# DIMENSIONS OF BEHAVIOUR OF THE SCHOOL PRINCIPAL IN AN ELEMENTARY SCHOOL CURRICULUM IMPLEMENTATION

by

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## ABSTRACT

The problem upon which this study was based is the need to study the principal's role in change efforts. Schools are under pressure to change. Because of this emphasis, principals are expected to become leaders for educational improvement in the school. However, there is little clarity about what principals can and should do to meet this demand.

The main purpose of the study was to generate information leading to further development of the Leithwood and Montgomery model (1982) to represent the dimensions of principal behaviour that are critical to the process of implementing new curricula in an elementary school. Leithwood and Montgomery's model of "effective" and "typical" dimensions of principal behaviour was used as the conceptual base for the study with the objective of ascertaining the accuracy of extrapolated elements for the situation investigated, and whether any of the elements needed to be refocused or extended.

In order to achieve the purpose of the study a phenomenological approach was taken. This approach was decided upon because in the researcher's opinion its value lay in its ability to provide holistic data on a wide range of dimensions of behaviour, interrelationships, perceptions and attitudes existing both during the time frame of the study

and retrospectively, and to bring the data to bear on the problem of the study.

A case study of one elementary school principal and his work setting was conducted. A variety of methods was used to collect the data during the investigation. Interviews with the principal, vice-principal and the fifteen teachers who consented to participate, along with documentary data, were used to collect evidence about past events. Interviews with the same individuals, along with observation conducted in the school over a period of eleven days, provided information about events current in the school at the time of the study. Structured observation in each participating teacher's classroom followed by Levels of Use interviews were used to provide information on the status of the implementation of the curriculum program at the time of the study.

From the data analysis it was concluded that a higher-than-expected level of implementation had taken place. Analysis was then employed to examine the dimensions of principal behaviour. The major finding in relation to the principal profile that emerged was that it was bi-modal, that is, the dimensions differed in quality depending upon the program area to which they related. In regard to the regular school program, the dimensions of behaviour used by the principal were largely "typical", resulting in leadership that was mainly administrative and geared to main-

taining a smooth-running school. In regard to the computer innovation the principal used largely "effective" dimensions of behaviour, thus providing educational leadership which resulted in an implementation that was rated successful.

The research confirmed the usefulness of the version of the model used for the purpose of the study. The individual dimensions were appropriate and relevant to the work of the subject principal, and the set of dimensions studied proved to be a suitable unit for studying his influence upon the process of curriculum implementation.

The study resulted in several recommendations for further research into modifying the model used and, by extension, the Leithwood and Montgomery model. These included making allowance in the model for possible lack of consistency in the dimensions of behaviour principals use across the discrete areas in which they function; building in contingency factors; further examining the effectiveness of both directive and participative decision-making modes in implementation settings; and development of a continuum with various checkpoints to allow for several levels of rating for each dimension.

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# CHAPTER I

# INTRODUCTION

## Statement of the Problem

The past decade has seen a growing emphasis on the role of the principal in implementing and maintaining all types of innovative practices in schools. Schools are under pressure to change: any observer of the North American scene will note the increasing number of educational innovations that have been developed. Because of this trend, principals are expected to change their role and become leaders for educational change in the school, but as yet there is little clarity about what principals can and should do to meet this demand. There appears to be a need to study the principal's role in change efforts and to develop models that describe the specific components of effective leadership that are critical to the process of implementing innovations.

A particular area of innovation that warrants considerable attention is curriculum change. In Canada, provincial curriculum development cycles are ongoing, so that schools are continually being faced with new or revised curricula which they are expected to implement. In the province of Manitoba, the Department of Education has set curriculum implementation as a priority direction for the province's

schools in light of the many new curricula that have been developed over the past decade. The problem many such bodies face is a common one in that curriculum that is developed but does not reach a significant level of use in the classroom is of little value.

All major research on innovation and school effectiveness coalesces in support of the elementary school principal as a critical element which strongly influences the likelihood of change (Fullam, 1982, page 713; Leithwood and Montgomery, 1982, page 309). However, what principals should do specifically to manage curriculum change at the school level is a complex area for which research has to date provided little direction. Erickson (1979, page 10) suggested that study of principal behaviours as one of the variables potentially accounting for differences in student achievement is the most promising and relevant direction for research on educational administration because:

> (a) it draws fertile insights from research in classrooms; (b) it seems far more seminal, catalyzing inquiry that constantly breaks out in new directions; (c) it departs from the "blackbox" tradition that has moved us substantially nowhere; (d) it features provocative practical implications and explanatory appeal; and (e) its conceptualizations, rather than being so abstract as to defy empirical challenge, are well grounded in the observable world.

While research on educational implementation is barely fifteen years old, Fullan (1982) notes that "systematic re-

search on what the principal actually does and its relationship to stability and change is (remarkably) only two or three years old, and much of that research is still in progress". In spite of the relative newness of the area, it was determined that this inquiry should use as its base findings drawn from this research, with the intention of extending it by suggesting and testing a critical model of the principal's role.

A major synthesis of research on the role of the elementary principal in school improvement was conducted by Leithwood and Montgomery in 1982. They delineated a model identifying "principal effectiveness" categories in planned educational change efforts based on past research. A major implication of their review is the need for research to ascertain the accuracy of the descriptive model they have developed, and to develop dynamic models identifying critical dimensions of behaviour and their relationship to the degree to which program improvement occurs. Because this research uses their model as a preliminary perspective on the area of inquiry, a brief outline of the categories and dimensions of behaviour central to their model is provided at this point.

## The Leithwood and Montgomery Model

Leithwood and Montgomery (1982) assessed and synthe-

sized the research findings to date regarding effective and ineffective principal behaviours related to program improvement at the elementary school level. "Effective" principals were defined as "those who facilitated necessary teacher growth and thereby indirectly influenced student learning or impinged on other factors known to affect such learning" (page 310), as compared to "typical" principals who did not facilitate such growth. Three categories were derived from the studies by means of content analysis. These categories were used as organizers for sub-sets of data on dimensions of principal behaviour derived from the research.

For each category and dimension, findings related to the orientation of "effective" principals toward that dimension were described and compared with those of "typical" principals. Because the original studies on which the synthesis was based did not always or necessarily address the dimension being examined, results were uneven in both quantity and quality. The model does, however, provide what Leithwood and Montgomery term "a structure of plausible hypotheses in need of further testing" (page 336), and was used as an initial template for the research into principal behaviour set out in this study.

## Purpose of the Study

The purpose of this study was to use a modified version

of the Leithwood and Montgomery (1982) model to investigate the principal's dimensions of behaviour for a particular curriculum implementation, that of the Computer Awareness Curriculum, to analyze the relationship between the principal's dimensions of behaviour and the level of implementation of the computer program in the school, and to further develop the revised model to represent the dimensions of behaviour of the principal that were critical to that implementation.

A corollary objective was to determine whether there were additional dimensions of behaviour of the principal that should be included in the revised model, and if any of the dimensions studied needed to be refocused and/or extended.

## Research Questions

The major research question guiding this study was:

> How can the modified Leithwood and Montgomery model be further developed to better describe the critical dimensions of principal behaviour relevant to the process of curriculum implementation?

Specific questions included:

1. To what extent did the principal demonstrate the selected dimensions of behaviour of "effective" principals in the areas of goals, factors, and strategies?
2. What was the level of implementation of the Computer

Awareness Curriculum in the school, and what relationship can be posited between that level and the dimensions of behaviour of the principal that were studied?

## Significance of the Study

This study is significant in light of the need to provide definition to the principal's role in curriculum implementation. A growing body of research has identified the principal as one of the critical factors that influence school change. Simple identification of such a factor is not particularly useful, however; it is only through increased specificity that theory and action can go beyond the generalities of leadership qualities found in the literature. There must be identification of principal behaviours, actions, and interventions effective in school change with enough specificity to provide some measure of direction for school leadership.

To date, three types of studies have moved some way toward meeting this need. Several studies have reported general attributes of principals that have had a positive effect on school improvement (Edmonds, 1981; Wellisch, McQueen, Carriere, and Duck, 1978; Blumberg and Greenfield, 1980). Styles of principal interventions have been identified (Hall, Rutherford, and Griffin, 1982; Hord and Hall, 1982). A major research review identified principal behav-

iour as either "effective" or "typical" based on studies ranging across three areas of research: the principal's role in general, effective schools research, and innovation (Leithwood and Montgomery, 1982). In spite of the valuable contributions made by work in this vein, understanding of principal behaviours specific to and required for the implementation process in elementary schools is lacking. This research attempts to move toward filling this void through an empirically based research model focussing upon specific principal behaviours for achieving the implementation of curriculum. Hence, by undertaking this study, a contribution can be made to an area researched only to a limited extent.

This study is also significant in light of the problematic nature of efforts at curriculum implementation. Schools can little afford failures in the present context of limited resources. Thus curriculum implementation has emerged as a prime field for research investigation, although the field is still in the formative stages. There is a need for greater precision in educators' knowledge regarding the many aspects of the implementation process. This research attempts to contribute to a more precise understanding of implementation at the elementary school level through its study of the process, factors, and relationships involved.

A further point of significance comes from the fact that the majority of studies of curriculum implementation have been conducted in American schools. Consequently it would appear that, since this research focuses on curriculum change in a Canadian elementary school, its significance is increased.

Yet another point of significance is that the implementation under study is that of the Manitoba curriculum on computer awareness. This is a curriculum for a new area, one that has not previously had a place in the elementary school program. Its use represents a starting point for the application of information technology in the elementary school. Many educators see the use of this technology as a promising way to improve school productivity in the basic skills and thinking processes. Thus, this curriculum represents a prime area for research regarding the role principals might play in its implementation.

## Assumptions

This study was predicated upon four assumptions drawn from the literature on school change.

1. the assumption was made that curriculum implementation is a complex, dynamic, and multi-levelled process. It was assumed that there are different stages of the implementation process, commonly known as initiation,

implementation, and incorporation; and that the implementation process is critical and worth exploring in depth (Fullan, 1982; Berman and McLaughlin, 1978; Rosenblum and Louis, 1979).

2. It was further assumed that situational parameters such as the scope of the change, the past history of change efforts, and the stability of the environment profoundly influence the nature and the impact of the implementation effort (Fullan, 1982, page 100).

3. It was assumed that the individual school is the key unit in which curriculum implementation takes place (Goodlad, 1975). This is the case because the coordination, discussion, and concomitant learning of new values and practices implied by implementation is most thoroughly achieved when administrators and teachers plan, design, and evaluate the change as a working group, that is, at the school level (Fullan, 1982, page 73). Therefore it is the appropriate unit for the purpose of this study.

4. It was also assumed that at the elementary school level the most important individual affecting implementation is the principal (Leithwood and Montgomery, 1982; D. Common, 1981; Hall, Rutherford and Griffin, 1982). Deliberate administrative action is required to promote

the necessary teacher growth and competence for optimal implementation.

5. It was assumed as well that while no two school administrators face exactly the same conditions in dealing with curriculum implementation, the task and its attendant issues have sufficient universality that other schools may profit from this study.

## Limitations of the Study

In this study the following limitations were recognized:

1. The study was limited to the time period from September, 1983 to May, 1985. This period represented the time from which curriculum implementation began until the completion of data collection, a period consisting of one full school year and a nine-month portion of the second year. This period was chosen because research has indicated that implementation is rarely achieved in one year, and that the second year is the period in which most teachers can be expected to reach the level of routine use if the innovation is going to be implemented (Hord and Goldstein, 1982).
2. A portion of the study involved 'ex post facto' collection of data. Hence data were collected during the period of February, 1985 to May, 1985, and patterns of

implementation occuring prior to that time were inferred subsequently.

3. Four teachers out of the staff of 20 in the school refused to participate in the study. Their inclusion might have affected the levels of use configuration.

## Delimitation of the Study

For the purpose of this investigation the following delimitation is made. The school chosen, while meeting the criteria set for the study, was not a standard school in several ways. It was a new school, in operation for one year prior to the initiation of the new curriculum in the fall of 1983. The twenty classroom teachers had been hand-picked by the principal and vice-principal from among sixty applications from teachers in the school division. The school's amenities were above average and included unallocated time of forty minutes a day for three teachers, seminar rooms in addition to regular classrooms, and assistance to teachers provided by teacher aides and parent volunteers.

## Definition of Terms

The definitions given here are intended to clarify the more critical and frequently used terms in this study.

"Innovation" is defined as a significant departure from

practices that were standard in the school. Innovation may represent a dynamic interaction among three dimensions (Fullan, 1982):

a) the use of new materials (direct instructional resources such as curriculum materials and/or technologies).

b) the use of new teaching approaches.

c) the alteration of beliefs (such as pedagogical assumptions or theories underlying new policies or programs).

"Initiation" refers to the stage of the innovatory project in which the principal conceives and formulates plans, makes a decision to support the project, searches out resources, and begins the work of implementation with the staff of the school.

"Implementation" is defined as the process of putting into practice a program or set of activities new to the people attempting or expected to change (Fullan, 1982, page 54).

The following definitions were drawn from Leithwood and Montgomery's model (1982):

"Dimensions of behaviour" are defined as characteristics or qualities of actions or attitudes of the principal. These dimensions refer not only to overt actions but, in the case of goals and factors, to inner states as well.

"Principal behaviours" are defined as increasingly effective to the extent that they facilitate necessary teacher growth and thereby indirectly influence student learning or impinge on other elements known to effect such learning.

The three categories of principal behaviour studied are defined as follows:

1. "goals" are the end point or broad objective to which the principal directs his efforts.
2. "factors" are phenomena potentially affecting the experiences of students, either those operating on the classroom experiences of students, or those operating on the school-wide experiences of students.
3. "strategies" are actions in which the principal engages to influence factors associated with the in-class and wider school experience of students.

## Organization of the Study

The investigation and the reported findings are presented in the following order in this thesis. The body of this report includes the preceding introduction (Chapter I) and a review of the literature (Chapter II).

Presentation of the methodology and procedures employed in this study is given in Chapter III.

Chapter IV presents the findings regarding the level of implementation achieved of the Computer Awareness Curriculum.

Investigation into the dimensions of behaviour of the principal is reported in Chapter V.

In Chapter VI, analysis of the relationships discovered between dimensions of principal behaviour and program area is set out, followed by suggestions for modification of the version of the Leithwood and Montgomery model used in the study.

Finally, Chapter VII contains the summary, implications, recommendations, and conclusions of this study.

# CHAPTER II

## REVIEW OF THE LITERATURE

Researchers have for years grappled with the phenomenon of organizational change in an attempt to develop insights that will help explain why change works when it does and what has to be done to improve the rate of success. This review looks first at the broad field of research on innovation, then moves to the literature specific to the field of planned educational change, and finally focuses on the research to date on the principal's role in bringing about change at the level of the elementary school. The following outline provides an overview of the organization of the chapter:

A. EDUCATIONAL INNOVATION

- A.1 Theoretic Models of the Change Process
  - A.1.1 Havelock's Compendium
    - A.1.1.1 The Research, Development, and Diffusion Model
    - A.1.1.2 The Problem-Solving Model
    - A.1.1.3 The Social Interaction Model
    - A.1.1.4 The Linkage Model
  - A.1.2 The Elaborated Leadership Course Model
  - A.1.3 The Concerns-Based Adoption Model

## A. Educational Innovation

In theory, the purpose of innovation is to help schools accomplish their goals more effectively by improving programs or practices. Behind these innovations rests an assumption: That "many pressing social problems could be much more effectively addressed than they are at present by existing, underutilized knowledge systematically applied" (Leithwood, 1982, page 343).

Substantial evidence has demonstrated that the extensive reform efforts of the past twenty-five years have had little direct impact on classroom practice (Leithwood and Montgomery, 1982). Berman and McLaughlin (1976, page 348), reporting on projects receiving large-scale federal support, pointed out that the innovations "resulted in little consistent or stable improvement in student outcomes" and that

even successful projects lacked stability or transferability to other schools. Herriott and Gross (1979, page 11) stated that "nearly every systematic study of the fate of a specific educational innovation in public schools has concluded that its anticipated outcomes were not achieved, that its educational benefits were limited, or that it was not fully implemented."

Because lasting and significant change has proven to be difficult to achieve, innovation has been the subject of many research efforts. Even with this considerable focus on innovation, however, the existing literature on innovation has been criticized as being inadequate from a theoretical point of view. Giacquinta (1973, page 178) characterized the bulk of research as "show and tell" literature with little theoretical or methodological sophistication. Herriott and Gross (1979) viewed organizational change efforts in schools as lacking in theoretical orientation. Berman and McLaughlin (1976, page 347) noted that few studies have attempted to "test theories of change of identify components of success or failure." Fullan (1978 and 1982) and Leithwood and Montgomery (1982) were also critical of the literature, but expressed optimism that much of the foregoing work was prerequisite to the formulation of adequate theory to guide research and practice.

One result of these two elements, that is the disap-

pointing results of past change efforts and the lack of adequate theory, has been the development of systematic inquiry aimed at the identification and conceptualization of the processes involved in innovation. The four sub-sections which follow describe the progress of that inquiry to date.

## A.1 Theoretical Models of the Change Process

As noted earlier, a critical need in the study of innovation is the development and testing of theoretical frameworks of the educational change process. Attempts have been made to develop such a framework.

### A.1.1 Havelock's Compendium

Havelock (1979) published a compendium of literature on the innovation, dissemination, and utilization of knowledge which has served as a sourcebook for many other researchers. He categorized previous studies into three models and proposed a fourth model, the linkage model, combining elements of the first three models and the processes of producing, disseminating, and utilizing knowledge. Briefly, the four models he described were:

#### A.1.1.1 The Research, Development, and Diffusion Model

This model emphasizes the perspective of the developer

of an innovation. It involves four steps: research, development, diffusion, and adoption. The user is seen in a largely passive role, adopting an innovation developed outside the user system to meet a need which has been identified by developers who are also outside the user system. The major criticism of this model is, of course, exactly that lack of attention to the user. Havelock described the model as over-rationalized and excessively research-oriented.

