of the research in the development of a theoretical contextual model of curriculum implementation.

Chapter Five

Explanation and Model

In the explanation phase of the interpretative-theoretical methodology presented in this chapter, the categories of data that emerge from the exploration, analysis and classification of information from the major data sources relative to the research questions are incorporated into a theoretical model of curriculum implementation. The model demonstrates the influence of contextual factors and of other stages of the curriculum change process on curriculum implementation in schools.

The model represents action over time throughout the process of curriculum change, but concentrates on the three stages of the curriculum implementation process identified during classification: adoption, early use, and full use/renewal. These stages provide the organizing framework for model construction and become the focus for the first three sections of this chapter. The final section of the chapter presents a description of the entire model.

Adoption Stage

The decision to adopt a curriculum for implementation is preceded by the development/design of the curriculum document. Figure 32 is a conceptualization representing the first phase of the implementation process. A curriculum selected for adoption may be developed/designed by an agency external to the adopting system or may be developed/designed by people from within the adopting system. The mode of

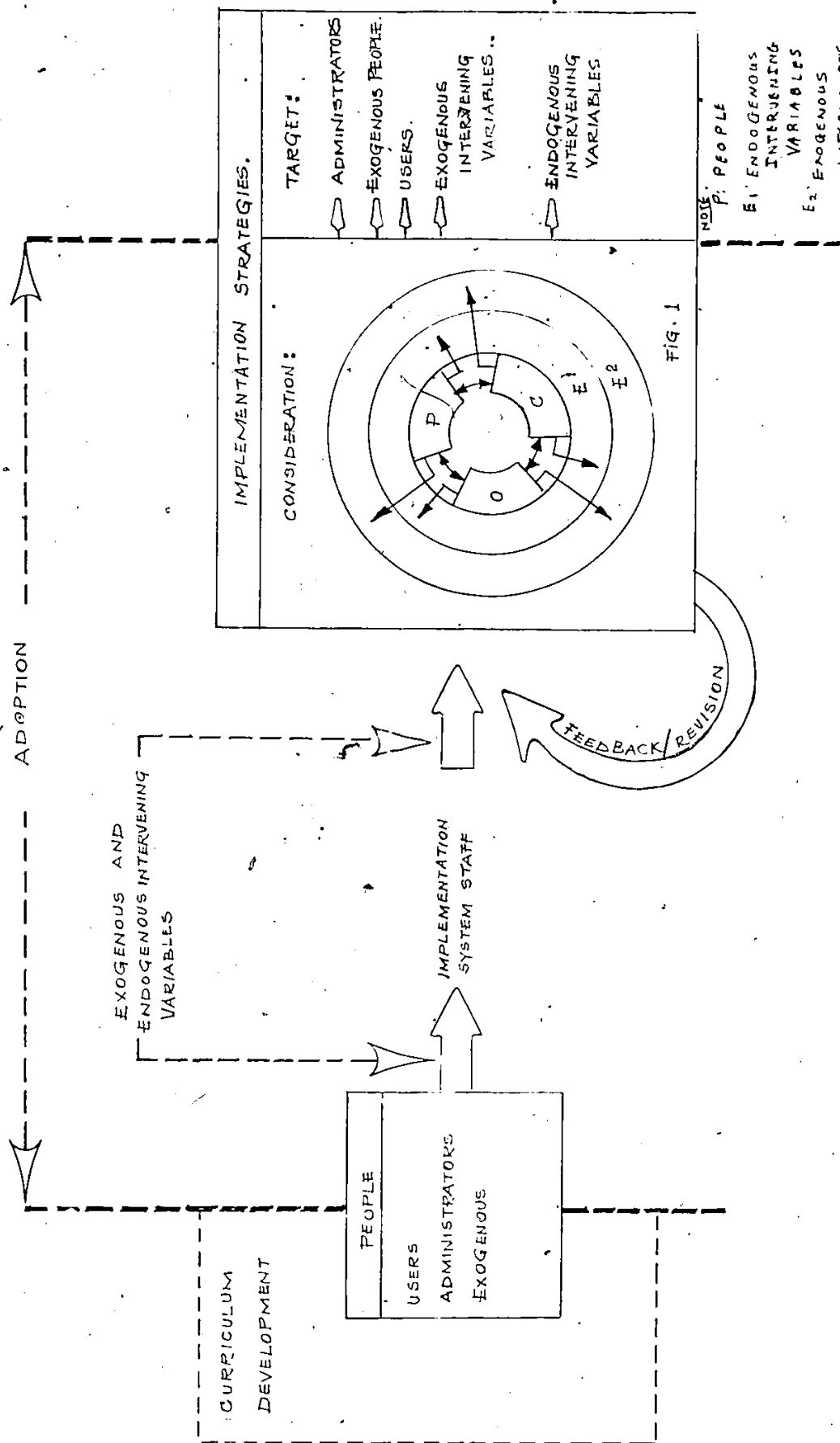


FIGURE 32 ADOPTION STAGE OF CURRICULUM IMPLEMENTATION

development/design influences the adoption process.