A.1.1.2 The Problem-solving Model

This model represents a user-centred approach to change. The user identifies needs, determines problem areas, and searches for an appropriate innovatory approach to meet the needs identified. When a resource or innovation is identified as providing a potential solution, the user adopts the innovation, applies it, and evaluates its success. This model assumes that the change originates with the user.

The core assumption of the problem-solving model is that self-initiated change has the soundest motivational basis and the best prospects for long-term continuance. Havelock noted three problems with the model: it does not provide for large-scale or top-down innovatory thrusts, or for change arising from outside pressures; it places exces-

sive strain on the user; and it minimizes the role of the outside consultant involved with a change effort. Another problem is that, although six stages are identified in the model, five of these are adoption activities and only one is concerned with implementation. The model fails to adequately develop this crucial stage.

A.1.1.3 The Social Interaction Model

This model describes the change process as diffusion of innovation through informal personal contacts and the influence of decision leaders. Derived from agricultural diffusion literature, it assumes the existence of the innovation which is eventually adopted. The four stages of the model (knowledge, persuasion, decision and confirmation) are all adoption activities. Thus one shortcoming is the lack of specification of implementation elements by the model.

Other shortcomings include the lack of attention to the origin of the innovation; no attention to the process of adaptation of the innovation as it is used by the system; little coverage given to the processes of maladaption or rejection of the innovation; and a lack of attention to the application of the model to organizations such as schools.

A.1.1.4 The Linkage Model

Havelock developed a fourth model synthesizing elements

of the three earlier models. He attempted to provide in the model a unifying relationship between the outside resource system (the developers of innovation) and users through the element of "linkage". Again, of six phases specified in the model, only the final phase is concerned with implementation, and this phase is not clearly delineated.

The four models described above have offered some basic ways of conceptualizing the change process in general. However, they are based on a view of human behaviour which assumes that those involved in the innovatory process have clear goals, possess technical sophistication sufficient to identify and utilize superior products and processes, and are able and willing to adopt and implement the innovations they select. There is little evidence to support these assumptions.

More recent models have attempted to come to grips with problem areas specific to education. Two of these are worth examining here. The first focuses on the leadership for change, and the second on user concerns.

A.1.2 The Elaborated Leadership Course Obstacle Model

Herriott and Gross (1979) conducted an extensive study and analysis of innovation based upon five in-depth case studies of rural schools in the United States that were

involved in federally-funded change programs. All five change programs were judged to be unsuccessful. The researchers concluded that the failures were due to inadequacies in the way that administrators conceptualized the change process, in particular the obstacles facing innovation.

Herriott and Gross began their analysis with the use of the Overcoming Resistance to Change (ORC) model which posited that the success or failure of planned organizational change efforts was basically a function of the ability of management to overcome staff resistance that existed just prior to or at the time of introduction of the change. The chief limitation of this model was that it overlooked organizational conditions that could have an impact on the innovation after it had been introduced.

The Leadership Obstacle Course (LOC) model was then posited to overcome this limitation. The LOC adds to the initial model the requirement that, for successful implementation, five necessary conditions be established by the administration: clarification of the proposed innovation for all those involved; provision of skills and capabilities for staff who are to carry out the innovation; provision of necessary materials and equipment; establishment of organizational arrangements congruent with the innovation; and the motivation of staff to spend the time and effort necessary

to implement the innovation.

Further refinement based upon research resulted in the Elaborated Leadership Obstacle Course (ELOC) model. This model outlines five stages of innovatory efforts (exploration, planning, initiation, implementation, and incorporation) and the specific leadership tasks to be performed by the administrator at each stage.

The perspective of the Herriott and Gross ELOC model is clearly a managerial one. It assumes that retraining of users is essential, and that users will provide feedback about problems encountered that will facilitate training. Users are seen basically as information processing units on the assumption that, if the innovation is made clear and understandable, users will respond appropriately. It fails to consider the user other than as a source of obstacles to be overcome. It ignores the question of what other needs users may have, and the possibility of adaptation of the innovation depending upon the situation. Users have a limited role in planning, and only an advisory role during implementation. This is in contrast to the user perspective which assumes that users should decide or participate in deciding what innovations to implement and how to implement them.

Herriott and Gross's conceptualization of resistance by potential users requires further study. Giacquinta (1973)

made the point that resistance needs to be treated as more than simply a practical difficulty to be overcome, but must be studied as a social phenomenon in need of systematic inquiry. To a large extent, this is the approach which underlies the Concerns Based Adoption Model, which follows.

A.1.3 The Concerns Based Adoption Model (CBAM)

One of the most serious shortcomings of research into educational innovation has been the lack of reliable measurement of the extent of implementation of an innovation. Estimates of change have frequently been based upon "reported use", that is, personal and subjective accounts given by change agents, principals, and teachers (see, for example, Fullan and Pomfret, 1982; Leithwood, 1981; Hall and Loucks, 1976, 1977; Giacquinta, 1973). Positive reporting may not indicate usage, but only an attitude of acceptance. It may not represent the knowledge or skill necessary to implement the innovation, or the use of key elements in the innovation in a comprehensive manner. The absence of reliable measures of use runs the risk of evaluating what amounts to "non-events" (Hall and Loucks, 1976, page 264).

Hall and Loucks (1976, 1977) through the Concerns Based Adoption Model developed an approach which attempted to provide reliable evidence of the degree of individual and organizational use of an innovation. Their work in develop-

ing measures of use based upon the expression of user concerns and use of key categories of the innovation resulted in a distinct emphasis upon the role of the user.

The CBAM is eclectic. It integrates elements of all four of Havelock's models as well as elements from Fuller's work (1969). As distinct from Havelock, its focus is on the implementation of the innovation in an educational setting. It describes the change process as the interaction between the user system, the resource system, and the adoptive process resulting from the joint activity of the resource and user system. Thus it is a more comprehensive model than those reviewed earlier.

The CBAM is empirically grounded. Based upon eleven years of research in schools and colleges, it posits a developmental process that individuals experience as they attempt to implement an innovation.

Five key dimensions constitute the model to date:

a. Stages of Concern about the innovation, an assessment based upon a "concerns profile": the feelings, perceptions, motivations, and attitudes of teachers as they approach and use the innovation. Seven levels have been defined in the model.

b. Levels of Use of the innovation, which describes seven levels of behaviours of the individual besides non-use as he/she approaches or uses the

innovation (orientation, preparation, mechanical use, routine use, refinement, integration, and renewal).

c) The Innovation Configuration, describing and evaluating the different patterns or forms that an innovation may take as it is adopted and made operational by different individuals in different sites. Essential features or components of each innovation are identified and use/non-use is assessed on the basis of inclusion of these elements.

d) A change facilitator (an outside consultant or on-site administrator) who works with both individuals and groups. It is postulated that the general progression of concerns in a group or organizational unit can be predicted to some degree through the use of concerns profiles, Levels of Use, and Innovation Configurations. The facilitator can then design and implement interventions that facilitate the progress of the change effort for both groups and individuals (Hall, 1979).

e) An intervention taxonomy (Hall, Zigarmi, and Hord, 1979) is under development. The intention is to operationally describe and classify the various actions that a change facilitator and others undertake that influence the use of the innovation.

It is proposed that direct linkages can be made between the diagnostic components of the model and the interventions that are required.

The implications for implementation claimed on the basis of findings uncovered during the development of the CBAM include:

1. that change is a process that requires continuity of support.
2. that the model represents generic frameworks that can be used for across-innovation comparisons.
3. that the model allows for data collection regarding discrepancies in the way innovation is proceeding at the practitioner level which may not be consistent with the way policy makers and macro-level models describe them, thus allowing for corrective interventions at both levels.
4. that the unit-level manager plays a key role in facilitating the arousal and resolution of practitioner concerns.
5. that in order that summative evaluation of an innovation be reliable, it is important to have the users at the level of "routine use". Users at other levels of use are at non-use or beginning use, or are mutating the innovation, and therefore replicability and reliability of results is not possible.

The model has been criticized regarding its assumption that all innovators go through the fixed stages in exactly the same order, and/or do not regress to earlier stages. A universal set of stages may not be sensitive to differences among innovations and individuals. Leithwood (1981) suggests further refinements, one being to replace the single, fixed conception of stages intended to apply to all new programs with a set of procedures for defining stages specific to each innovation, and specific to the adaptations of the innovation that occur in each site of implementation. Such a refinement would overcome the problem of lack of sensitivity to differences in innovations, but it would complicate cross-innovation or cross-site comparison.

There is as yet no educational change model that has received general acceptance. Barrows, Klenke, and Heffernan (1979) in their research on innovation in thirteen school sites concluded that none of the six change models above adequately described the adoption experience in all the sites studied. Some of the models explained part of the adoption process in various sites, or several models combined to explain adoption behaviour in one particular school. They criticized all six models on the following points:

1. depiction of the change process as involving a linear sequence of events. Their data suggested three components which interacted dynamically but non-linearally over time: adoption context, preparation, and legitimization aspects such as administrative support.
2. lack of allowance for an external impetus or stimulus to change. The models assume planned incremental response to a problem. The research did not support this. Instead, external events such as a desegregation order and a school fire initiated some adoption decisions. Such events are not taken into consideration in the model.

Of the six models outlined, the two most recently developed (the Elaborated Leadership Course Obstacle Model and the Concerns Based Adoption Model) place major emphasis upon the role of the principal in planned change. Herriott and Gross (1979) focused on functions essential for the manager to carry out if the innovation is to be successfully integrated. Hall, Loucks, and their colleagues at the University of Texas Research and Development Center found that their initial focus on the user of the innovation evolved into a focus on principal interventions as a key to effective innovations. Obviously, much still needs to be discovered about the influence of the principal in regard to change.

## A.2 The Dimensions of Innovation

Educational change is multi-dimensional. Given the number of variables which interact and potentially affect innovation, research efforts which attempt to spell out and relate all of the factors and contingencies would end in a hopeless quagmire (Fullan, 1982; Leithwood and Montgomery, 1982; Berman and McLaughlin, 1975; Sarason, 1971). In order to conceptualize the change process, many researchers have identified what they have seen as significant phases, components, or promising approaches to the change process.

Most researchers now identify three broad phases of the change process (Fullan, 1982; Leithwood and Montgomery, 1982; Rosenblum and Louis, 1979; Berman and McLaughlin, 1979; Hall and Loucks, 1976, 1977; Giacquinta, 1973; Sarason, 1971). Phase I, initiation, consists of the process which leads up to and includes the decision to adopt or proceed with an innovation. Phase II consists of initial use and implementation. Phase III is the continuation, incorporation, or routinization, and refers to the stage at which the innovation is built into the ongoing system. Currently considerable effort has been directed toward study of the implementation phase (Fullan and Pomfret, 1977; Hall and Loucks, 1976, 1977; Berman and McLaughlin, 1976).

Another perspective has looked at dimensions within the school that are at stake in implementing new curricular programs and practices. Fullan (1982, page 30) identified three such dimensions:

a. the possible use of new or revised materials (direct instructional resources such as curriculum materials or technologies);

b. the possible use of new teaching approaches (that is, new teaching strategies or activities);

c. the possible alteration of beliefs (for example, pedagogical assumptions and theories underlying particular new programs or policies).

Fullan theorized that individual innovations may vary in their demands for change in these dimensions, with the majority of innovations involving substantial change in all three. He postulated that change consists of a dynamic interrelationship of the dimensions. The changes people experience in regard to their belief structure are a key to their developing a "sense of meaning" (page 62) in regard to the innovation. The development of this sense of meaning is critical to the change process if the people involved are to confront the behavioural and conceptual implications of the innovation. Fullan's work is one of the first to address specifically and comprehensively the issue of development of belief or a sense of meaning in the user as a condition for successful implementation.

Much of the data and a substantial amount of opinion based upon research has suggested that the total school -- its people, structures, curricula, and relationship to the larger community -- must be the focus of improvement efforts (Tye, 1981; Leithwood and Montgomery, 1982; Fullan, 1982; Hall and Loucks, 1976, 1977, 1981; and Sarason, 1971). D. Common (1981) reiterated this viewpoint in the comments she made about her search of the literature on innovation. She reported that the elements appropriate for study in implementing innovation include: 1) teachers; 2) administrators; 3) the school as an organization; and 4) the curriculum. She identified the following components of successful change:

- the prime unit for innovation is the individual school, and particularly individual classrooms in which the teacher understands the nature of the curriculum and its content.
- a clear decision to adopt the innovation at the school level is important prior to beginning implementation.
- the school administrator is the most important individual affecting the degree of implementation.
- implementation planning is essential to provide a set of conditions within the school structure so that the

instructional practices prescribed by the curriculum can occur.

Of the many factors that affect school-based change, researchers have consistently highlighted the importance of principal behaviours as one of the factors that is a key to effective innovation (Herriott and Gross, 1979; Leithwood and Montgomery, 1982; Fullan, 1982; Berman and McLaughlin, 1978; Rosenblum and Jaztrub, 1981; Hall and Loucks, 1978; Barrows, Klenke, and Heffernan, 1979; Blumberg and Greenfield, 1980; Edmonds, 1982; Emrick and Peterson, 1978, Hord and Goldstein, 1982; Venezky and Winfield, 1979). Systematic research on this important factor and its relationship to change has been conducted only over the past five years (Fullan, 1982; Leithwood and Montgomery, 1982; Rosenblum and Jaztrub, 1981; Hord and Goldstein, 1982). Much of this research is still in progress. Further in-depth knowledge of the principal as an important dimension of school innovation is needed.

### A.3 Strategies for the Implementation of Innovation

Fullan's definition of implementation (1982, page 54) is that it "consists of the process of putting into practice an idea or program new to the people attempting or expected to change." It is distinct from the decision to use, which

is defined as adoption, and from planned use, since the innovation in use may be quite different from intended use.

Researchers have come to the realization that it is essential to study the implementation process so as to understand the reasons why so many educational innovations have failed to become established. In many cases the lack of success has been attributed to the fact that the innovations have not been implemented, or have been only partially implemented (Hall and Loucks, 1976; Winklevoss, 1975).

Implementation research has a relatively short history. Studies focusing specifically on implementation have been prominent only over the last decade and a half (Berman and McLaughlin, 1978; Hall and Loucks, 1976, 1977). It is necessary to consider attempts at change in practice as still in the formative stages as far as knowledge gained from research is concerned.

At the same time, current implementation studies have made significant contributions to our knowledge. Research has taken a promising direction in this regard. Examination of the implementation process in detail has been undertaken. Three different research perspectives are examined in this section of the review.

### A.3.1 Fullan's Framework of Factors Affecting Implementation

Fullan (1982, pages 55 to 75) identified fifteen factors subsumed under four headings to which his extensive review of the literature pointed as significantly affecting implementation. Fullan emphasized that he did not view these factors as separate units, but as a system of interacting variables that causally affect implementation. The four main groupings and associated factors were:

a. attributes of the change itself -- need, clarity, complexity, and quality. (See also Hughes and Keith, 1980; Gaynor, Barrows, and Klenke, 1980; Barrows, Klenke, and Heffernan, 1979; Emrich and Peterson, 1978; Downey, 1975; Berman and McLaughlin, 1977; and Rosenblum and Louis, 1979).

b. characteristics at the school district level -- history of innovative attempts, adoption process, central administrative support, staff development, time-line and information system, and board and community characteristics. (See also Berman and McLaughlin, 1979; Rosenblum and Louis, 1979; Downey, 1975; Sarason, 1971).

c. characteristics at the school level -- the role of the principal, peer relations, and teacher orientations. (See also Leithwood and Montgomery, 1982; Berman and McLaughlin, 1978; Emrick and Peterson,

1978; Wilson, 1981; and Sarason, 1971).

d. characteristics external to the local system -- the role of government and external assistance. (See also Rosenblum and Louis, 1979; Berman and McLaughlin, 1978; and Herriott and Gross, 1979).

Fullan pointed out that the grouping of factors represents an organizational framework for thinking about change, not a model or blueprint.

Fullan made several cogent points regarding implementation:

a. the crux of implementation involves the development of a "sense of meaning" in those who are to be the implementers.

b. successful implementation demands the involvement of the principal.

c. the factors of implementation reinforce or undermine each other as an interrelated system.

d. implementation involves a process of mutual adaptation in which both the implementers and the innovation change in particular situations.

e. the implementation process cannot at this point in time (and perhaps never will) be completely planned or rationally managed. "It is patently impossible to manage social action by analyzing all possible alternatives and their consequences" (page 85).

> The need is to be able to understand what causes effective implementation, and how to influence those causes.

Fullan has attempted to provide a comprehensive overview of implementation. Because it is an overview, it lacks specificity in dealing with the factors identified.

### A.3.2 Leithwood's Strategy for Managing Curriculum Implementation

Leithwood (1981) developed a strategy for managing the curriculum implementation process consistent with his assessment of research findings. He evaluated this strategy in six Ontario school systems with a variety of curriculum innovations. The strategy consists of three phases:

a. diagnosis, which requires "identification of the goals for curriculum implementation, the discrepancies between existing and innovative curricula relevant to goal achievement, and the obstacles to overcome in order to reduce discrepancies and achieve the goals established for implementation" (page 344).

b. application, which calls for the design and carrying out of procedures for overcoming the lack of knowledge and skills, restructuring incentives and

rewards, and providing necessary material resources and organizational arrangements.

c. evaluation, both formative and summative, the latter requiring possible return to the diagnostic phase.

Leithwood placed major responsibility for the implementation process with the manager of the implementation, who in most cases would be the principal. He stated that the curriculum development tasks demanded by his model "do not represent a common view of this aspect of a manager's responsibilities, and may account for an additional portion of the failure of many implementation strategies" (page 349).

A.3.3 The Concerns-Based Adoption Model

The Concerns Based Adoption Model (Hall and Loucks, 1976, 1977, 1978) described earlier represented the study of implementation from a fresh perspective. The research involved in developing the model resulted in several significant findings regarding implementation which have received support from other research studies (Berman and McLaughlin, 1976, 1978; Fullan, 1982; Leithwood and Montgomery, 1982):

a. Any one innovation is usually operationalized in many different forms, that is, there will be an innovation continuum depending upon user adaptation

of innovation components. There may be differences of opinion among users, or between users and developers, as to what use represents an acceptable operational form of the innovation.

b. Mutual adaptation, that is some user change and some innovation change, has been postulated as the most successful innovation strategy depending on the nature of the components of the innovation.

c. The more complex the innovation, the more change required from current practice, or the greater the fidelity desired with the original model, the greater the need for implementation facilitation activities and an extended time-line.

d. The concept of innovation configurations suggests that evaluators need to determine which critical and related components are being used prior to attempting to determine implementation effects. They need to determine which components or combinations of components create the most effective configurations for meeting the objectives of the innovation.

Effective implementation depends upon a complex combination of factors. Increased understanding of these factors and how they interact in the school situation is essential to improve the effectiveness of school-based change efforts.

One key factor that has been identified in major studies is the school principal. The following section examines findings regarding the administrator's role.

## B. The Principal's Role in Implementing Innovatory School Programs

Research studies seem to present opposing views in regard to the school principal's influence in improving the quality of instruction in the classroom. However, under closer scrutiny the literature may not be contradictory, but rather offer differing lines of research that could well be used to explain each other.

One line of research has indicated that most principals play a relatively minor role in the learning outcomes of their schools (Shoemaker and Fraser; 1981; Cross, 1981; Gersten, Carmine, and Green, 1982). For example, Deal and Celotti (1980) have suggested that classroom instruction seems to be virtually unaffected by administrative and organizational factors. According to their study, there is little evidence of the principal's influence upon classroom learning.

The majority of principals, it seems, do not operate as instructional leaders or coordinators in their schools. Numerous researchers (Fullan, 1982; Martin, 1980; Wolcott, 1973; Sarason, 1972) have found that instructional leader-

ship is not a central focus for most principals. Leithwood, Ross, Montgomery, and Maynes (1978) carried out a study to find out how principals spend their time and pursue their tasks. They observed and interviewed twenty-seven principals from three school districts in Ontario. They classified the principals according to four categories: administrative (50%); facilitative (31%); directive (12%); and interpersonally oriented (8%). The administrative leader they defined as "essentially a passive observer of the curriculum process in his school. He keeps track of what is going on and makes suggestions on an infrequent basis; he becomes directly involved only if there is a problem" (page 66). In terms of curriculum and curricular change, then, one-half of the sample provided little, if any, leadership to school programs.

Thomas (1978) in her study of principals involved in alternative school programs in three locations in the United States identified similar principal roles to those of Leithwood, Ross, Montgomery, and Maynes. Of the principals studied, 49% were described as administrators, 26% as directors, and 25% as facilitators. Administrators were not perceived as effectively implementing innovative programs while the directive and facilitative principals were seen to be significantly more effective in implementing changes in school programs.

It would seem, then, that many principals do not focus on instructional leadership in the school. If this is the case, then it is understandable that many researchers have posited that the principal has little effect on classroom instruction.

Another group of researchers has contended that the principal is the key to innovative change (Berman and McLaughlin, 1978; Tye, 1981; Austin, 1978; Deal and Celotti, 1978; De Bevoise, 1982; Fullan, 1982; Hall, Rutherford, and Griffin, 1982; Rosenblum and Jastrub, 1980). In all the studies cited, there was evidence to suggest that principals could be extremely influential in the process of implementing change in instruction when they focussed upon instructional leadership.

Several examples can be drawn from these studies that illustrate this finding. The Rand Study of Federal Programs Supporting Educational Change (Berman and McLaughlin, 1976, 1977, 1978) studied the results of several types of federally sponsored educational change programs in 293 schools, each in its last or next-to-last year of funding. The study's focus was to discover what factors influenced the outcomes of the implementation projects. The investigators reported that "projects having the active support of the principal were most likely to fare well" (1977, page 124). They claimed that it was the principal's actions, and not

just words, that conveyed to teachers the message as to whether implementation was to be taken seriously, and that served to support teachers in their efforts to implement new programs.

The Teacher Corps projects (Reinhart, Arends, Kutz, Lovell, and Wyant, 1980) contributed similar findings in regard to the principal based on their field-based research in fourteen schools in rural, urban, and suburban settings. They found that principal involvement was critical at the initial stage of implementation. At later stages, principals of small schools where projects were developing successfully continued their involvement. In larger schools, the principal did not stay involved to the same degree, but "a pattern observed in successful projects was for the principal to remain interested and ready to problem-solve around obstacles the program might encounter" (page 9).

Hall, Hord, and Griffin (1980) monitored implementation of a revised science program in eighty elementary schools in Jefferson County, Colorado, over a three-year period. They assessed the level of implementation in each classroom. They found that the level of implementation by teachers in a school was a direct function of the principal's actions. In schools in which principals did not become directly involved

with teachers and their use of the science innovation, implementation was not judged to be successful. In other schools in which better levels of implementation were observed, principals "were concerned about supporting teachers in their use of the innovation, so on a daily or weekly basis they were monitoring what teachers were doing with science. They set policy within the school that clearly indicated that science would be taught. They worked on teacher-specific implementation problems. They also worked on the district-wide principals' committee for science" (page 24). The authors concluded that "the single most important hypothesis emanating from these data is that the degree of implementation of the innovation is different in different schools because of the actions and concerns of principals" (page 26).

The finding that the principal exerted so strong an influence on the degree of implementation led Hall and his associates to examine the "change facilitator style" of principals (Hall, Rutherford and Griffin, 1982, page 94). They conducted a series of nine case studies of principals as they facilitated the implementation of an innovation in their schools. The researchers concluded that principal emerged as a key factor in educational change and school improvement" (page 100) although those they studied used varying styles which the researchers grouped into three

categories: the Responder, the Manager, and the Initiator. All three styles proved effective for implementing the targetted change. The researchers noted that "the principals functioned differently in different types of schools" (page 101) and concluded that "the principal's change facilitator style should be placed within the broader framework of context" (page 107). They speculated that the concept of contingency leadership may be useful in examining how the principal and context interact, since "the same context is interpreted differently and used differently by principals with different styles" (page 116).

A contingency approach to leadership is, of course, not new. In trying to explain or recommend leadership behaviour, such an approach attempts to take into consideration both the personal characteristics of the leader and the situational characteristics. Tannenbaum and Schmidt (1958) set out a comprehensive framework emphasizing "forces" the leader must take into account to be effective, including the roles played by the leader, the subordinate, and situational variables. Because the concept of principal leadership has proven to be so complex and elusive, the contingency approach has recently received renewed focus, arising interestingly enough from case study investigations. One example is the work of Hall and his associates cited above. Another is the work of Blumberg and Greenfield

(1980), who through in-depth case studies of eight effective principals came to the conclusion that:

> any attempt to explain and analyze the behaviour of an individual must conceive of that behaviour as a function of that person's perceiving and interacting with a particular situation (page 231).

There is some evidence, then, that leadership effectiveness depends in part on the configurations of particular situations. Since the findings of the two highly-credible groups of researchers cited above converge on this point, further investigation into the relationship of principal behaviour and the contingency approach is warranted.

To return to the main focus of this review: if, as the evidence suggests, principals play a key role in implementing change at the school levels, there is a need to determine what the principal should do specifically to manage change. The most significant research to address this area has been that of Leithwood and Montgomery's (1982) research review of the role of the principal aimed at developing insights into that role in school improvement. The researchers synthesized findings from studies in three areas: the school in general, school effectiveness, and the implementation of innovation to develop a description of a set of behaviours (goals, factors, and strategies) which appear to differentiate "effective" principals (that is, those who have had a significant effect upon school improve-

ment) from "typical" principals. According to their model, school improvement is perceived as an incremental process of growth from less desirable to more desirable states. Effective principals are viewed as the most important element in this process of growth, their influence applying not only to student improvement (the "targets"), but to those responsible for facilitating such improvement (the teachers).

The authors concluded that effective principals were able to define priorities among school goals and to gain support for these priorities from both staff and community. The principal's selection of priorities was postulated to provide the basis for helping the principal determine which factors to attempt to influence. Having decided which factors to influence and the conditions desired within these factors, the principal engaged in an array of strategies (interventions) to exercise such influence.

The delineation of the dimensions of behaviour provided by Leithwood and Montgomery represents an important forward step in attempting to understand the impact of the principal upon school change. Although consistent with earlier findings, the dimensions of behaviour they provided are considerably more comprehensive and precise. Leithwood and Montgomery (1983) built upon their work in the 1982 study by attempting to provide a theoretical base for the discrimi-

nation of principal effectiveness. Their method involved establishing two groups (one elementary and one secondary) which used information from three sources (their own professional judgement, opinion data gathered from "convenience" samples of principals and teachers, and reviews of research) to develop a hypothetical profile of principal effectiveness. The researchers have since been involved in validating this profile and obtaining questionnaire responses on the profile from groups of central board administrators, principals, vice-principals, department heads and teachers, and by interviewing principals on the nature of their work. The structure of the 1983 profile differs substantially from the model derived from the 1982 research synthesis in two major respects. An element called "decision making" drawn from decision theory was added as a "superordinate problem- solving strategy" (page 45) posited as affecting the three categories of goals, factors and strategies. The most significant departure from the 1982 model was the addition of an over- riding element called "information processing" (page 15).This element, derived from psychological theory, was "explicitly developed to explain problem-solving behaviour" (page 15). The researchers point out that the addition of the information-processing element "was an outcome of our research, not a starting point" (page 15). In other words, it was part of

the hypothesis-building involved in developing and extending the profile of principal effectiveness, and was not based upon the kind of extensive field data which was the source of the categories and dimensions in the 1982 model. Its prominent place in the 1983 model can be perceived in the following statement:

> variations in principal effectiveness can be explained as differences in the way information is processed and problems are solved (page 18).

Leithwood and Montgomery are currently involved in the validation and extension of the 1983 model to include elements having to do with principal assessment, training, and selection (Leithwood and Montgomery, 1983; Leithwood and Fullan, 1984).

It is clear that the thrust of Leithwood and Montgomery's more recent research has to a considerable extent moved away from the "grounded" dimensions that characterized the 1982 research. The purpose of their more recent model has also shifted. It was not the aim of the 1983 model to provide "highly-detailed prescriptions" of principal behaviour, as in the 1982 review, but to develop "sets of middle-level procedures" for use by principals in problem-solving (1983, page 47). Thus the two models differ in structure, source and purpose.

There is, however, strong reason to research the vali-

dity of the dimensions of principal behaviour set forth in Leithwood and Montgomery's 1982 study. That work offers a model based upon grounded data drawn from a significant selection of methodologically-varied studies, a number of hypotheses that are eminently researchable, and detailed descriptions of "effective" and "typical" dimensions of behaviour that may prove of considerable value to both practitioners and researchers. Yet, to this investigator's knowledge, no research validation of the dimensions indentified in the 1982 model have been undertaken, nor has further significant new work in this particular area been carried out since then other than that described above.

In the research surveyed in this literature review, three broad perspectives that have dominated the study of the principalship can de discerned. The first perspective focused upon leadership theory based upon a priori generalizations which was applied to the principalship, and which research then attempted to verify through empirical evidence. The second perspective examined the principalship as a process and attempted to specify conditions under which certain traits were effective. More recently, a third perspective studied behavioural dimensions associated with principal effectiveness in bringing about school improvement, a prime example being Leithwood and Montgomery's 1982 study which built upon the work of many researchers. While

the current literature continues to speak to the importance of the principal in school improvement, research has tended to move in the direction of the first perspective, that is, developing theory as a base followed by empirical validation. The identification of specific factors that influence or determine principal effectiveness has not been continued as a direction in the research. The identification of such factors is a significant undertaking that should be continued.

A profitable direction would be to refine the 1982 Leithwood and Montgomery model by researching the dimensions of behaviour that have to do specifically with each of the areas their original synthesis encompassed, that is, the principal role in general; the principal role in developing a school that is effective in increasing academic growth across socio-economic levels; and the principal role in program implementation. It is to this final task that this research study is applied.

# CHAPTER III

## RESEARCH DESIGN AND METHODOLOGY

In this chapter the design and methodology used in this study are discussed under the following headings:

A. the research design;

B. the research rationale;

C. the sample;

D. data collection methods and instruments

E. data analysis

### A. The Research Design

The design was a case study which explored the issue of one principal's dimensions of behaviour as they affected the implementation of the computer awareness curriculum in an urban elementary school.

The conceptual framework suggested that two areas needed to be studied if the broad questions addressed by the research were to be examined systematically. That is, the study must investigate the principal's dimensions of behaviour and relate them to the implementation process influenced by those dimensions.

The case study was carried out by the researcher interviewing the school staff members, observing the curriculum

in use in the classrooms, and carrying out general observation in the school setting. From these data, inferences were made about the principal's dimensions of behaviour that were related to the extent of implementation.

Achievement of the purpose of the study required the use of a three-stage design. The first stage involved data collection and preliminary analysis on two elements:

1. the degree to which teachers had implemented the curriculum in the classrooms.
2. the dimensions of behaviour evinced by the principal.

The second stage synthesized and analyzed the data, comparing the dimensions of the principal's behaviour to those set out as characteristic of "effective" and "typical" principals in the modified Leithwood and Montgomery model.

The third stage involved applying the findings to the version of the Leithwood and Montgomery model used for the purpose of generating modifications and extensions to represent the dimensions of behaviour that are critical to the process of curriculum implementation, based on the thesis that curriculum implementation is a distinct process requiring specific behavioural dimensions on the part of the principal.

A preliminary pilot study was conducted by the re-

searcher in the fall of 1983 to examine the principal's actions in initiating the computer awareness curriculum in the school. That study highlighted the potential importance of the principal in setting new direction and generating policy for the school program. It pointed out the need to further investigate the effects of the principal's initiation and his efforts to implement the curriculum, in particular in relation to the dimensions of behaviour he employed.

## B. Research Rationale

The key to quality research is a well-conceived design that appropriately links the research problem, relevant theory, and methodological approach (Dobbert, 1982, pages 28-9). This section first describes the theoretical framework used along with modifications made to the framework for the purposes of this study, and then discusses the methodological paradigm chosen to study the research problem.

The Leithwood and Montgomery model (1982) was used as a template for the theoretical framework within which the study examined the principal's role in curriculum implementation. In developing their model, Leithwood and Montgomery (1982) attempted to define specific dimensions of principal behaviour. Their initial step was to develop a set of three

categories (goals, factors and strategies) under which specific dimensions were subsumed (Table I). The categories and dimensions were then used for organizing the data in the studies they reviewed. The researchers attempted to define each dimension in terms of "typical" and "effective" dimensions of principal behaviour through data and descriptions drawn from the existing research.

The study reported here is, to the researcher's knowledge, the first to attempt to apply the dimensions hypothesized by Leithwood and Montgomery to the realities of the principalship as carried out by one principal. The researcher found that it was necessary to develop a modified version of the framework appropriate for the purposes of the study. Each of the three major categories was investigated. However, it was decided that it was neither feasible nor appropriate to study every dimension nor to use the categories and dimensions exactly as they were originally set out. Three considerations guided the development of the modified framework:

1. the availability of a clear definition of the dimension in Leithwood and Montgomery's model. The quality and quantity of data available from existing studies was uneven and for some dimensions did not provide a sufficient data base upon which to

| CATEGORIES | DIMENSIONS OF BEHAVIOUR |
|---|---|
| 1. Goals | |
| 2. Factors | |
| | 1. Factors affecting student classroom experiences |
| | 1.1 The teacher |
| | 1.2 Program objectives and emphasis |
| | 1.3 Instructional behaviors of the teacher |
| | 1.4 Materials and resources |
| | 1.5 Assessment, recording, and reporting procedures |
| | 1.6 Time/classroom management |
| | 1.7 Content |
| | 1.8 Physical environment |
| | 1.9 Interpersonal relationships in the classroom |
| | 1.10 Integration |
| | 2. Factors affecting student school-wide experiences |
| | 2.1 Human resources |
| | 2.2 Material and physical resources |
| | 2.3 Relationships with community |
| | 2.4 Extracurricular and intramural activities |
| | 2.5 Relationships among staff |
| | 2.6 Relationships with out-of-school staff |
| | 2.7 Student behavior while at school |
| 3. Strategies | 1. Building/maintaining interpersonal relationships and motivating staff |
| | 1.1 Involving staff |
| | 1.2 Doing things with staff |
| | 1.3 Being positive, cheerful, and encouraging |
| | 1.4 Being with/available or accessible to staff |
| | 1.5 Being honest, direct, and sincere |
| | 1.6 Getting staff to express/set their own goals |
| | 2. Providing staff with knowledge and skills |
| | 3. Collecting information |
| | 4. Using vested authority |
| | 5. Providing direct service to students |
| | 6. Assisting with and supporting teachers' regular tasks |
| | 7. Facilitating within-school communication |
| | 8. Providing information to staff |
| | 9. Focusing attention on the special needs of students |
| | 10. Facilitating communication between the school and the community |
| | 11. Using goal and priority-setting and planning |
| | 12. Finding nonteaching time for staff |
| | 13. Establishing procedures to handle routine matters |

TABLE 1: DIMENSIONS OF PRINCIPAL BEHAVIOUR

Source: Leithwood and Montgomery, 1982, page 312.

formulate a definition of the dimension. These dimensions were omitted from the study. Those affected by this consideration were Factors 1.7, 1.8, 2.3, 2.5, and 2.7 and Strategies 1.3, 1.4, 1.5, 5 and 9.