In the case of the adoption of externally developed/designed curricula, the decision to adopt the specific curriculum is made by a person or persons representative of one or several categories of people involved in the curriculum implementation process. The decision to adopt the curriculum is moderated by exogenous intervening variables such as socio-political factors, the economy, and the anticipated response of the community as a whole. Consideration is also given to endogenous factors such as the impact of the curriculum on the perception of overload and the willingness of the potential users to change. The context influences the decision to adopt.

Locally developed/designed curricula are often considered more readily implemented because of the participation of potential users or people familiar to potential users in the development/design process. This involvement purportedly provides a product more readily integrated into the implementing school system. In essence much of the influence of the exogenous and endogenous intervening variables has been considered in the development/design of the curriculum document. Once again, the context influences the decision to adopt. It does this by modifying the produced curriculum.

The adoption stage of the implementation process includes a planning process which is designed to enforce the decision to adopt the curriculum. This process involves the identification of the person or persons ultimately responsible for the implementation of the curriculum. This action represents the establishment of a temporary

system within the school system with implementation of the curriculum as its goal. The implementation system staff may be large or small depending on the nature of the adopting system.

In planning for curriculum implementation, the implementation system staff has as its goal three possible outcomes: fidelity to the curriculum developer/designer intent, mutual adaptation, or either fidelity or mutual adaptation. In planning to achieve this goal, the staff is obliged to develop specific strategies to bring about the desired change. In generating these strategies for implementation, consideration must be given to the characteristics of the curriculum (anatomical and ascribed attributes), the nature of the organization, the people (potential users, administrators, and exogenous groups) influenced by the proposed change, and the probable interaction among these elements. The implementation system staff must also be aware of the exogenous and endogenous intervening variables at work in the adopting system which may enhance or inhibit the effectiveness of the implementation plan. The strategies generated for implementation are influenced both by the context within the school and without the school, and by the development process which has produced the curriculum document. The existence of strategies for implementation makes the progression toward the early use stage of the implementation process possible. Failure to activate these strategies results in non-implementation.

Early Use Stage

The strategies developed during the adoption stage are utilized to initiate use of the curriculum. These strategies are designed specifically to generate support for and commitment to the implementation effort on the part of the administrators and the exogenous people influencing the school system. (See Figure 33). In addition, implementation strategies include those which will guarantee the provision of adequate resources for implementation.

A specific group of strategies designed to initiate actual use of the curriculum is focused toward potential curriculum users (principals, teachers, students). These strategies involve the user in the actual use of curriculum materials through workshops, in-service sessions, and the classroom trial of materials. They include the provision of training opportunities for requisite knowledge, skills, and attitudes desired for the effective utilization of the curriculum.

Because of the nature of the interaction of the curriculum, the organization and the people involved in the curriculum change, strategies must be aimed at overcoming potential resistance to the change from endogenous intervening variables and at capitalizing on the support obtainable from other endogenous variables. In a similar way, the implementation system staff must generate strategies to utilize the support available from some of the exogenous intervening variables and to overcome the resistance to change created by others.

During the early use stage of the implementation process the need for additional or altered strategies becomes apparent. This