2. relevance to curriculum implementation. Some dimensions were clearly irrelevant and were thus omitted from the study. This group included Factors 1.5, 1.6, 1.9 and 2.4 and Strategies 4 and 6.

3. the feasibility of collecting data for the categories identified. Some categories were extremely broad, and researching an area of such breadth would not be likely to provide a clear rating of the dimension. An example is the Goals category. Leithwood and Montgomery's description of this category provided a set of dimensions which were then used for the research, consisting of four dimensions of the goal orientation of the principal: the clarity of the principal's personal goal orientation, and his goal orientation toward students, teachers, and the community.

Certain dimensions contained a mixture of

areas, some of which had been clearly defined and others having no definition, such as the first dimension in Strategies. The investigator attempted to develop concise and researchable definitions of the dimension, which in some cases meant breaking a broad dimension down into manageable categories appropriate to the area under study. Thus Strategy 1.1 was examined under two headings, "decision making approach" (3.1) and "involving staff in the innovation" (3.2), both of which were clearly defined in Leithwood and Montgomery's research. "Doing things with staff" became "Principal's involvement in the innovation" (3.3) to more accurately reflect the emphasis in this study.

Some categories were combined because of redundancy in the placement or definition. For example, materials and resources appears twice in the Leithwood and Montgomery framework, and is discussed again under "Strategies" (page 327). In this study, it was decided that this item could most appropriately be researched under "Strategies".

The modifications made to the Leithwood and Montgomery (1982) model are shown in Table II.

Of the original model, then, the following dimensions

| CATEGORIES | DIMENSIONS OF BEHAVIOUR | RESEARCHED IN THIS STUDY |
|---|---|---|
| 1. Goals | (4 areas) | Used |
| 2. Factors | | |
| | 1. Factors affecting student classroom experiences | |
| | 1.1 The teacher | Used |
| | 1.2 Program objectives and emphasis | Used |
| | 1.3 Instructional behaviors of the teacher | Used |
| | 1.4 Materials and resources | Used |
| | 1.5 Assessment, recording, and reporting procedures | Irrelevant |
| | 1.6 Time/classroom management | Irrelevant |
| | 1.7 Content | No base |
| | 1.8 Physical environment | No base |
| | 1.9 Interpersonal relationships in the classroom | Irrelevant |
| | 1.10 Integration | Used |
| | 2. Factors affecting student school-wide experiences | |
| | 2.1 Human resources | Used |
| | 2.2 Material and physical resources | Incl. in "strategies" |
| | 2.3 Relationships with community | No base |
| | 2.4 Extracurricular and intramural activities | Irrelevant |
| | 2.5 Relationships among staff | No base |
| | 2.6 Relationships with out-of-school staff | Used |
| | 2.7 Student behavior while at school | No base |
| 3. Strategies | 1. Building/maintaining interpersonal relationships and motivating staff | |
| | 1.1 Involving staff | Used |
| | 1.2 Doing things with staff | Used |
| | 1.3 Being positive, cheerful, and encouraging | No base |
| | 1.4 Being with/available or accessible to staff | No base |
| | 1.5 Being honest, direct, and sincere | No base |
| | 1.6 Getting staff to express/set their own goals | Used |
| | 2. Providing staff with knowledge and skills | Used |
| | 3. Collecting information | Used |
| | 4. Using vested authority | Irrelevant |
| | 5. Providing direct service to students | No base |
| | 6. Assisting with and supporting teachers' regular tasks | Irrelevant |
| | 7. Facilitating within-school communication | Used |
| | 8. Providing information to staff | Used |
| | 9. Focusing attention on the special needs of students | No base |
| | 10. Facilitating communication between the school and the community | Used |
| | 11. Using goal and priority-setting and planning | Used |
| | 12. Finding nonteaching time for staff | Used |
| | 13. Establishing procedures to handle routine matters | Used |

KEY
used = researched
No base = Leithwood and Montgomery were unable to define this dimension through existing research
Irrelevant = Not applicable to the study of curriculum implementation

TABLE II: Modifications to the Leithwood and Montgomery Model (1982)

were researched, some using modified headings:

Goals - 4 dimensions

Factors - 1.1, 1.2, 1.3, 1.4, 1.10, 2.1, 2.2 and 2.6.

Strategies - 1.1, 1.2, 1.6, 2, 3, 7, 8, 10, 11, 12 & 13.

The modified framework upon which this study was based is shown in Table III. The full definition for each dimension as derived from the Leithwood and Montgomery study (1982) is provided in Appendix A.

The validity of the modified model used in the study was an issue that had to be given consideration. Validity in this instance had to do with the revised version of the model used as compared to the 1982 Leithwood and Montgomery model.

A model is not valid per se; it is valid for a particular purpose and for a particular setting or group (Gay, 1981, page 110.) As well, validity is never perfect, but instead is a matter of degree. Keeping in mind these statements, validity was attended to in this study in three ways:

3. careful structuring and selection of elements drawn from the Leithwood and Montgomery (1982) model. It should be noted that the Leithwood and Montgomery (1982) model is itself not a tightly-integrated unit, but a "set of hypotheses in need of further testing" (Leithwood and

| |
|---|
| 1. GOALS<br>1.1 principal's priority for students |
| 1.2 clarity of goals |
| 1.3 orientation to teachers |
| 1.4 communication with parents |
| 2. FACTORS<br>2.1 teacher selection |
| 2.2 clarity of objectives |
| 2.3 instructional strategies |
| 2.4 integration of program objectives |
| 2.5 funding sources |
| 2.6 division vs. school goals |
| 3. STRATEGIES<br>3.1 decision-making approach |
| 3.2 involving staff in the innovation |
| 3.3 principal's involvement in innovation |
| 3.4 encouraging staff improvement |
| 3.5 providing for teacher knowledge and skills |
| 3.6 information gathering |
| 3.7 provision of resources |
| 3.8 in-school communication |
| 3.9 planning strategies |
| 3.10 routine task handling |

TABLE III: DIMENSIONS OF PRINCIPAL BEHAVIOUR: MODIFIED FRAMEWORK

Montgomery, 1982, page 335.) Their model is basically a set of categories with definitions where available drawn from existing research. Relationships that could be posited between categories were limited. While the "goals" category was hypothesized to have some relationship to certain "factors" (in particular, factors 1.1, 1.2, 1.3, 1.4, 1.10 and 2.1, all of which were included in the revised model used in this study), the researchers stated that "the present state of research evidence does not permit the establishment of relationships between 'factors' and 'strategies'" (page 325). Thus the issue of relationships between elements of the model was attended to in structuring the revised model where such relationships were indicated in the 1982 model.

Careful attention was also given to the selection of categories. All of the "goals" dimensions were included in the model. Since the "goals" category was, in Leithwood and Montgomery's view (1982) the prime area of difference between "typical" and "effective" principals, retention of this entire category was judged essential to the validity of the revised model. The next most important category was that of "factors". Here all the relevant elements having a data base were used. The issue of relevance was determined in relation

to applicability to the purpose of the study, that is, the examination of principal dimensions of behaviour in implementing an innovation, and each item was screened according to this purpose. Since the categories studied were discrete elements in the Leithwood and Montgomery (1982) model, to omit those which were clearly irrelevant was not deemed to be damaging to the structure of the model. A similar process of category selection was used in regard to "strategies." As examination of Table II will indicate, the elements not included in the revised model were those of little importance to the study of principal dimensions of behaviour related to implementing an innovation. The categories which were studied consisted of a focussed group of elements essential to the purpose of the study.

2. use of a phenomenological approach. The model used in the study was a set of categories which were not end points in themselves, but middle points based upon related previous knowledge and leading toward new interpretations. The field-based approach tested and fleshed out the categories studied by means of the data collected, making allowance for additional aspects or conflicting evidence. This approach allowed for the emergence of elements that might not have been present in the original model as well as the extension of those that were included.

3. the research results. The most important criterion in determining the degree of validity of the modified model is whether or not it was a good enough fit to reality to serve as a trustworthy guide to the conduct of the investigation, that is, whether it reflected a clear, representative picture of the given situation (Dobbert, 1981, page 259). The results of the research supported the validity of the model in two ways:

   a) through the internal consistency of the findings and the ability of the model used to account for and explain the full range of data collected. The model proved to have sufficient categorical breadth to account for the data with the exception of the bi-modal nature of principal dimensions of behaviour, which arose from the data in this particular instance and was not included in the 1982 Leithwood and Montgomery model.

   b) through member checks. This methodological step provided verification that a complete and accurate account of the dimensions of principal behaviour related to the implementation emerged through the use of the revised model.

The nature of the research problem in combination with the theoretical framework determined the research approach utilized.

Two primary considerations influenced the design of the research approach: the interest in determining the dimensions of principal behaviour and their influence upon the implementation effort, and the state of present knowledge about curriculum implementation.

Since the intention of this study was to explore and generate conceptualizations of the principal's role in regard to curriculum implementation, the interest was in developing and analyzing school-generated data on the principal's dimensions of behaviour and their relationship to the implementation.

In regard to curriculum implementation, most studies have tended to look at student outcomes. There has been a relatively limited examination of the process itself or the specific influences at work within the institutional setting outside of the identification of influential factors. Consequently such studies do not furnish clear empirical evidence about the process of implementation in the school, or in-depth evidence about the components that contribute to its success or failure. It was the intention of this study to develop empirical evidence about both process and influential factors.

Research theory recognizes two basic paradigms of inquiry: the rationalistic or normative and the natural-

istic or interpretive (Cohen and Manion, 1980; Guba and Lincoln, 1982; Smith, 1979). The rationalistic paradigm operates under the assumption that reality is single, tangible, convergent, and fragmentable. Its perspective is that there are general and universal laws determining social behaviour, and data is used to develop generalities about objective reality or absolute truth with the aim of prediction and control. The naturalistic paradigm, on the other hand, assumes that knowledge needed to understand human behaviour can be acquired only through inquiry into the dynamic nature of social interaction. There are multiple, intangible realities, and these can be studied only in a holistic manner, for to fragment the whole is to cause significant alteration of the realities. The aim is to search out modes of explanation based on data found in the situation itself.

The naturalistic paradigm was judged most appropriate for this study, since the purpose was investigation into the social and behavioural interaction involved in a human phenomenon, with the data being used to develop description, analysis, and conceptualization of that phenomenon. Thus the study was not constructed with experimental or quasi-experimental standards as criteria.

The case study has been championed as a suitable approach to the study of both principal behaviours and inno-

vation, in particular curriculum implementation (Blumberg and Greenfield, 1982; Leithwood, 1981; Herriott and Gross, 1979; Greenwood, Mann, and McLaughlin, 1975). The approach was appropriate to this study for the following reasons:

1. The case study is able to provide the kind of data needed to analyze the dynamics of change efforts, including holistic perspectives, longitudinal data, unexpected occurrences, and reciprocal interplay among factors.
2. The case study has the capacity to provide insight into the principal's role in implementation and the influence of his actions and strategies on those who implement the change.
3. The case study can provide information that can help determine the impact of decisions made at different stages of the process on the outcomes of implementation. The approach can enable the researcher to see relationships between events that otherwise might be overlooked or not included in the research boundaries, and that might prove useful in generating concepts for further study.
4. The case study is a study of process as well as outcome. A complex outcome such as curriculum implementation tends to be worked out over time in a series of partial reformulations. The stages of

deliberation and negotiation can be examined by the observer. As well, any examination of such complex conducts needs to take into consideration mental operations: beliefs, perceptions, preferences, feelings, and judgements. The case study allows for this.

5. The case study is a problem-centred approach. Data is collected with expectations and directed vision, but with a readiness to reconceptualize as the data accumulate to take account of the empirical reality of the situation. Thus the case study offers the opportunity for the researcher to examine alternate models, concepts, and strategies in light of the data.

The decision to use the naturalistic paradigm and the case study approach raises critical methodological issues that must be addressed in terms of the present study. The discussion which follows identifies two basic issues and the measures taken to resolve them.

One basic issue is that of observer bias. The researcher must guard against his/her own perceptual biases. Guba and Lincoln (1982) suggest that, in field studies, the practice of "reflexivity", an open-minded respect for all kinds of data that come into the researcher's purview, is essential. Reflexivity involves awareness of and efforts to

take into consideration one's underlying assumptions, reasons for formulating the study in a particular way, and implicit biases and prejudices about the context, problem, or subjects.

The researcher attempted to maintain a reflexive attitude, what LeCompte and Goetz (1982) term "disciplined subjectivity" toward all aspects of the study. Elements of the methodology used in the study were also chosen to help minimize this source of bias. Triangulation, the use of a variety of data sources and perspectives that are pitted against each other to permit cross-checking of data and interpretation, as well as participant reaction and confirmation, were utilized at all levels of the study as a means of guarding against researcher-induced distortions.

Another critical issue is that of external validity, or what Guba and Lincoln have termed "transferability" or "generalizability". A case study of one school, indeed the naturalistic paradigm itself, discounts generalizability, although it is Guba and Lincoln's claim that "some degree of transferability is possible under certain circumstances" (page 247). Those circumstances exist if enough "thick description" is available about the school under study and the school considering change to make a reasoned judgement about the degree of transferability. Herriott and Gross (1979) have made a broader claim about transferability,

viewing case studies as a form of "vicarious experience" valuable to those individuals preparing to manage implementation. "Even though school systems and their communities vary in many respects, and such variation needs to be taken into account in designing change strategies, an analysis of the elements common to most change processes and the essentially similar kinds of decisions that must be made can provide vicarious learning experiences of considerable value" (page 22).

Since "thick description" was implicit in the design for this study, it is expected that some degree of transferability of the findings will prove useful to other educators involved in curriculum implementation.

## C. The Sample

The school which was the sample for this study was selected from among the school representatives attending the meeting of the Computer Awareness Pilot Project Grades Four to Six group in October, 1983. It should be noted that the pilot schools and teachers involved in this project were self-selecting, that is, volunteers. Of the twenty-five attendees, four were school principals. One principal along with the school he represented, not previously known to the researcher, was selected that met the five criteria determined prior to the meeting and listed below:

1. the principal as chief initiator of the project;
2. the principal and the pilot teacher both in attendance at the meeting;
3. consent on the part of the principal for the study to be conducted in the school;
4. no experience prior to initiating the curriculum with the use of computers in the classroom on the part of school staff;
5. intention on the part of the principal to provide leadership to the end that all the teachers in the school participate in using the computer awareness curriculum in their classrooms.

The criteria for school selection were chosen because it was expected that a school meeting those criteria would provide rich data concerning project implementation and principal influence. Because the researcher was interested in a project that would be likely to show some success in implementation and thus provide useful insights about the change process, three of the criteria (the principal as initiator, the principal and the pilot teacher both in attendance, and intention on the part of the principal to implement the curriculum through the entire school) had to do with elements in the principal's approach to the curriculum that are associated in the literature with successful school implementation. These are: principal

support for the change, the active involvement of the principal in activities to expand his knowledge of the curriculum area to be implemented, and principal leadership provided to the change process. While previous research indicates that there are few exemplary projects, and that there are frequent discrepancies between data reported and the reality of project operation, it was hoped that this method of selection would improve the chances of examining a significant project involved with curriculum implementation.

The school selected was an urban elementary K-6 school with a population of the principal, vice-principal, twenty classroom teachers, two specialist teachers, three itinerant teachers, and five hundred twenty students, along with five maintenance and two clerical staff. Subjects for the study were the principal, the vice-principal, and sixteen of the classroom teachers who agreed to participate in the study.

## D. Data Collection Methods and Instruments

Four methods of data collection were used:

i. interview;

ii. observation;

iii. documentary analysis;

iv. member checks

These methods were chosen since in the researcher's opinion they were the most appropriate for the data needed.

Description and detailed rationale for each of the four methods follows.

i. The Interview

The interview was an appropriate technique for the research for two reasons:

a. data were required about past events, most of which were not documented.

b. data were required about individuals' perceptions, feelings, beliefs, and reasons for action.

Interviews can provide these kinds of information.

The strengths of the interview as a data collection method are significant (Gay, 1981; Cohen and Manion, 1980). It is flexible, both in terms of time constraints and the ability it allows the interviewer to adapt the situation to each subject. It provides a high response rate. It offers the possibility of eliciting in-depth data from the subject undergoing interviewing. By establishing rapport, the interviewer can often obtain data that a subject would not give on a questionnaire. People are more apt to disclose themselves, their thoughts, feelings, and values than they would in a less human situation. The interview may also result in more accurate and straightforward responses than other methods since the interviewer can explain and clarify both the research purpose and the questions being asked.

Incomplete, divergent, or unclear responses can often be followed up by additional questions or a request for clarification. The interview can serve as a validity check against observation as well as providing direct information.

The interview method has obvious weaknesses which must be taken into account. Inferences about validity may be made on the basis of face validity, that is, on the basis of questionable measurements that may or may not be measuring what they claim to measure. Invalidity may also result from bias, a tendency to make errors in a particular direction, that is, the consistent understatement or overstatement of the true value of an attribute. Sources of such bias might be the characteristics of the interviewer, those of the respondent, and/or the content and wording of the questions.

However, the researcher can take steps to reduce the elements of error due to incorrect inferences or bias and hence improve validity and reliability. In this research, the following steps were taken. There was careful formulation of questions so that the meaning was as clear as possible. Validity of the interview data was checked through pre-testing of the teacher interview schedule, providing assurance of confidentiality, fully recording the interviews, and re-checking and cross-checking divergent data. Reliability was increased by interviewing all of the

consenting classroom teachers who were present during the period included in the study, and by cross-checking data derived from different people and collected by other data collection methods (observation and documentary analysis).

Certain features were common to all of the interviews used in the study. The type of interview used was a semi-structured one to allow for full collection of data. A flexible time schedule was used, the average interview length being one hour. Interviews with teachers were scheduled where possible during preparation times or at times when another staff member or a student teacher could be scheduled to take their classes. Teachers were informed a few days in advance by memorandum of the interview appointment.

The purpose of the interview was explained during the introduction. Steps were taken to reduce possible bias. Interviewees were asked not to discuss the interviews with colleagues until all the interviews were completed. The researcher gave assurance that the information given in the interview would be treated confidentially. Arrangements were made for the researcher to take unresolved problems back to the participants for further comment.

Questions were open-ended. They focussed on the dimensions of behaviour of the principal, and the actions, responses, and perceptions of the teachers as they undertook

responsibility for the implementation. A retrospective focus was used in a portion of the study.

Interviews were tape-recorded and later transcribed. The interview schedule applied to classroom teachers was pre-tested with two teachers who were not regular classroom teachers, one being the physical education and the other the Special Education teacher, both of whom had been staff members for the two years prior to the study. These teachers were then excluded from the remainder of the study.

ii. Observation

The second method used in this study was direct non-participant observation. This method was chosen to provide information on classroom implementation of the new curriculum and on patterns of principal behaviour and principal-teacher, teacher-student, and principal-teacher interaction.

Several advantages are obvious in the non-participant observation approach (Cohen and Manion, 1980):

a. the observer is able to view ongoing behaviour firsthand in its natural setting at the time it occurs, and to note salient features.

b. data on non-verbal aspects or behaviour patterns such as those involved in communication can be collected through observation.

c. the natural environment can allow the researcher to

develop an informal relationship with those being observed, and can thus facilitate collection of an array of data appropriate to the particular study.

d. observations may be less reactive than other types of data-gathering methods. Verbal responses to structured questions, for example, may introduce bias in the data being gathered simply through the area on which the questions focus or the wording of the question. Observation, taking place as it does in the natural setting and without the direct intervention of the observer in the activities taking place, may result in more accurate data on aspects that can be studied in that manner.

The disadvantages of non-participant observation also have to be considered:

a. atypical behaviour of the observed due to the presence of the observer.

b. perceptual bias on the part of the observer.

c. limitations to the number and variety of stimuli to which the observer can pay attention.

The disadvantages were countered in this study in the following ways:

a. prolonged engagement at the site. Repetition of observations was used to give a high degree of acquaintance with the salient activities and to

provide an opportunity for those being observed to become accustomed enough to the presence of the observer that they could use normal behaviour.

b. an unobtrusive role being taken by the researcher during observations.

c. assuring subjects of anonymity and confidentiality.

d. triangulation, whereby observational data was checked against interview and documentary data.

e. member checks, whereby data and interpretations were checked throughout the study with various members of the group from which the data was drawn.

iii. Documentary Analysis

The third data collection technique used was documentary analysis. Records already in existence were used for analysis; hence they were used mainly in reference to past events pertinent to the study.

Two possible categories of material for documentary analysis are (Fox, 1969):

a. deliberate sources, those in which a conscious effort has been made to record or preserve information, such as curriculum committee minutes.

b. inadvertent sources, those which provide information about the subject under study even though that was not the original intent of the source.

Examples are proposals written to support a particular line of action, memoranda, or reports.

Each of these sources has its advantages and disadvantages for the researcher. The deliberate source presents a subjective view of events, recording an individual impression or report. This may make it difficult to obtain a fully developed view of the event under study. Inadvertent sources require inference on the part of the researcher. Since the source is being used for something other than what was intended, however, the inadvertent source tends to be a relatively objective piece of data.

One advantage of documentary analysis is the lack of distortion of the information due to the passage of time, as happens with reliance on memory. A disadvantage is that the researcher is limited to examining what exists, which may have significant gaps or may not exist at all for crucial areas under study.

The reliability of data gathered through documentary analysis can be assessed by examining the data for internal and external consistency, that is, establishing the extent to which the information is consistent within and across documents and across data collected from other sources about the same event. As part of the triangulation method, this study conducted checks on data collected through documentary analysis by comparing that data with that collected by means

of interviews and observation.

iv. Member Checks

At the final stage of model formulation, feedback data was collected from personnel at the school site by inviting them to correct errors of fact and supply alternative explanations or modifications to the model developed by the researcher. This process helps to assure validation of the findings and of the subsequent model (Miles, 1979, page 128).

## Data Collection

Data were collected applying to two time periods: the past period of implementation (September, 1983 to February, 1985); and the period concurrent with data collection (March, 1985 to May, 1985).

### Past Period of Study (September 1983 to February, 1985)

Two methods were used to collect data pertaining to this period:

i. interview.

ii. documentary analysis

The interview method was used to collect data about the past from:

i. the principal.

ii. the vice-principal.

iii. the 15 regular classroom teachers who consented to participate in the interviews.

Interview data included:

i. perceptions on the part of the principal and teaching staff of the principal's behaviour in regard to the three categories under study (goals, factors, and strategies).

ii. the pattern of the implementation process.

iii. obstacles and concerns that surfaced during the implementation process, and their relationship to the principal's dimensions of behaviour.

Documentary sources included:

i. within-school memoranda.

ii. one school-to-superintendent memorandum.

iii. meeting agenda:

- one staff meeting agendum.
- one computer committee meeting agendum.

iv. one notice to parents.

v. two computer schedules for in-school use.

vi. four lists of computer equipment and computer software available in the school covering the period between September 1, 1983 to October 30, 1984.

vii. two agenda and two sets of minutes for the Computer Awareness 4-6 Pilot Teachers Curriculum meetings.

The above documents were the only ones available during the data-collection period.

Current Period of Study (March to May, 1985)

For this period, the two data collection techniques used were:

i. observation.

ii. interview.

Observation

In collecting data by observation, both structured and unstructured non-participant observation was employed. Structured observations of the following were conducted:

a. level of use of the computer program by each of the 15 classroom teachers who consented to observation, including:

i. teaching personnel present, and the teacher's role in teaching the curriculum.

ii. which of the five key components of the curriculum were being used,[1] and the proportion of time devoted to each.

iii. level of use of the curriculum by the teacher

(non-use, orientation, preparation, mechanical use, routine use, refinement, integration, or renewal).

b. resources available for teaching the new curriculum in each classroom.

Classroom observations of teacher utilization of the computer awareness curriculum were scheduled prior to the interviews to that the observation served as a check on the validity of the interview accounts of the categories and degree of use of the curriculum. Teachers were given the opportunity to explain or justify their actions to the observer during the interview.

Instrument

The instrument used to collect data through observation in the classroom was the classroom observation schedule.

The purpose of the schedule was to provide a structure for the observer to use during observation of each teacher during a classroom instructional period when the computer awareness curriculum was scheduled to be taught in the classroom. Observation was for the purpose of assessing the teacher's level of use of the curriculum and as a means of validating the data elicited during the level of use interview with each teacher. The instrument used is specified in Appendix "D".

Unstructured observations throughout the school were conducted to examine:

i. patterns and directions of communications between principal-staff and principal-community.

ii. the level of resources available in the school for teaching the computer awareness curriculum.

iii. communications among teachers and between teachers and students pertinent to the study.

A guide was not developed for these observations. The inquirer's intent was to observe these events as they occurred normally in the life of the school. Observations were conducted on eleven occasions, and consisted of 5 general observations in various locations in the school, 3 staff-room observations, 2 staff meetings, and 1 observation period in the Learning Centre.

Interview

To determine current conditions, interviews were conducted with:

i. the principal.

ii. the vice-principal.

iii. the fifteen regular classroom teachers who consented to participate in the interviews.

Interview data were collected on the following elements:

i. perceptions of the principal's dimensions of behaviour for the twenty dimensions studied.

ii. the process used to implement the curriculum in the school.

iii. the current state of the implementation effort, both in terms of the use of the five key curriculum categories, and the level of use of the curriculum by each teacher.

Interview guides mapping out the areas of inquiry were developed. The interviews, although focussed, were unstructured in that, while the guides served as a reminder to the interviewer of the areas that needed to be covered, the interviewer was not restricted to the guide questions and was free to ask additional questions, to repeat questions, to request clarification, and to move off on tangents that showed promise of providing information useful to the purpose of the research. A separate guide was used for interviews with the principal and vice-principal from that used with teachers.

The interview guide for the principal (Appendix "B") encompassed:

1. questions structured to elicit the data needed to determine which of the two categories of dimensions of behaviour ("typical" or "effective") he utilized

for each of the twenty dimensions studied.

2. his perceptions of the degree of implementation of the computer awareness curriculum in each classroom.
3. his perceptions of the process of implementation of the new curriculum in the school.
4. his perceptions of obstacles to implementation.

The interview guide for the vice-principal (Appendix "C") encompassed:

1. her perceptions of the principal's dimensions of behaviour in regard to the twenty dimensions under study.
2. her perceptions of the process of implementation of the new curriculum in the school.
3. her perceptions of obstacles to the implementation.
4. her role in the school in regard to administrative and instructional functions.

The interview guide developed for the teacher interviews (Appendix "E") encompassed three elements:

1. the teacher's perceptions of the dimensions of principal behaviour in regard to the twenty dimensions under study.
2. the teachers' perceptions of the overall process and degree of implementation in the school.
3. the level of use of the computer by the individual teacher.

A modified version of the Levels of Use (LoU) interview developed by Hall, Loucks, Rutherford, and Newlove (1975) was used as an instrument for interviewing teachers to determine what level of use they were actually making of the Computer Awareness Curriculum in the classroom. The only change that was made in the interview format was the inclusion of the five criteria of use specific to the Computer Awareness Curriculum[1] which allowed the interviewer to identify the respondent as a user when three or more of the five criteria had been used by the teacher.

The Levels of Use scale (Appendix F) and interview process were developed at the University of Texas Research and Development Center for Teacher Education. The developers describe the Levels of Use structure as follows: (Hall, Loucks, Rutherford, and Newlove, 1975, page 54):

> Levels of Use are distinct states that represent observably different types of behaviour and patterns of innovation use as exhibited by individuals and groups. These levels characterize a user's development in acquiring new skills and varying use of the innovation. Each level encompasses a range of behaviours, but it is limited by a set of identifiable Decision Points. For descriptive purposes, each level is defined by seven categories.

The three essential ingredients of the LoU, that is, the levels, decision points, and categories, were integral parts of the LoU interview as used in this study.

The purpose of the LoU interview is to gather sufficient data from individuals using the innovation to allow the researcher to assign a level of use to each user. The interview begins with questions focused on user behaviours relevant to the decision points. The questioning follows a branching format. Decision and behaviour questions support each other and contribute to the assignment of an LoU rating. The use of the LoU measure demands establishment of specific criteria prior to the interviews in order for use/non-use decisions to be made quickly and consistently during the series of interviews. Five use criteria were identified,[1] based upon the five topics which make up 100% of the time allocation in the K-6 Computer Awareness Curriculum. A user was defined as an individual using at least three of the five essential elements of the Computer Awareness Curriculum. Those using fewer than three were defined as non-users.

For teachers designated as users, the LoU rating form (Appendix "G") was used to code the data from the interview in each of the seven categories, using the LoU Scale as a guide sheet for determination of the overall LoU. The rating procedure for determining the overall LoU level was based on a "gestalt" -- a combination of marks on the rating sheet and the impressions of the rater about the user's application of the innovation. In spite of the subjective

nature of some elements in the rating procedure, inter-rater agreement in assigning Levels of Use in other research studies has proved to be high, ranging from .85 to .95 (Hall, 1979, page 11).

The limitation of the LoU that may have affected this study are:

a. LoU is based on the assumption that a higher LoU rating indicates a higher quality of innovation use. This could be questioned, since "routine" use may be of a high quality not surpassed by the quality of use represented by, for example, that of the "renewal" stage. This limitation did not have a significant effect in this study, however, since most teachers were not expected to and had not achieved more than "routine use" in the time since the project had been mounted, and none were working at the level of "renewal".

b. A further assumption underlying LoU is that individual teachers progress through an identical sequence in their use of an innovation. It is possible that stages in the progression might be skipped, or that regression to lower stages occurs. The data from research to date, however, supports the assumption of progression.

c. The tendency for a majority of LoU ratings to

cluster at the IV-A (Routine Use) level has been noted (Klenke and Barrows, 1980). However, this issue was judged unlikely to affect the research adversely, since implementation at the routine level of use would be viewed as positive considering the time line and complexity of the innovation.

## E. Data Analysis

Data analysis had as its focus the research problem, which was to relate the dimensions of behaviour of the principal to curriculum implementation. The purpose of this section is to discuss the procedures used to permit the researcher to draw valid inferences from the data.

Guba (1978) has depicted the practice of qualitative inquiry as a wave on which the investigator moves from varying degrees of a "discovery mode" to varying emphasis on a "verification mode". The investigator studies what has emerged from the data and, as inquiry reveals patterns, begins to focus on verifying and clarifying what seems to be emerging. At this point, data collection and analysis becomes deductive. The approach taken in this part of the study was to move back and forth between separate elements and the complex of elements, between parts and the whole, in what Kuhn (1982, p. 13) termed a "sorting-out, putting together process".

The design began with specific observations and built toward general patterns. The researcher attempted to understand the multiple inter-relationships among dimensions that emerged from the data without making prior assumptions about linear or correlative relationships. The inductive approach meant attempting to reach an understanding of principal and program activities and outcomes from experience within the setting.

The first stage involved tracing what Berman and McLaughlin (1978) call an "implementation path" for the implementation process. Data from interviews and documentary analysis were reviewed and references to stages and events occuring during the implementation process were used to construct a developmental outline of the course of implementation. Particular attention was paid to the dimensions of principal behaviour as they impacted on various stages.

The second stage was the derivation of an assessment of the level of use by each classroom teacher of the computer curriculum based on a modification of the Levels of Use scale (Hall and Loucks, 1976). This step combined information from observation, interview, and documentary analysis, which was then charted to give an overview of the implementation pattern in the school as a whole. This provided a baseline indicating the degree of implementation

that had taken place to this point in time by teacher, grade level, school section (primary or elementary), and the school as a whole.

Third, the principal's dimensions of behaviour (Appendix "A") were analyzed and assessed as characteristic of either "effective" or "typical" principals. The responses of the principal and each teacher to the interview questions were analyzed. Responses were tallied and a table of ratings developed. The procedure used for determining the ratings was as follows:

1. assessment of each response through examination of the overt meaning and, when necessary, content analysis.
2. comparison of the content indicative of the principal's dimensions of behaviour with those specified as characteristic of "effective" and "typical" principals in Leithwood and Montgomery's (1982) formulation.
3. determination of a judgement as to whether each person's responses indicated "effective" or "typical" behaviour on the part of this principal for each item of the dimensions of behaviour being considered.
4. determination of an overall rating for each item based on the "gestalt" of responses provided.

The above procedure provided a numerical assessment of the principal's dimensions of behaviour on the twenty dimensions under consideration. More importantly, it provided an emerging matrix of the principal's dimensions of behaviour both in regard to the school in general and in regard to the implementation effort.

Refinement of the profile of the principal's behaviour was carried out through comparative analysis of the assessments making up the evolving profile with other data collected to determine congruency across observational data and documentary analysis of pertinent material. Cross-checking and rechecking of disparities, incongruities, unclear responses or assessments, and possible biases were also carried out at this point.

Where high congruency among all sources was noted, some confidence in the accuracy of the profile and a measure of internal consistency could be inferred. Data from one source that was at odds with or did not support that from another source entailed the collection of further data and/or reconceptualizaiton of the phenomena.

The purpose of the fourth step in the analysis was to begin the sorting-out, putting-together process. Description and analysis of the relationships between the different categories of information generated in the earlier steps was undertaken. The emerging profile of the principal's dimen-

sions of behaviour and the degree of implementation was analyzed with the purpose of determining which dimensions of the principal's behaviour were characteristic of the principal, and which were critical in their impact on the implementation process. Comparison of the empirical and theoretical evidence followed in order to highlight areas of the original model that needed to be refined, refocussed, discarded, or extended.

The final step involved developing modifications and refinements to the initial model of the principal's behaviour specifying dimensions critical to the process of curriculum implementation in this school. Inductive and deductive techniques described in conjunction with the preceding steps were used to make higher order abstractions about the relationships among the various elements. These abstractions underwent a process of verification through taking them back to the respondents for their examination and reaction about the extent to which the emergent elements and the relationships postulated were appropriate for the phenomena under study, and the extent to which they worked to explain what had occurred.

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Notes

[1]The five key components of the Curriculum Awareness Curriculum as identified in the Grades 1-3 and 4-6 Computer

Awareness Interim Guide (Manitoba Department of Education: Winnipeg, Manitoba, 1985) were as follows:

1. Hands-on use of the computer in the classroom.
2. Classroom instruction on the component parts of a computer and how a computer works.
3. Classroom instruction on how computers have developed in a historical sense (not necessarily a formal historical approach).
4. Classroom instruction on using a computer to develop academic and thinking skills: problem-solving, logical thinking, discovery-based learning, and drill-and-practice.
5. Classroom instruction on the role of computers in our lives, that is, technology in the home, school, and community.