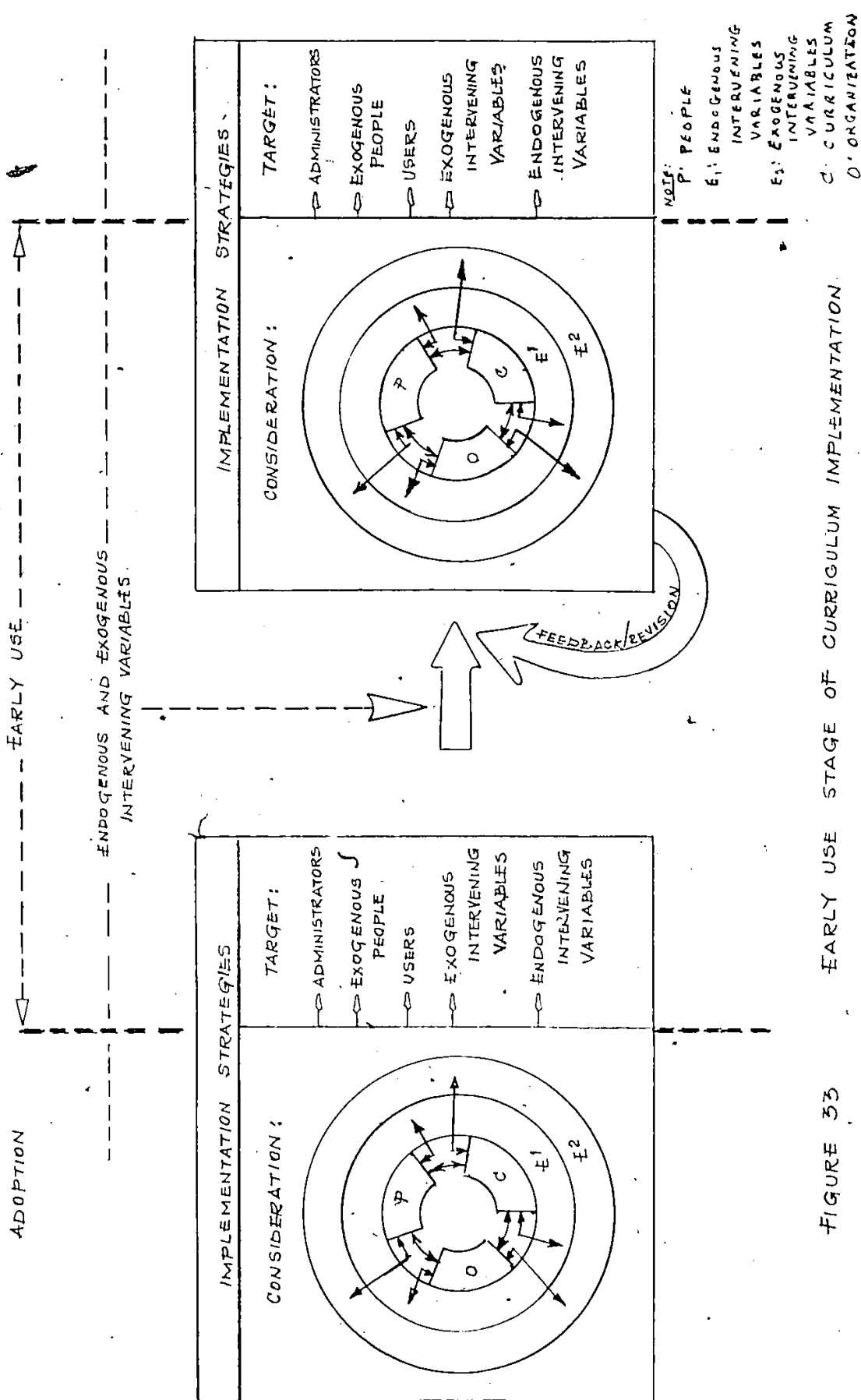


FIGURE 33 EARLY USE STAGE OF CURRICULUM IMPLEMENTATION

necessitates the reassessment of the direction in which the curriculum change is occurring. It may require additional or revised strategies to reach the point at which administrators and exogenous people are supportive of the curriculum implementation, and to guarantee that exogenous and endogenous intervening variables are not inhibiting efforts of users to implement the curriculum. If commitment from administrators and exogenous people is not achieved and if exogenous and endogenous intervening variables continue to hinder, it appears that the curriculum will receive little actual use in classrooms and although users have utilized some aspects of the curriculum, co-optation will probably occur rather than full implementation/renewal.

Full Use/Renewal Stage

During the final stage of the implementation process, the implementation system staff must retain the support of administrators and exogenous people and must also continue to utilize endogenous and exogenous intervening variables as facilitators rather than hinderers of the change. The primary target for implementation strategies in this stage, however, is the user. Three groups of users may be considered in strategy development: principals, teachers, and students.

Throughout the adoption and early use stage of the implementation process, the users have been included as targets for strategies for change and have, in fact, undergone some degree of change in the desired direction. Since change is a gradual process which occurs at different rates in individuals, users will be implementing the



curriculum to varying degrees. In order to have the curriculum in full use/renewal throughout the system, the implementation system staff must concentrate its efforts on developing strategies which facilitate individual users in the full implementation of the curriculum.

The three user groups must be considered in strategy development. The development of full use/renewal by the principals involves training them as curriculum implementation leaders in their individual schools and, consequently, should parallel but partly precede the development of knowledge, skills and attitudes of teachers relative to the implementation of the curriculum. Knowledge, skills and attitudes should also be developed in students relative to the implementation of the new curriculum. Teachers are leaders in the development of students relative to the curriculum. Consequently, strategies aimed at teachers should parallel, but somewhat precede those developed for students. This suggests a sliding filament strategy plan which, ideally, will completely overlap when full implementation/renewal is achieved. (See Figure 34).

In addition to maintaining support for the curriculum implementation and targeting efforts toward users, the implementation system staff must anticipate the effects of exogenous and endogenous intervening variables in their strategy development. The approach is still a contextual one. Strategies which are ineffective must be revised and alternatives used to foster growth in the desired direction. Full use/renewal occurs when the goal for implementation established at the time of adoption is achieved.