# CHAPTER IV

## THE IMPLEMENTATION OF THE COMPUTER PROGRAM

The approach to the problem of this study entailed generating, analyzing, and relating data regarding the relationship of two elements: the degree of implementation of the computer program up to the time of the study, and the dimensions of behaviour of the school principal. The purpose of this chapter is to present an overview of the pattern of the implementation effort and an analytic description of the level of implementation that had been achieved at the time of the study.

The presentation is organized into three parts. In the first part is a brief historical account of the establishment of the subject school. In the next part, the implementation path is described. In the third part, the data on the levels of use of the innovation are presented and analyzed to provide a description of the implementation progression and a decision as to its level of success.

### A. A Brief History of the Subject School

It is customary that a case study present a brief historical outline of the research situation. Smith (1979) called this form of descriptive narrative "a first-level interpretation" which helps understanding by outlining the

change processes the group has experienced over a period of time. Guba and Lincoln (1981: 325-6) further asserted that "knowledge of the originating context" involving "literal description of the entity being studied" is essential for understanding, and also expands the usefulness of the case study, since "provision of this information makes it possible for persons in other settings interested in the possible worth of the entity being studied in their contents to make a rapid determination about fittingness."

A further reason for beginning this study with a brief history is derived from its fundamental aim of further developing the modified Leithwood and Montgomery model of the dimensions of principal behaviour to better describe dimensions critical to the process of implementing curricula in the elementary schools. This kind of conceptualization is facilitated by a knowledge of the historical events encountered throughout the process used in the subject school to implement the program under review.

## The Subject School

Ardo School (a pseudonym)[1] first opened in September of 1982. Built in a new multi-cultural middle-class residential suburb, the school is modern and well-designed.

Initially, there was no school in the plans for the community. The parents in the area, according to the principal:

> "fought for the school to be built. The school really didn't get off the ground until the parents lobbied very strongly for it. I think the initial expectation of the parents was that the parents were so happy to have the school that they would have accepted anything. There is a lot of parent involvement and the involvement is really a support for the school."

The school is an attractive one-story brick structure built around a hexagonal core. It contains twenty-one classrooms, a materials resource centre located at the hub of the school, two gymnasia, a multi-purpose room, a staff-room, a materials preparation room, and an office unit. The two kindergartens are located in a unit near the gymnasia. The regular classrooms are located in four "pod" units, each housing two grade levels. Each pod has an open-area space containing wet sinks and cupboards, small seminar rooms for resource teaching, small group or remedial work, and a door opening directly onto the playground.

Planning for the operation and staffing of the school began a year in advance of its opening. The initial task was the selection of the principal. The division chose Mr. Allan, a man who had been a teacher in the division and for the previous four years had served as principal in one of the division schools. As was the custom in the division, he was granted paid leave for the eight months prior to the opening of the school in order to plan and prepare for school opening. Selection of the staff began with the vice-

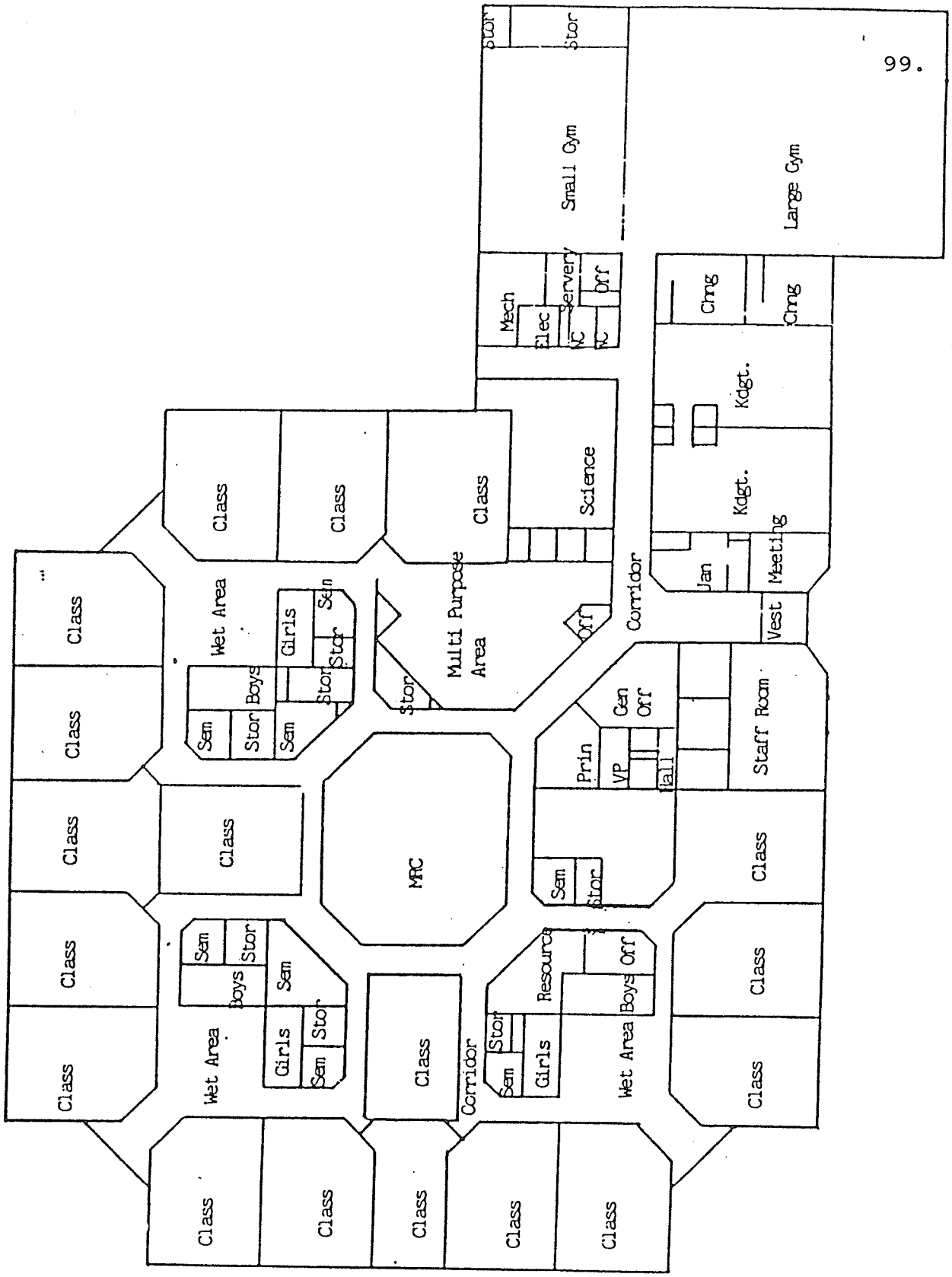


Figure 1: Floor Plan of the School

principal. The principal was involved with the Superintendent's Department in selecting Mrs. Evans for the position, and then the two of them interviewed the teachers who had applied to come to Ardo School. Since the school division was experiencing a downturn in enrollments at some of its schools, and wanted to utilize teachers already under contract to the division, applicants were restricted to teachers already working in the division. Of the sixty candidates who applied, the principal and vice-principal selected twenty.

Because of the restrictions placed on the selection process, the teaching staff were all people with a minimum of five years of teaching experience. This factor had significant implications for the manner in which the principal worked with the staff. Reference is made to this factor later in the study.

Placement of teachers was a process of attempting to coordinate their requests with school needs. The principal explained:

> The initial selection of staff as far as grade level was concerned was in a general area. We knew what the teachers requested, and we basically tried to fit that in. Barbara (the vice-principal) and I having been in the division basically knew most of the teachers we interviewed from having taught with them, worked with them, whatever. We had a pretty good idea of where people fit, along with their request for a grade level. There were changes made, where we felt

> that this was a teacher we wanted but we didn't have a grade level position that was the exact one they asked for. We discussed possibly not only with that teacher but with several, so basically the grade levels were the result of the teacher's request for teaching that grade level.

The principal and vice-principal set out some general principles as to how they would work together as the administrative team:

> I work closely with Barbara. Together we designated areas. For example, particularly resource and English-as-a-Second-Language are hers, very often the Child Guidance liaison is hers, and certain kinds of curriculum things are more hers than mine. One of the things I'm saying is that this school had certain needs because it had an experienced staff. I felt my job description was different from what it might have been previously. And we have tried to fit that between Barbara and me.

The principal also set out how he saw his role in the school:

> I'm not a strong person for going into classrooms and getting them to change particular things. I think my role is more of a support and an encouager rather than a strict changer of curriculum and philosophy. It depends on the teachers you're working with, of course, and this is a very strong, experienced staff, and they have a lot of strengths that I don't have in curriculum areas. So I saw my role as being a supplier and provider, someone they could come to and talk to, and helping out in any way I could.

The principal considered the building of a good relationship with the community as an important priority during the time of planning and getting ready for the school to open:

> Parents have been involved in the planning of the school. We had parent meetings even before the whole staff was assembled, and we've had a strong functioning parent committee.

One of the requests parents made before the school opened was that a basal reading series be used in the primary grades. The school adhered to this request when classes began.

Year I

The school opened according to plan in September of 1982. 582 students began classes. The teaching staff consisted of two kindergarten teachers, 18 teachers for grades one to six, a resource teacher, and a physical education teacher. In addition there were the principal and vice-principal, three part-time itinerant teachers for music, E.S.L., and French, five teacher aides, two secretaries, and five custodial staff. The Arno teaching staff, as is typical of elementary schools, was a predominately female staff, having 19 female and six male teachers.

The administrators and teaching staff held a session the fall the school opened to sort out how they would operate as a school team. The vice-principal recalled:

> We did have an inservice after the school opened. I had hoped we'd do it before the school opened.

No clear-cut program goals toward which the school would work were set out, but general directions and intents were developed. The principal stated that "an initial

goal--remember we're dealing with a new school--so an initial goal was just that kids would get together and would react well together." The vice-principal recalled that "developing a community cohesiveness and a good relationship with the community was important." Another topic the principal addressed at the session was that of decision-making in the school:

> It's the same as the first time I met with staff and talked about group decision-making, whatever you want to call it, collegial decision-making, decision-making as a whole. My position was that I'm all in favour of group decision-making, but there are certain things that I reserve for my own decision. I will give you my reasons for them and you are welcome to try to change my thinking, but in the end I am the one who is responsible, and the decision has to be one that is accepted by me . . . as long as I can justify or accept the reasoning, then the decision is fine.

The first year, then, saw several broad parameters for the school established: the general goals, the direction of community relationships, and the decision-making process.

## Years II-IV

Years II to IV at Ardo School were characterized by relative stability. A similar number of students attended the school each year. A Special Education teacher and class were added in the third year of operation. Four teachers took leaves, three on maternity leave and one on study leave. One of those on leave decided not to return, so the school was able to hire a teacher from outside the division

for the first time, and a teacher who had recently graduated from the Faculty of Education was hired. Leaves allowed the remaining staff to request changing their grade level teaching assignment if they wanted to fill the vacancy.

School-community relations continued to develop. The school hosted several school functions a year to which the community was invited. There were concerts, musical performances, picnics, sock-hops, parent days, and science fairs that brought parents into the school to see some of its accomplishments. A team of 26 to 30 parent volunteers gave of their time to come to the school and assist with children in the classroom or in developing learning materials.

## B. The Implementation Path for the Computer Program

This portion of the study sets out a chronology of the critical events in the implementation effort that had taken place up to the time of the study in the spring of 1985.

The need to study the implementation process has been strongly suggested in the literature review presented earlier in this study. In discussing the unrealistic truncated view of the change process that most educational administrators have, Gross (1973: 25) states:

> These approaches to educational change completely ignore the fact that the most difficult problems of obtaining change in schools generally arose

> after innovations are introduced. Introducing innovations is not the basic problem--it is seeing that they get implemented. It also deserves note that, if an innovation does not get implemented, it is useless to evaluate it, a fact that is ignored completely in nearly all evaluation studies.

The implementation time-line is shown in schematic in Table IV. The process, as described in the interviews conducted with the administrators and subject teachers and refined by the interactive process of data collection, can be set out as follows:

Step 1: Principal's perception of the need for the computer program

The principal identified awareness as the first step he took in the process. He described his awareness as developing "over the two years" before he initiated the computer program, mainly in the year previous to implementing (that is, the 1981-82 school year). When asked why he decided that the computer program was a need in his school, he explained:

> I started to get interested, and through that interest and seeing what's being done, I realized the direction that things were heading in. I realized for my own three children where I want them to be, and I guess I had the same desires for the ones at school. I feel it's a need that students have. I also feel it's a tremendous motivating thing . . . It's something I want in my school, because if I'm in a school, I want my school to be a leader, not a follower.

| | |
|---|---|
| 1981-82 | Growth of principal's perception of the need for a computer program. |
| 1982-83 | Sept. 1982 - School opened.<br>Oct. 1982 - Principal began sharing his perceptions of need with the staff.<br>Dec. 1982 - Principal acquired the first computer and began the process of familiarizing the staff. |
| 1983-84 | Sept. 1983 -Involvement in the Computer Awareness Pilot Project.<br>-Involvement of two additional teachers to form a computer leadership team.<br>Dec. 1983 - School-wide inservice on computers.<br>Jan. 1984 - Formation of the school computer committee.<br>- Ongoing professional development for teachers.<br>- Beginning of computer use in classrooms.<br>Apr.-June 1984 - Acquisition of additional computers. |
| 1984-85 | Sept. 1984 -Full complement of computers in place, assigned to specific grades, and time-tabled for use.<br>-Cataloguing and descriptions of software partially completed and ongoing.<br>March-May 1985 - Data collection on the implementation effort. |

Table IV: Time-line Showing Critical Events in the Implementation Effort

The principal gave several motives, then, for his early interest in implementing the computer programs: children's need to be informed about computers, his belief that computers can motivate students, and the desire that his school be a leader among schools.

An early step the principal took was that of aligning himself with other principals:

> Two other principals and myself went visiting a whole host of schools looking at computers, who was using what, and the advantages and disadvantages.

He also discussed the issue with the superintendent:

> Just in conversation with Mr. Marland, I'm very aware that he's supportive of computers and computer awareness.

STEP 2 - Sharing the perception of need with the staff -- September to December 1982

The first step the principal took with staff was to attempt to convey to them the awareness of the need he had perceived and to have them share that sense of need:

> Staff - everyone - has to be aware that hey, there is this thing out there that can do these terrific things, and that we should want one of them, or ten of them, and we should want to get involved ...So part of the leadup was Barbara and me getting involved. And we came back to staff meetings and reported that she and I had visited this school and they had this kind of program and it looked great. I guess the initial step was an

> awareness kind of thing, followed by a "propaganda blitz" that this was the sort of thing we should be moving towards.

Step 3: Acquiring the first computer--December 1982

The principal proceeded to develop a proposal requesting special funding from the school division to purchase a computer for the school. When he received the funding, he took it as a further sign that the school division was in favour of the direction he was taking:

> Other schools had requested funds before a certain deadline, but we hadn't. So ours was a sort of "over and above" that they could really have said "No" to because we were late. So that was a pretty clear indication of support.

In December of 1982, the principal purchased the computer. He described the direct action he took:

> I'm not one who thinks the school can't function without me, and so if there's something I want to see elsewhere, I go and see it, or if there's something I want, I'll go and get it . . . For example, when I wanted the computer, I didn't send the thing to the school board office and then let them send the order and so on. I wrote it up, took it to the Board, I got the approval, took it to the company, and picked up the computer. I brought it back to the school and within an hour and a half it was set up in the school.

Step 4: The process of familiarizing teachers - December, 1982 and ongoing

Initially the computer was set up in the staffroom. The principal described the approached he used:

> The first while it was available for staff to fool around with. We didn't try to introduce the classes--we didn't have anything to do with children. It was for staff to look at. We held a few demonstrations. We allowed teachers--never mind, we encouraged teachers to take it home on weekends . . . So after awareness comes overcoming the fear factor . . . You look at this new thing and say, "How am I going to implement it?" Well, part of it is realizing that it's not a brand-new subject; it's a certain change in methodology. That's what we did at the end of that year and also the beginning of the next year.

Step 5: Involvement in the computer awareness pilot project - September, 1983

In the fall of 1983, the Manitoba Department of Education began working with a group of schools who were interested in piloting the K-6 Computer Awareness Curriculum which had just been developed. The principal seized on the project as another way of forwarding his goal of implementing the computer program by giving it validity in the eyes of teachers as well as developing another source of leadership in the school:

> We involved Bob (a classroom teacher) in this program because I felt the pilot program would be a good push, and if other people see that someone's involved in the program it encourages them, plus you've got another leader, a staff leader, not an administrative leader, which is important too.

Both the principal and the pilot teacher, Bob Wilton[1], attended the meetings of the pilot project group, and the curriculum was piloted in Mr. Wilton's classroom.

Step 6: Involvement of two additional teachers to form a leadership team

Two other male teachers had indicated an interest in the computer, and by the fall of 1983 the principal devised a way to manage school arrangements so that they could work as resource people with other teachers in the school. The two teachers along with the pilot teacher were released from their regular teaching duties for a forty-minute period each day during the time that the French itinerant teacher took over their classes. During this time they were timetabled into other teachers' classrooms to teach the computer awareness program, in this way teaching not only the students in the classroom but modeling the program for the teacher as well. They trained students from their own classes as well as from other classes to serve as computer "proctors", able to set up computers and run programs. They also trained parent volunteers to work through computer packages with students individually or in small groups. As a further responsibility, they, along with the principal, worked through computer diskettes to select materials for acquisition and to recommend appropriate programs to use at the various levels in the school.

The principal worked closely with the three resource people throughout the implementation. The four became an in-house leadership team.

Step 7: School-wide inservice - December, 1983

The next step was providing an all-day inservice for the entire school staff.

It is noteable that at no point in the implementation process up to this point had the principal discussed the decision to implement computers with the school staff. Whether or not to proceed with computers was not in fact a decision staff was asked to make. One teacher commented:

> There was no "decision" to implement the program. We were going to implement the program.

Consistent with this approach, the inservice was mandated by the principal. He explained that he felt there was a need for inservicing, so:

> . . . at the staff meeting I really didn't give them much of a chance. I said I saw two real needs: one was language arts and the other was computers and since I thought it would be very good if we introduced computers in the new year that we should use this time on December 2 to do a workshop on computers, and I took the responsibility for planning that. I see that as a major step toward implementing. And I'll be leading part of the workshop.

The inservice consisted of two parts. In the morning teachers were given an introduction to the Computer Awareness Curriculum. In the afternoon there was a hands-on session. Everyone was able to have access to a computer because the principal had borrowed a number of computers from other schools for the day.

Step 8: Formation of the computer committee - January, 1984

One teacher explained how the school computer committee came into being:

> An overall plan was developed by the principal and the three resource people for how the whole school would be involved. That was discussed at a staff meeting, and we got all those who'd like to take part in a computer committee to come forward. We had a committee from then on to do most of the planning. The committee would report back to the rest of the staff.

The committee structure was not without its problems. An early problem was outlined by a teacher:

> One area that came up was that a lot of people wanted to be on the committee, and the committee itself became too large. You'd have more than one person from a grade level, or you just had a lot of people, and you'd start seeing who was going to become too vocal.

The number problem was dealt with by having one person represent each two grades. The principal and resource people made up the remainder of the committee.

A second problem was the role the principal took in the decisions for which the committee was to be responsible:

> Some of us came to think that the principal was taking on too large a role . . . He had some things already in his mind, like what kind of equipment we should buy and how many, and a lot of us felt he made those decisions, not the committee . . . I think at times it wasn't really a

> consensus or a working committee. It was him bringing a lot of ideas and expertise and us saying, well, that will be fine. We didn't have to struggle through some of the decision-making as a group.

A third problem area was the substance of what was dealt with at the committee meetings. Three teachers expressed concern that the meetings tended to deal "more with the technology kind of thing and not the curriculum at all."

Step 9: Acquiring additional computer equipment

Concurrent with Step 10, which details the process of providing professional development in regard to the computer program for teachers, the principal mounted a major thrust to acquire additional equipment.

Two sources of funding were tapped to provide hardware one being the regular school budget and the second money raised by the school's parent committee.

By September of 1983, the school had purchased one Atari 400 through special funding from the school division, and two Apple IIE computers by utilizing school funds. Within a year, that is by September of 1984, the school had added the following equipment:

4 Atari 400's

2 Apple II C's

3 Atari 600 XL's

1 Atari printer

2 Image Writer Printers

A comparison of the computer holdings of the six elementary schools in the division shows that, of all the schools, Ardo had the most equipment. Ardo had acquired two-and-a-half times as much equipment in dollar value as the next-highest school on the list, and had six times as much equipment as the school at the bottom.

The bulk of the funds for this additional equipment had been raised by the parent committee. That initiative had come about by means of the principal approaching the committee, outlining what he wanted to be able to do with computers over the next year, and asking that the parents raise funds to supply the equipment necessary to move in the direction he had laid out.

The principal informed the computer committee of this appeal, and through it the staff as a whole, and asked for their support. Agreement was reached that whatever monies were raised by the parent committee would be spent on computers.

The parent committee took on the funding task with enthusiasm and ingenuity. They raised enough money to purchase the equipment outlined previously, complete with

monitors and several disk drives.

Some conflict arose among staff about the uses of the money the parents raised and the decision-making connected with it. One teacher explained:

> The decision was made as a staff that we'd like to reach a stage where we have one computer per grade level. And when several purchases had been made, the question was--wouldn't it be more of an advantage to spend it on library books rather than computers? But a reminder was all that was necessary, to remind people that we had decided that. Two months, three months later, people were saying we could use it for something else. But he went with the position we had established first. There will always be hurdles.

The decision-making connected with spending the money also caused some conflict. One teacher said that the principal:

> just bought and bought and bought. I don't think he even asked our opinion eventually. He just kept buying. And I think a lot of people were upset by that. I <u>know</u> that people were upset about that.

The principal's actions resulted in the consternation of some staff who felt that the agreement on which the computer committee was based and under which it reported to staff was that the committee should be sharing in the decision-making in regard to which computers to purchase.

## <u>Step 10: Providing for the professional development needs of staff for the computer program</u>

The December, 1983 inservice on computers spearheaded

what was to be the principal's main professional-development thrust for teachers over the next eighteen months. One of his goals was that he wanted to see every teacher using the computer both as an object of teaching (computer literacy) and as a tool for the learning process.

In undertaking the activities provided to increase teacher knowledge of computers, the principal clearly showed his determination to push for a complete-school approach. He did this in two ways:

1. He developed personal expertise in the computer area even though initially he said that he "knew nothing" about it.
2. He undertook an ambitious effort directed at developing teachers' knowledge and use of computers at all levels of the school.

The principal used a wide-ranging approach to develop his own expertise. During the year prior to the initiation phase, he aligned himself with two other principals and together they visited fifteen schools which had programs using computers. He took a Radio Shack course on simple programming. He attended two pilot project meetings, read widely, attended inservices and conferences on computers in education, familiarized himself with the two levels of the Computer Awareness Curriculum that were applicable to his school, and researched the various types of computers in

order to choose the kinds that would best suit the school's program. He served on the divisional computer committee, and led inservices at the divisional level and in other schools. He purchased a computer for use in his own home, and worked with it during summer vacation. His ongoing work with the three resource people in the school also furthered his expertise. The four of them spent extensive periods of time during and after school hours and on weekends testing different kinds of computers, viewing and discussing software, setting out a plan for the development of the program in the school, and working out their individual roles and timetables. The principal became the top expert in the school, a fact which he acknowledged:

> I know that I'm the most informed on this staff, and I'm likely . . . the most informed principal in the division in this area as well.

The principal employed a similar wide-ranging approach to encourage and assist teachers to develop expertise in the computer area. Tables 39, 40, and 41 in Appendix "H" set out staff responses illustrating the range of approaches used, who were involved, and their roles. The principal explained what he saw as the goals of the processes used to help teachers develop their knowledge and skills:

> One was to familiarize people with the machines so they'd know it wouldn't bite them. The second area was to provide them with knowledge of some programs that they could use easily in the classroom. And the third area was to provide them with

an awareness of the curriculum.

The single most significant activity was the provision of the three resource people for classroom instruction and modelling on an ongoing basis. Since the initial stage of utilizing a new approach creates anxiety and uncertainty, this source of ongoing technical assistance and psychological support was a crucial element. One kindergarten teacher explained how this system helped her cope with the new program:

> Because I teach two classes, a morning and an afternoon, (the resource person) came in the morning and wasn't able to come in the afternoon, so I would try to do and model what he did in the morning. That helped me and yet it kept me on my toes because he would explain how to run some of the programs and I'd be taking notes so I'd be able to do it on my own in the afternoon. It was good.

Because the implementation was taking place in a school in which teachers had virtually no background in computers, the learning of the new skills involved was a developmental process which was considerably enhanced by the availability of resource people to work individually and regularly with teachers, providing application and materials suited to the grade level.

Inservices provided another approach. The first school-wide inservice, which was largely the work of the principal, has been described earlier. The staff did not support devoting another entire inservice day to computers.

The process used for determining topics for inservice days was to survey staff and develop a program for the year based on the results of the survey. Other topics took precedence during the second and third year of the school's existence.

The principal, being a good strategist, found ways around this problem. He worked with the resource people to implement mini-inservices of one to two hours in length at noon hour or after school. These sessions focussed mainly on the second goal area the principal had cited, that is, helping teachers become familiar with programs that could be used in the classroom, or assisting them with simple programming so that they could create customized spelling drills for use with their students.

The principal had hoped initially that all staff would attend these sessions, but staff pressure resulted in them being offered on an optional basis. Sometimes attendance was disappointing. One teacher said:

> I'd like to see more follow-up. At times we'd say we wanted more and there'd be noon workshops that were optional. Some attended and some didn't. There could have been a little closer monitoring and pressure to attend. And yet I'd probably hear from my colleagues: why is this being done here and not for Language Arts? So that becomes a difficult area for an administrator.

It was indeed a difficult area for the principal. He very much wanted all teachers to take advantage of the opportunity to develop expertise. At the same time, some teach-

ers were accusing him of "pushing" the area too much. A careful balance had to be maintained between recognition of and regard for jealously-guarded teacher autonomy and the kind of ongoing pressure that would bring about the implementation desired.

Other approaches used to provide teachers with knowledge and skills were of a more incidental nature than the two set up above. They included:

- support for individual activities. Approvals for people to attend conferences, other school inservices, and divisional inservices and mini-sessions were readily granted. On occasion the principal drew people's attention to opportunities and encouraged them to attend.
- attention to the resource base. One of the resource people undertook to organize and annotate the software that had been acquired to make it more readily useable for staff.
- availability of the principal to discuss computer use or materials and to help out in the classroom if a teacher ran into problems. One teacher said that "90% of the time he will come to your aid" in such a situation. Another stated that "He would have things set up in his office and call people in during prep time making you aware of what was there and what could be done."

Certainly the implementation effort did not proceed without hitches and conflicts. The problem of the principal who might be faced with a considerable investment in unused equipment if teachers decide not to use it, the need to continue to develop strategies, and the unevenness of teacher utilization are nicely summed up in the words of Glen Hayes, one of the resource people who had worked to help the school implement the program:

> The biggest hurdle now for the administrator, what he never wants to see, is thousands of dollars worth of equipment standing idle. And that's why, if you have teachers who become reluctant or not interested or choose not to have any time, you have to develop strategies to overcome that. You can restructure to create more interest. There no doubt has been and will be some teachers that have been more reluctant than others. But on the other hand there've been teachers that are more excited than others, and I think things balance out.

## C. Levels of Use of the Computer Program

Up to this point in Chapter IV, the school's development along with the implementation path of the computer program have been set out. The next task was to analyze the data generated to provide a baseline that would indicate the degree of implementation that had taken place to this point across the school.

In many innovation studies, the presence of implementation is taken for granted rather than being systematically documented. Use of the innovation in the classroom is not

examined at first hand (Hall and Loucks, 1977, page 264). In this study it was considered critical to develop accurate information as to whether implementation had actually occurred and to identify the individual teacher's level of use in order to conceptualize the effects of the dimensions of principal behaviour and to posit which (if any) had been critical in affecting implementation levels.

The Levels of Use model developed by Hall and Loucks (1975) was utilized to determine these levels. The model, described more fully in Chapter III, calls for two types of data collection for each teacher: classroom observation and a Levels of Use interview, with the two sets of data converging to provide a "gestalt" rating of the teacher's levels of use of the innovation.

In planning for the two types of data collection, a decision was made as to the method of defining what constituted "use" of the computer program consistent with the method established by Loucks, Newlove, and Hall (1975, page 31). The user was defined as a teacher who had regularly-scheduled Computer Awareness class periods and who was using or had used at least three of the following five critical categories as defined in the Computer Awareness Curriculum:[2]

1. hands-on use of the computer in the classroom setting.
2. classroom instruction on the component parts of a

computer and how a computer works.

3. classroom instruction on how computers have developed in a historical sense (not necessarily a formal historical approach).
4. classroom instruction using a computer to develop academic or thinking skills: problem-solving, logical thinking, discovery-based learning, or drill and practice.
5. classroom instruction on the role of computers in our lives, that is, computer technology in the home, school, and community.

Observation

Observation was used as an alternate source of information to confirm the accuracy of the Levels of Use interview ratings, and a means of providing first-hand experience for the researcher on the computer program as it was being conducted at the classroom level. Observations were carried out prior to the Level of Use interviews in order that data could be clarified during the interview based upon the information the researcher had gained through the observation of the teacher, and probing questions asked where information given during the interview might seem to be at variance with what had been observed in the classroom. Observations were considered to be a necessary but not a sufficient activity, mainly used to support and confirm the

Levels of Use ratings.

A classroom observation schedule (Appendix C) was used to gather and analyze data. The schedule included:

1. personnel present, and the teacher's role in the computer program.
2. the five critical categories of the computer program.
3. a preliminary estimate of the level of use of the program by the teacher (non-use, orientation, preparation, mechanical use, routine use, integration, or renewal).
4. resources on hand for the computer program.
5. direct or documentary evidence of student work on and involvement in the computer program to confirm the use of the critical categories.

The intent was to conduct one observation for each classroom teacher involved in the study. Of the 20 regular classroom teachers in the school, 16 teachers had agreed to participate in the study, but one teacher did not agree to be observed. Four teachers refused to participate, two citing health problems (one Grade VI teacher and a Grade III teacher newly returned from sick leave) and two giving no reasons. Thus 15 classroom observations were conducted.

The detailed write-ups and ratings were supportive in capturing the ongoing classroom activities and adding to understanding the status of the implementation.

The ratings were based on the researcher's observation

and the notes recording activities. It was noted that, of the 15 teachers observed, all were using some of the critical categories, but not all were using the minimum of three out of five categories that would identify them as "users". The number of categories used was derived from a combination of observing the actual activities going on during the particular classroom period and noting evidence of student work and involvement (for example, student work displayed in the classroom, the assignments on which students were currently working, and the past work they had done as evidenced in notebooks and student records). Ten teachers used three or more cateogries (9 used 3 and 1 used 4) which marked them as "users". Five teachers were observed to be using two categories, that is, they were not working at the full "user" level.

Observation of personnel present and the teacher's role in teaching the computer program was intended to elicit information as to whether teachers were working at Level V of the Levels of Use Scale. This level is an advanced one and has to do with changes in the use of the innovation based on input of and in coordination with what colleagues are doing. No evidence of teachers working at this level was observed during the classroom observations.

Observation of the resources present for implementing the program was included in the schedule to develop a base

of information about computer resources for the school as a whole as well as for the individual classroom program. If resources were in short supply or non-existent for certain levels of the program, such a situation would probably have a negative impact on the program at that level. Resources were observed to be plentiful for all levels of the program in the subject school. The kindergarten and grade one teachers were the only ones to mention that they would like more variety and scope in the computer materials they used with their students, but they stated that this was not a major problem and in no way curtailed their implementation efforts.

Classroom observations, as mentioned previously, were intended to provide initial information for the researcher and confirmation of the ratings derived from the Levels of Use interviews. The observations provided preliminary indications of ratings, but were insufficient evidence on which to assign final ratings. Those ratings were derived mainly from the Levels of Use interviews with confirmation provided through the observational data and ratings.

## The Levels of Use Interview

The Levels of Use interview provided an opportunity to interact with the teacher on a one-to-one basis about his or her use of the computer program. It was scheduled and

conducted as one portion of the general teacher interview.

An overview of the purpose of the Levels of Use (LoU) interview has been provided by Loucks, Newlove and Hall (1975, page 21) and makes reference to the Levels of Use Scale presented in Appendix E:

> The LoU interview has one principal objective: to gather enough information from an individual about his/her use of an innovation to assign a Level of Use. To accomplish this, evidence is gathered in two independent ways. One is by questioning the interviewee about overall use by using the Decision Points. For example, the question, "Have you made any changes in your use of the innovation based on coordination with others?" reflects Decision Point F and helps determine if the individual is an LoU V. The other way to gather evidence is by probing each of the categories. For example, the question, "What kinds of information about use of the innovation are you seeking?" helps determine an LoU for the Acquiring Information category. Information about where the individual stands in terms of the Decision Points in each of the categories provides the basis for making an overall LoU rating.

The Levels of Use interview schedule (Appendix E: Part C) was based upon the format developed by Loucks, Newlove, and Hall (1975) with one difference: inclusion of the five critical categories used to define "use" of the computer program. Teachers were asked specifically if they were using each of the five categories. This allowed the researcher to determine which of the three branches of the interview (user, non-user, or past user) to conduct with the teacher.

The LoU interview is structured as a "focused inter-

view" (Loucks, Newlove, and Hall, 1975, page 23) in that it has a primary objective which is known to the interviewer. There is a limited number of questions required since they have been proven to elicit the necessary information. However, the order of the questions is flexible, and probing questions are intended to be used spontaneously when considered appropriate.

Consistency of the LoU interview ratings has been established by Klenke and Barrows (1980, pages 73-8) through trained rater agreement ranging from 75% to 92% in three studies using a total of 208 interviews. The researcher selftrained by using the Loucks, Newlove and Hall (1975) training manual, which includes procedures for formulating the questionnaire and conducting the interviews; guidelines and training materials for coding answers to specific questions, assigning the LoU ratings for each category, and rating the individual's overall level of use; and self-tests.

The intent was to interview all 20 of the classroom teachers in the school. Sixteen agreed to participate in the study; of these, 15 granted interviews.

Each teacher was contacted personally by the researcher to establish a convenient time for the interview. It was stressed that the interview was to be at the teacher's convenience any time before, during, or after school.

Teachers arranged their schedules in a variety of ways to manage time for the interviews. Three teachers having student teachers working with them left their classrooms in charge of the student teachers while they attended the interview. In three cases the vice-principal took over the teacher's class for the period of the interview. The nine other teachers used their own time at noon hour, during preparation periods, or after school. All the interviews were tape-recorded with the permission of the teacher, and were later transcribed.

A two-level process was followed to derive each teacher's level of use:

1. Rating the Categories

Independent rating was done for each of the seven categories on the chart (Knowledge, Acquiring Information, Sharing, Assessing, Planning, Status Reporting, and Performing) since an individual can have different LoU's for each category. The focus was on what the individual was doing with the innovation at the time of the interview.