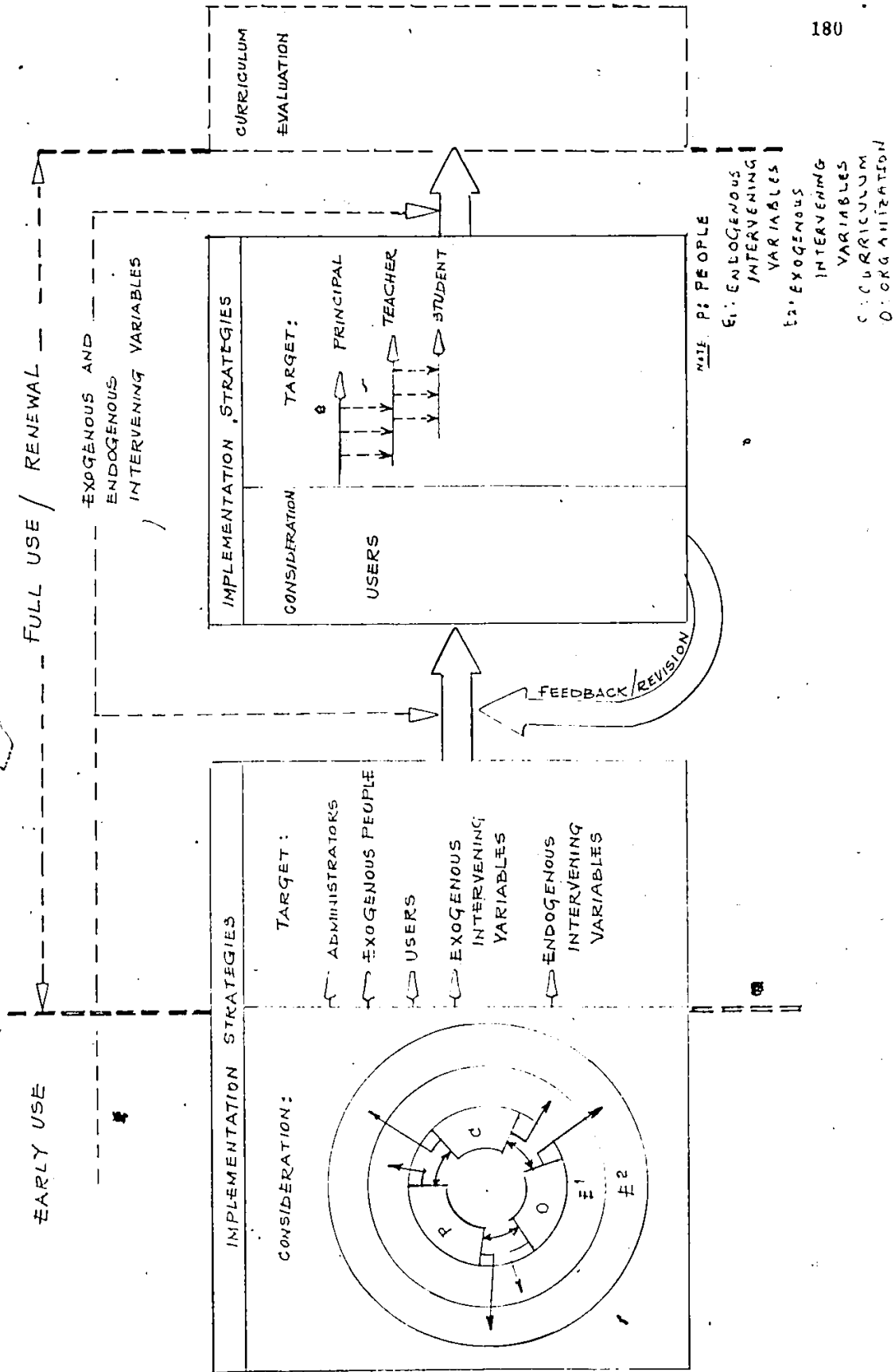


FIGURE 34. FULL USE / RENEWAL STAGE OF CURRICULUM.

The full use/renewal of a curriculum in a school system terminates the necessity for the temporary implementation system, but leads naturally to the curriculum evaluation process. Curriculum evaluation includes the assessment of the development/design of the curriculum, the assessment of the implementation of the curriculum, and the determination of the effectiveness of the curriculum. The nature of the curriculum evaluation process is contingent upon the nature of the stages of curriculum change which precedes it. Complexity in the development/design and implementation stages necessitates complexity in the curriculum evaluation system.

Composite Model

The composite contextual model of curriculum implementation is shown in Figure 35. It is a linear model demonstrating the relationships among curriculum implementation and the other stages of the curriculum change process and at the same time, depicting the relationships among categories of factors influencing the curriculum implementation process. The model is comprised of the three segments described earlier in the chapter: adoption, early use and full use/renewal. These segments are not discrete, but are part of the continuous curriculum implementation process. The links between these interrelated segments are the strategies for implementation which facilitate the movement of the implementation effort toward full use/renewal of the curriculum. The termination of one stage and the beginning of a new stage is indicated by the success of the



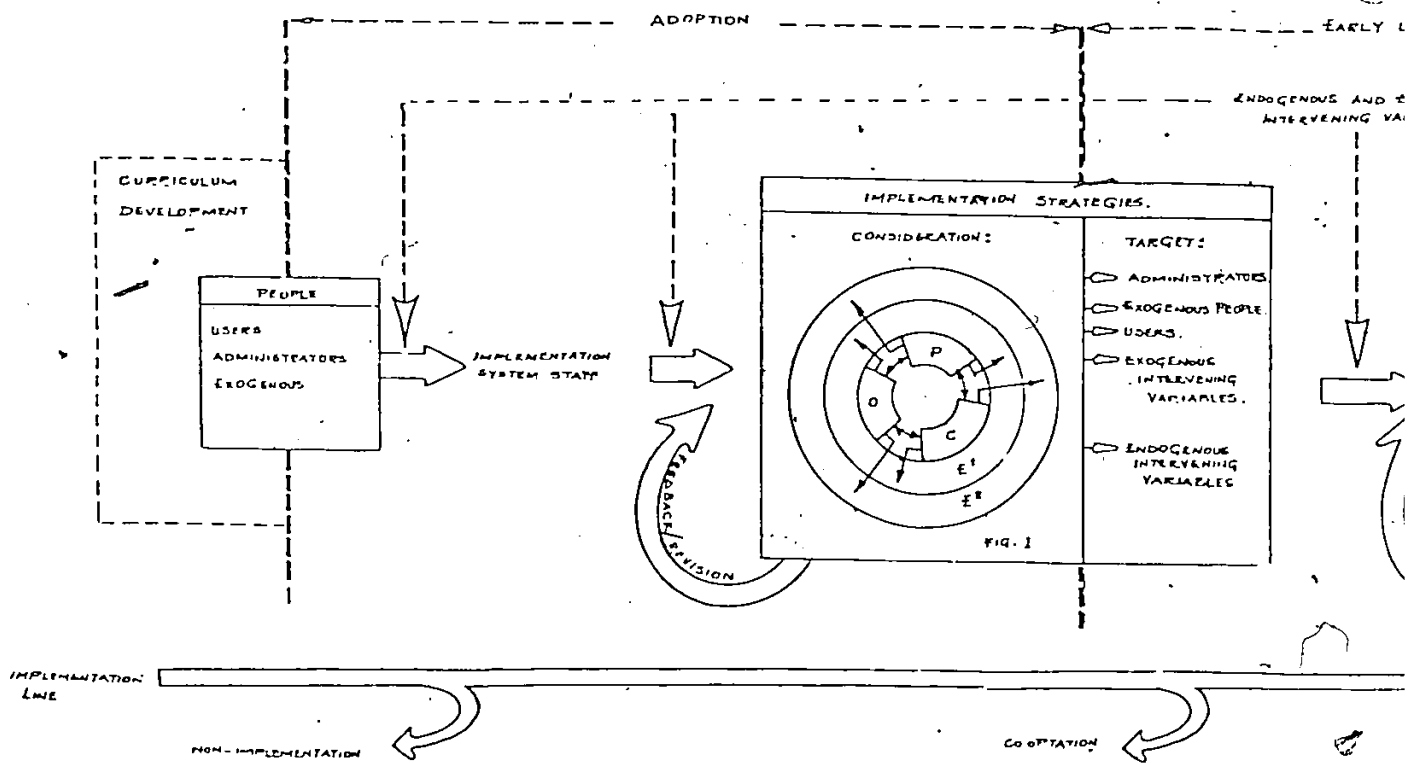
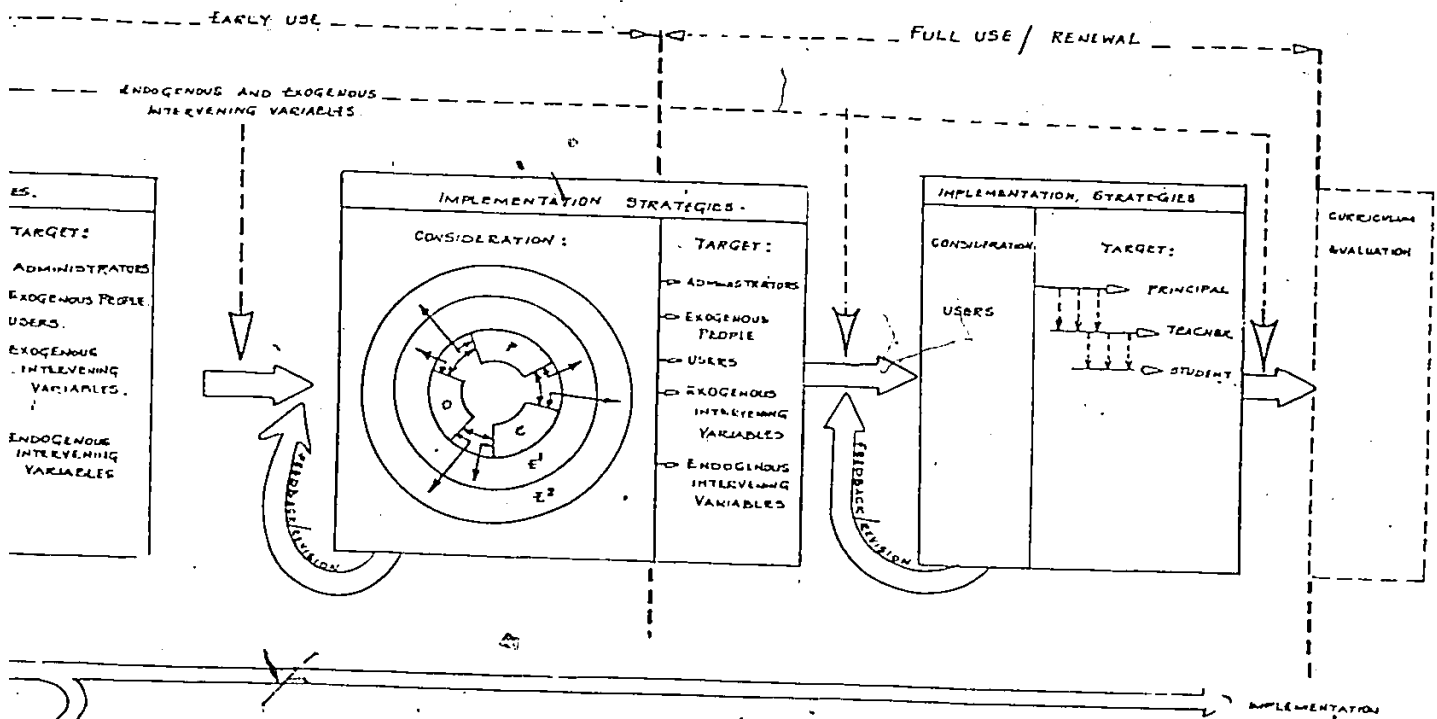


FIGURE 35. CONTEXTUAL MODEL OF CURRICULUM IMPLEMENTATION



* CURRICULUM IMPLEMENTATION

- KEY:
- P: PEOPLE
 - C: EXOGENOUS INTERVENING VARIABLES
 - E: EXOGENOUS INTERVENING VARIABLES
 - O: CURRICULUM
 - I: ORGANIZATION
 - Z: ORGANIZATION

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implementation strategies and revised strategies effecting the desired change in the use of the curriculum.

From the review of change literature it was apparent that several models and approaches to change exists. Basically, these house varying views of man — specifically man is viewed as a rational being, as socially interactive, as controlled by coercive activities, or as controlled by a combination of these approaches. The composite model in this study can accommodate each of these views of 'man. The implementation strategies chosen in a given context reflect the view held by the curriculum manager or implementation system staff.

The model represents action over time which results in complete implementation and leads to curriculum evaluation. It should be noted that although the model represents a time period, no significance should be attributed to the relative space utilized in illustrating the nature of the process in each stage of the implementation. The amount of time necessary to make an adoption decision varies from situation to situation and is influenced by many factors including the availability of alternative curricula, the criteria established for the selection, the experience of the people involved in making the decision, political and/or economic forces. Planning for implementation is also contingent upon contextual factors including the knowledge, skills, and attitude of the implementation system staff, the history of implementation planning in the school system, and the number of decision-making levels that must approve the plan for implementation before it is initiated.

Similarly, the time during which the early use stage of

implementation is in operation depends on many contextual factors among which are the amount of support available from administrators, users, and exogenous people, and the presence and influence of endogenous and exogenous intervening variables. Full use/renewal also varies in the time it takes to achieve depending on such factors as the knowledge, skills, and attitudes of the users, the amount of change implied by the curriculum, and the number of curriculum changes the users are experiencing concurrently.

Strategies developed throughout the model are based on the understanding of the nature of the actions and interactions among the curriculum, the organization into which it is being introduced, the people involved in the change directly or indirectly, and the endogenous and exogenous intervening variables. The more knowledge the implementation system staff has relative to these factors, the more effective it can be in planning for implementation. The exact nature of the organization, the demands of the curriculum, the endogenous and exogenous intervening variables, and the people involved in the curriculum change vary from implementation effort to implementation effort. Therefore, the strategies which are necessary for the implementation may change from system to system, from school to school and within the same school from curriculum to curriculum.

The effectiveness of the strategies employed is directly influenced at each stage of the implementation process by endogenous and exogenous intervening variables existing at that point in time. Some of these variables are predictable and others are not. It is

imperative then, that strategies for implementation undergo constant revision (indicated by loops in the model). Changes in the organization or in people involved directly or indirectly in the curriculum change also necessitate revision of strategies.

Implementation efforts are not always successful and may result in non-implementation if an implementation plan does not exist or if the strategies in the plan are not activated. The implementation efforts may also be only partly successful resulting in some early use of the curriculum without full implementation (co-optation). These alternatives are shown by the implementation line at the base of the model.

The model presents the culmination of the interpretative-theoretical methodology outlined for the study. The purpose for the study was the development of a conceptual model of curriculum implementation in its context. Four research questions emerging from the theoretical rationale for the study were addressed during the exploration, analysis, and classification phases of the study. The answers to these questions are represented in the model. The manner in which they appear is discussed in what follows.

The first research question is: "How does curriculum implementation occur in schools?" The major data sources provide the answer that curriculum implementation is a continuous process which occurs in three identifiable stages. The three stages serve as the organizing framework around which the model is built: adoption, early use, and full use/implementation. Further, three distinct outcomes of

implementation efforts are possible: non-implementation, co-optation, and implementation. These are demonstrated at the base of the model.

The second research question, "What are the elements of curriculum implementation in schools?"; leads to a listing of 97 different factors which could be considered as elements of the implementation process. These elements are classified in the third phase of the study into six categories: the curriculum, the people, the organization, implementation strategies, endogenous, and exogenous intervening variables. Each of these factors is found as an integral part of the model.

In answering the third research question, "How is the implementation of curricula in schools affected by its being part of the total curriculum change process?", it is apparent from the major data sources that the type of the curriculum development/design process determines the complexity of the implementation process by influencing the characteristics of the curriculum and by affecting the complexity of the implementation system. Further, the nature of curriculum evaluation is influenced by the type of curriculum development/design process and the complexity of the curriculum implementation process which precede it. Consequently, curriculum development/design, implementation and evaluation are viewed as a continuous and interacting change process. The continuity and interaction are represented by the arrows which flow through the model.

In addressing the fourth research question, "How is the implementation of curriculum in schools affected by factors external to the

system responsible for the implementation?", it is first necessary to identify the external factors from the major data sources and to categorize them to determine if they are different from the exogenous and endogenous intervening variables which appear in the analysis of elements of implementation in the second research question. The classification of these external factors does not produce any additional category of elements, but does lead to subcategories of exogenous intervening variables. It is clear that the number and nature of these variables differs from situation to situation and over time. The nature of their intervention is to hinder or to facilitate change. These factors are shown in the model as influencing the strategies necessary at all stages of the implementation process.

The nature of the interpretative-theoretical methodology demands that the analysis, classification and explanatory phases of the research be confined to data extracted from the major data sources. In Chapter Six contributions of the model generated from this research are discussed in relation to the extension of knowledge of the curriculum implementation process, implications for educational research, and indications for practice.

Chapter Six

Summary and Conclusions

The purpose of this chapter is to review the study, to discuss the contributions of the resultant model to knowledge about the curriculum implementation process, to suggest implications of the model for educational research, to describe how the model is useful in practice, and to state general conclusions for the study. The chapter is organized in four sections corresponding to the stated purposes.

Review of the Study

The phenomenon, curriculum implementation, although the subject of considerable attention by educators, is not understood from a theoretical perspective. A review of the literature related to curriculum implementation revealed a limited quantity of empirical investigations and conceptualizations. None of these investigations and conceptualizations provides a theoretical view of curriculum implementation which includes all the factors known to influence educational change of which curriculum change is one type. Curriculum implementation, as one stage of the curriculum change process, is affected both by being part of a change process and by factors influencing the overall change itself. The increased demand for effectiveness and efficiency of educational practice necessitates a clear and carefully developed understanding of the curriculum implementation process. Therefore, the purpose of this study was to develop a

contextual model of curriculum implementation which incorporates the results of empirical studies into a theoretical framework.

In the study a theoretical model of curriculum implementation was developed from the findings of 43 research studies of curriculum implementation. The interpretative-theoretical methodology employed is rigorous and deliberative. It consists of four distinct and sequenced phases. The first phase, exploration, provides a framework and poses the research questions to be considered in the investigation. The questions emerge from change theory. In addition, the exploration phase establishes the criteria for the inclusion of studies as major data sources for the investigation and describes the studies. Phase two of the methodology, analysis, involves the systematic comparison of data sources. Research questions posited in the exploration phase provide the framework in which the analysis occurs. The analysis, in turn, furnishes the data base from which categories are developed in the subsequent phase. Classification, the third phase, consists of the development of categories of data which organize and aid in clarification of thought relative to the phenomenon being studied. This phase includes analysis, abstracting and generalization based on established criteria.

In the fourth phase of the study, explanation, the conceptualization of the theoretical relationships is finalized with the construction of a contextual model of curriculum implementation. The model provides

answers to the four research questions posed in the first phase of the study. These are:

1. How does curriculum implementation occur in schools?
2. What are the elements of curriculum implementation in schools?
3. How is the implementation of curriculum in schools affected by being part of the total curriculum change process?
4. How is the implementation of curriculum in schools affected by factors external to the system responsible for the implementation?

The study concludes that curriculum implementation is a process comprised of three sequential stages: adoption, early use and full use/renewal. Not all implementation efforts, however, effectively progress through the three stages. Those efforts that terminate during or immediately after adoption result in non-implementation. Early use of the curriculum which reverts to previous practice is co-optation. Only those efforts which result in full use/renewal of the curriculum complete the implementation process. The terminal point of the implementation process is marked by the achievement of the goal for implementation established during the adoption stage: fidelity to the intents of the developer, mutual adaptation, or either fidelity or mutual adaptation.

Six categories of elements of curriculum implementation emerge from the study. These are: the curriculum, the people, the organization, exogenous intervening variables, endogenous intervening

variables, and implementation strategies. These elements are interactive during the implementation process. As a management process, the development of implementation strategies by an implementation system staff based on the interactions of the other curriculum implementation elements is viewed as essential to complete the implementation of the curriculum.

The study demonstrates that curriculum implementation is influenced by the nature of the curriculum development/design process that precedes it. This influence is both in terms of the nature of the product (curriculum) resulting from the process and in terms of the potential for involvement of users during the development/design process. The necessary strategies for curriculum implementation are influenced by both factors. The nature of the curriculum development/design process and of the curriculum implementation process determines the kind of curriculum evaluation necessary. The degree of complexity of the development/design and implementation phases of the curriculum change process determines the complexity of curriculum evaluation.

External factors are shown by the study to influence the curriculum implementation process in two ways. Direct influence is frequently generated from outside the curriculum implementation system to foster or inhibit curriculum change. Indirect influence is applied to the people in the implementation system which facilitates or hinders the implementation process. The direct and indirect influences of external factors necessitate the continuous evaluation and/or revision of implementation strategies through the entire process. The continuous

emphasis on feedback and revision of implementation strategies in light of the effect of external factors provides the means of increasing the effectiveness of the change effort by decreasing the use of ineffective strategies and by providing more immediate alternative approaches. In some situations the influence of endogenous intervening variables and exogenous intervening variables results in non-implementation or co-optation.

Contributions of the Study

The purpose of model building is generally to enhance understanding of a phenomenon or the relationships among phenomena. The model in this study extends understanding of the theory of curriculum implementation in several ways.

1. It incorporates elements of curriculum implementation previously not included in theoretical models.
2. It demonstrates the relationships among the elements of implementation throughout the entire process rather than in a single stage.
3. It illustrates the nature of interaction of exogenous and endogenous intervening variables on curriculum implementation.
4. It demonstrates the interrelationships among the curriculum implementation process and other stages of curriculum change.
5. It shows the importance of constantly revised strategies for

effective implementation.

6. It recognizes the necessity of constant revision of implementation plans throughout the entire process.
7. It identifies additional people involved in the implementation process not included in other models.
8. It demonstrates the need for conscious sequencing of strategies relative to target groups during the implementation process.
9. It includes three facets of the context in which curriculum implementation occurs not included in other models:
 - a. Curriculum implementation in the context of curriculum change.
 - b. Curriculum implementation in the context of factors exogenous to the school system in which the implementation is occurring.
 - c. Curriculum implementation in the context of factors endogenous to the school system in which the implementation is occurring but exogenous to the curriculum implementation system.
10. It incorporates a broader data base than other theoretical models of curriculum implementation including a larger group of empirical findings in its generation.

Implications for Educational Research

The contextual model of curriculum implementation developed in this study is descriptive and explanatory. It provides a framework from which the practice of curriculum implementation may be considered. The model which presents the general nature of the curriculum implementation process, provides a structure from which needs for further research are readily identified. Although it suggests relationships, it does not have direct predictive significance.

Research questions suggested by the model which must be addressed in furthering the development of a predictive theoretical model include:

1. Is there an optimum time for the activation of implementation?
2. Is there an optimum time for the initiation of implementation strategies?
3. Which anatomical and/or ascribed attributes facilitate its implementation in specific types of organizations?
4. What are the characteristics of exogenous and/or endogenous intervening variables which make them facilitators and/or hinderers of curriculum implementation?
5. What are the characteristics of effective implementation support staffs?
6. What managerial strategies are most important in effective curriculum implementation?
7. In what types of context are the fidelity, mutual adaptation and either fidelity or mutual adaptation goals of curriculum

most successful?

8. Is there a predictable relationship between the nature of the elements of implementation and the time needed for full use/renewal?
9. Is there a predictable relationship between the nature of the goal and the time needed to accomplish it?
10. Is there a relationship between the context of the curriculum implementation and the order in which strategies must be activated for successful implementation?

Implications for Practice

The contextual model of curriculum implementation is not prescriptive, but because it was developed from empirical findings of investigations of practice of curriculum implementations, it is useful in the identification of factors to be considered in planning for implementation. The model suggests the following questions which should be considered in developing a plan for implementation:

1. How was the curriculum developed/designed?
2. Who were the people involved in the development/design of the curriculum?
3. Can and should the curriculum developers/designers be involved in the implementation of the curriculum?
4. Are there individuals or groups outside the school system who are affected by the curriculum change? How will they react to the change?

5. Will the use of the curriculum affect persons within the school system not considered to be users?
6. What is the nature of the organization into which the curriculum is being introduced?
7. Can and will the system support the change?
8. What characteristics of the curriculum (anatomical or ascribed) may affect its implementation?
9. Will the administrators support the implementation? To what degree?
10. What changes will users have to make to be implementing the curriculum?
11. How will the knowledge, skills and attitudes necessary for full use/renewal be fostered in users?
12. Who is responsible for planning for implementation?
13. What strategies have been used to implement other curricula in this system? What has worked? Why?
14. What new implementation strategies are implied by this curriculum?
15. How will implementation strategies be revised over time?
16. Is the system ready for the change implied by the curriculum?
17. How long should the implementation take?
18. What will indicate full use/renewal of the curriculum?
19. Are there exogenous factors other than people which will affect the implementation of this curriculum?

20. What are the endogenous intervening variables at work in the system which will influence the implementation?
21. Which strategies for implementation must be activated first?
22. How will the implementation process be evaluated?

This study presents the development of a contextual model of curriculum implementation which represents one means of viewing what is known about the implementation process. Curriculum change, of which implementation is one stage, is a type of organizational change. Organizational change is known to be influenced by factors external to the process itself, and yet previous theoretical models of curriculum implementation do not incorporate contextual factors. In addition, the stages of organizational change are known to be interrelated. This interrelatedness has been ignored in previous theoretical implementation models.

The methodology employed in the study demands a careful, in depth evaluation of a set of investigations meeting pre-established criteria. Its systematic multi-phased treatment of data makes it theoretical. The resultant conceptualization provides an explanation for what is known about the curriculum implementation process from the set of investigations. It is one step in the series of approximating steps necessary for a full understanding and the formulation of a complete theory of curriculum implementation.



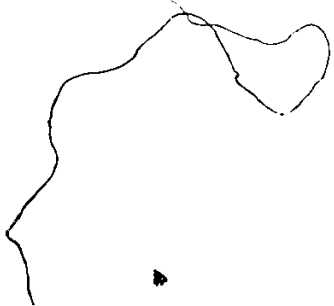
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