Rating involved working in depth with the transcribed interviews. Each response in the interview was rated as to the category represented and the level of use indicated for that category. Pieces of information relating to each category were sometimes found scattered throughout the interview;

they were considered together to arrive at the category rating.

Consistent with the theoretical basis of the model, the LoU levels for each category were not arrived at by summing or mechanical procedures. The researcher considered what LoU came across most strongly in assigning the rating for each category. The coded information and the researcher's impression of what the teacher was doing with the innovation with respect to the various categories formed a "gestalt" (Loucks, Newlove, and Hall, 1975, page 43) which was the basis for the rating of each category. The rating for each category was entered on an individual rating sheet for each teacher.

2. Rating the Overall Level of Use

The overall level of use rating for each teacher was derived based on a gestalt of the category ratings entered on the rating sheet combined with the impressions of the researcher about the teacher's use of the computer program gained from observation and the interview.

Few problems were encountered in deriving the overall ratings. Although the level of use categories are independent, teachers' ratings tended to be consistent across categories. Where problems arose, reference to the observation notes and a review of the interview material resulted in the

researcher being able to assign an overall rating reflecting the teacher's level of use. The one significant problem that did arise was that of rating the one teacher who did not grant an interview. This meant that the information gained in the observation could not be confirmed in the interview process. However, during the observation the teacher had conducted the computer class, and had shown that she had expertise in the use of the computer program. Three of the five critical categories of the computer program were evidenced by the teacher during the class period. There was further evidence of student involvement through wall graphs developed by the students indicating their scheduling to work on the computer and the levels attained in working with various computer programs. An assumption was made on the basis of the observation that the teacher was working at at least a Level III (Mechanical Use) and she was therefore rated as functioning at Level III.

Reference to Table V will indicate that the interview process was weighted more strongly than the observation when rating levels of use. For example, in the case of three teachers (#8, #12, and #13), observation indicated the use of three categories out of the five critical categories of the program in the classroom setting. However, information provided in the interview showed that these teachers were not personally involved in the computer programs. Parent

| Teacher # | Grade Level | Observation: # of Components used | Interview # of Components reported used | LEVEL ASSIGNED | | |
|---|---|---|---|---|---|---|
| 1 | K | 3 | 4 | IVA | IVB | IVB |
| 2 | 1 | 3 | 3 | IVA | IVA | IVA |
| 3 | 4 | 3 | 4 | III | III | III |
| 4 | 5 | 4 | 4 | IVB | IVB | IVB |
| 5 | 2 | 3 | 4 | III | III | III |
| 6 | 2 | No observation granted | 2 | - | I | I |
| 7 | 1 | 3 | 4 | III | III | III |
| 8 | 5 | 3 | 0 | III* | 0 | 0 |
| 9 | 5 | 3 | 4 | IVB | IVB | IVB |
| 10 | 1 | 2 | 4 | III | III | III |
| 11 | K | 3 | 4 | IVA | IVA | IVA |
| 12 | 4 | 2 | 2 | III* | 0 | 0 |
| 13 | 2 | 2 | 0 | III* | 0 | 0 |
| 14 | 4 | 2 | 3 | III | II | III |
| 15 | 3 | 2 | 3 | IVA | IVB | IVB |
| 16 | 3 | 3 | no interview granted | III | - | III |
| TOTAL | | N=15 | N=15 | N=16 RATINGS | | |

TABLE V: SUMMARY OF TEACHERS' LoU RATINGS

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*"Performing" rating for observation only. These teachers were operating at a "O" level, but the observation showed parent volunteers working with students on the computer program.

volunteers under the direction of the resource people were working with the students. The researcher rated the computer program as operating at a "performing" level in the classroom setting, but the teachers were rated at a "non-use" level because they fit the criterion for that level, which is described in the model as "the state in which the user has little or no knowledge of the innovation, no involvement with the innovation, and is doing nothing toward becoming involved" (Loucks, Newlove, and Hall, 1975, page 8).

## Presentation and Analysis of the Levels of Use Data

The summary of teachers' Levels of Use ratings is presented in Table V. The ratings ranged from a low of "0: Non-use" to a high of "IVB: Refinement". Level IVB indicates that the teacher at that level has worked through the earlier levels and has become sufficiently knowledgeable with the program to refocus attention away from day-to-day use and bring in changes that are targetted to increase student outcomes. Four teachers were operating at the IVB level,: two of the resource people (Teacher #4 and Teacher #9), a Grade 3 teacher and a Kindergarten teacher.

Table VI aggregates the number and percentage of teachers operating at the eight levels of the model. Individuals were identified as being at a total of five levels of use.

| Levels of Use | | # of Teachers | % | Grouping |
|---|---|---|---|---|
| Non-use | 0 | 3 | 18.75 | Non-users 25% |
| Orientation | I | 1 | 6.25 | |
| Preparation | II | 0 | 0 | |
| Mechanical Use | III | 6 | 37.5 | |
| Routine Use | IVA | 2 | 12.5 | Users 75% |
| Refinement | IVB | 4 | 25 | |
| Integration | V | 0 | 0 | |
| Renewal | VI | 0 | 0 | |
| | | N=16 | 100 | |

TABLE VI: DISTRIBUTION OF TEACHERS ACCORDING TO THE OVERALL LEVEL OF USE

It will be noted that distribution across the levels was not uniform. Four teachers, or 25%, were categorized as non-users, and 12 or 75% as users at Level III, "Mechanical Use", or above.

Hall (1979) reported that he and his colleagues tested the Levels of Use concept through extensive research in field settings. Extrapolating from this research, the following patterns of Levels of Use can be expected after one year's use of an innovation: 50-70% at a Mechanical and Routine Level of Use (Levels III and IVA); 15-32% non-users, and 10-15% above Levels III and IVA. Although the period between the first general inservice until data was collected was sixteen months in length, it is reasonable to use Hall's

figures as a baseline because the majority of teachers did not begin to implement the program until the March/April period of 1984, one year before data was collected. The percentage of "expected" Levels of Use are compared with the "actual" levels derived in Table VII.

| | Non-use | Levels III & IVA | Above Level IVA |
|---|---|---|---|
| Expected | 15-32% | 50-70% | 10-15% |
| Actual | 25% | 37.5% | 37.5% |
| | | Combined Level III and above 75% | |

TABLE VII: A COMPARISON OF EXPECTED AND ACTUAL LEVELS OF USE

The proportion of 25% at the non-user level was within the predicted range. The combined Level III and above users also fell within the predicted range. Two anomalies will be noted, however. The percentage of teachers operating at Levels III and IVA was lower by 10% than the lowest percentage predicted. The percentage operating above Levels III and IVA was 10-15% higher than predicted. It would seem that, instead of remaining at Levels III and IVA as predicted, a significant proportion of between 10 and 15% of teachers had attained higher levels of use than that

predicted by the model.

One further point indicative of the relative success of the computer program implementation can be drawn from the field-work reported by Hall and Loucks (1977(b), pages 270-271). Among other implementations, they studied teaming as an innovation among 371 teachers in elementary schools as a means of developing a model to determine whether the treatment was actually being implemented. It was found that "better than 50% of users were clustered at the IVA level of Routine Use" after one year of implementation, and the percentage at the IVA Level increased over the four years of the study to 72% in the final year. Most of the increase came from people moving up one level from Level III. Only 18% of the users were rated higher than Level IVA even by Year Four of the implementation. Similar clustering after 4 years was reported in Levels of Use ratings for individualized reading (53% at Levels III and IVA, with 27% at higher than IVA) and individualized mathematics (58% at Levels III and IVA, with 16% at higher than IVA). Comparison of the above findings with those of this study indicates that the subject school had attained an unusually high level of implementation with at least the 25% of teachers who were working at a Level IVB, especially considering the relatively short period of time since the implementation began. This finding is particularly striking in that Loucks, Hall

and Newlove (1975, page 7) hypothesized that people tend to become stable at a IVA Level of Use, and "if further dynamic increases in sophistication are desired, special interventions appear to be needed, probably during the third cycle." This school was able to move a significant percentage of its users to that level in slightly over one cycle as part of its regular implementation process.

To summarize the Levels of Use findings:

1. The percentage of teachers rated as non-users was consistent with Hall's (1979) prediction.

   The above point should be qualified by pointing out that, although this percentage was rated at the non-use level, every classroom observed evidenced the program operating using a minimum of two critical categories of the innovation. Thus classroom implementation was higher than that implied by the above figures even though the teachers per se were not directly involved in the implementation.

2. Levels III and IVa showed a lower percentage than predicted. However, the 75% of teachers operating at a combined Level III and above conformed to Loucks and Halls' prediction of 70-85% operating across these levels. Instead of remaining at Level III or IVA as predicted, it would seem that a greater percentage than expected had moved on to work at Level IVB.

3. Above Level III use was considerably higher than expected, 10-15% higher than the percentage predicted to have been operating at this level.

Based on the above analysis, it can be stated with a relatively high degree of certainty that the configuration of levels of use findings indicated that the implementation was successful. Non-use and user categories were consistent with expected levels, with higher-level use of the innovation well above that expected.

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Notes

[1]In the interest of anonymity, specific names and places to which this study refers were assigned fictitious names.

[2]Manitoba Department of Education. K-3 Curriculum Awareness Interim Guide and 4-6 Curriculum Awareness Interim Guide. (Winnipeg, Manitoba: Manitoba Department of Education, 1985), pages 7-9 of both guides.

# CHAPTER V

## THE RELATIONSHIP OF THE DIMENSIONS OF BEHAVIOUR OF THE PRINCIPAL TO TWO PROGRAM AREAS

In accordance with the purpose of this study, comparison was made between the dimensions of behaviour of the subject principal using the revised model and the descriptions of those dimensions set out as characteristic of "effective" and "typical" principals drawn from the Leithwood and Montgomery study (1982). This chapter sets out the findings of this comparative process.

Analysis of interview protocols and field notes gave indication that the comparative process would have to take a direction not originally anticipated. The qualitative process makes allowance for such a shift. Shaw (1978, page 2) points out that case studies are designed to accommodate new directions indicated by the data:

> The contribution of case studies is to concentrate attention on the way particular groups of people confront specific problems, taking a holistic view of the situation. They are problem-centred, small scale, entrepreneurial endeavours; data is collected on the spot with expectations and directed vision, but there is a readiness to reconceptualize the problem as data accumulates and to take account of the broad slice of social reality, which contrasts fundamentally with research based on the positivistic experimental design.

Reconceptualization was found to be necessary at this

stage in analyzing the principal's dimensions of behaviour. The initial intent was to compare the dimensions in general with the dimensions extrapolated from the Leithwood and Montgomery model (1982). It was expected that each of the dimensions of the principal's behaviour would conform to either the "effective" or "typical" description. As is demonstrated in the comparative analysis that follows, the results were considerably more complex. They indicated that the principal's dimensions of behaviour were essentially bi-modal, that is, they tended to differ within the same dimension depending upon whether they related to the regular school program or to the computer program. Thus redefinition of the process of analyzing the principal's dimensions of behaviour was necessary, a requirement to which Turner (1981, page 236) made reference in his description of procedures for analyzing qualitative data:

> In such a case, in light of the more detailed examination which the process of definition evokes, the two distinct but related phenomena need to be separated out and dealt with individually.

The procedure followed at this point in the analysis, then, was to separate out the principal's dimensions of behaviour as they applied first to the regular school program and then as they applied to the computer program.

As explained in Chapter III, Research Design and Methodology, the principal's dimensions of behaviour were

investigated through interviews with the principal, the vice-principal, and the fifteen teachers who participated in the interviews. The findings from the interviews were checked against data derived from the observations and documentary evidence to ensure congruence and to uncover possible disparities. They were then compared to each of the descriptions of "effective" and "typical" dimensions of behaviour drawn from Leithwood and Montgomery's study.

The analysis in this chapter is set out as follows. At the beginning of the discussion of each of the twenty elements making up the profile used in this study, the definition of the element as it pertains to "effective" and "typical" dimensions of behaviour is presented for the reader. Each element is then examined in two sections. The first section discusses the dimension of behaviour as it was applied by the subject principal to the regular school program, defined here as the standard curricular areas such as Language Arts, mathematics, and science. The second section discusses the same dimension of behaviour of the principal as applied to the computer program.

In the final part of the chapter, the findings are presented in matrix form. The overall pattern of the principal's dimensions of behaviour is then discussed as it related first to the regular school program and then to the computer program, and a conclusion reached as to the overall

rating of the principal's dimensions of behaviour in each program area.

## A. Dimensions of Principal Behaviour Related to the Regular School Program and the Computer Program

### 1. GOALS

1.1 EFFECTIVE PRINCIPALS PLACED THE ACHIEVEMENT AND WELL-BEING OF STUDENTS FIRST IN THEIR PRIORITIES. THEY VIEWED THEMSELVES AS EDUCATIONAL LEADERS WHOSE FUNCTION WAS TO SEE THAT STUDENTS IN THEIR SCHOOL WERE PROVIDED WITH THE BEST PROGRAM POSSIBLE.

TYPICAL PRINCIPALS PLACED A SMOOTH-RUNNING ORGANIZATION FIRST IN PRIORITY, WITH EMPHASIS ON KEEPING ACTIVITIES IN THE SCHOOL MANAGEABLE.

#### 1.1.a The Regular School Program

Leithwood and Montgomery (1982) stated that "effective" principals perceived and acted upon a close linkage between their concern about the "well-being" of students and the school's provision for their academic achievement through "the best program possible" because they see academic achievement as furnishing essential skills that provide or expand socio-economic opportunities for students.

The principal under study exhibited virtually no con-

cerns about student academic achievement. His lack of concern was expressed unambiguously at two points in the interview. His goal for students was "that kids get together and react well together . . . In fact, that's possibly more important than the educational goal--the socialization". When asked what he considered the most important things for students to gain out of the time they spend in school, he named "a love of learning, socialization, and a good self-concept", but made no mention of academic achievement.

Similarly, the principal indicated that he did not view himself as an educational leader in the school. There was no evidence that he or the vice-principal attempted to coordinate instructional approaches across grades or levels of the school. He viewed the teaching approaches used as "not a concern from the administrative point of view". He stated that "I haven't had as much concern about curriculum as I might have had in a school with seven beginning teachers".

These responses indicated that the principal's mode of behaviour in regard to the regular school program was that of a "typical" principal. This categorization was further confirmed by the principal's response to the question, "what are the most important parts of your job?" (3.13.3), which he said was "taking care of whatever has to be done to be sure the school is running smoothly". He described his role

in "typical" principal terms, even to the point of using the same wording that appears in the definition.

1.1.b The Computer Program

The principal tended toward a dimension of behaviour fitting the "effective" principal definition in the computer area in three ways:

i) He placed student achievement in regard to computers in a position of high priority. He had precision in the goals he set for the program:

> I think it's important that children be aware of computers and have some experience with them. Not that they become programmers or anything like that. But that they are using them and can see there is some value to them and that computers can help them.

ii) He viewed himself as an educational leader whose goal was to provide the best program possible in the computer area, as indicated by his statement that:

> Any implementation of computers has to come from somewhere, and initially there was no one on staff who had any experience. And being one week ahead of them, I was the expert. I knew some things, and we got things going. So I had an influence there . . . I conducted inservices myself. I keep myself well-read on various aspects of computers. I know that I'm the most informed on this staff and probably the most informed principal in the Divison in this area as well . . . It's something I want in my

school, and I want my school to be a leader, not a follower.

iii) In the regular program area, the smooth running of the school was a priority. In the computer area, the principal risked disruption of the organization in a number of ways, including the following:

- he challenged the norm of collegial decision-making by mandating the implementation of the computer program.
- he challenged the carefully-guarded autonomy of teachers by laying out expectations that each classroom use computers.
- he channeled significant amounts of teacher resource time, school resources, his own commitment and energy, and funds raised by parents into the computer area, often at the risk of considerable conflict with certain staff members.

In regard to the computer program, then, the principal's dimension of behaviour in the area under discussion was that of the "effective" principal.

1.2 EFFECTIVE PRINCIPALS WERE EXCEPTIONALLY CLEAR ABOUT THEIR OWN SHORT- AND LONG TERM GOALS FOR STUDENTS, AND THESE GOALS USUALLY FOCUSSED ON THE "BASICS". THEY TENDED TO ENGAGE TEACHERS IN GOAL- OR PRIORITY-SETTING FOR STUDENTS.

TYPICAL PRINCIPALS WERE DISTANT FROM CURRICULUM OR INSTRUCTIONAL DECISIONS, AND DID NOT ENGAGE STAFF IN GOAL OR PRIORITY SETTING FOR STUDENTS. WHEN GOALS AND PRIORITIES WERE ESTABLISHED, THEY WERE NOT CLEARLY AND CONCRETELY ARTICULATED.

### 1.2.a The Regular School Program

When queried as to whether goals had been set for the school, the principal said that:

> We haven't set a whole series of goals. We came a couple of years too late for that. I'm saying that facetiously, in that that was one of the things in the 1970's, late 1970's, with everyone setting goals. So we haven't set school goals as such.

Obviously the principal did not consider goal development important for himself, nor did he view engaging teachers in goal- or priority-setting for students as important.

The principal did mention one goal that he said was agreed upon at the time the school opened:

> An initial goal was just that kids would get together and would react well together.

Certainly this goal is very general, and is neither clearly nor concretely articulated.

Analysis of administrator and teacher responses to questions about school goals and priorities (see Appendix "H," Tables 1-4) indicated that there was little congruence across staff as to the existence and nature of school goals,

how they were established, or what happens to them, once set. The goals that were named were general in the extreme, an example being the response given by three teachers who said that the school set "only broad general goals". Other goals enumerated were also uninterpretable without further definition, for example, "program", "quality education", and "curriculum"; further probing failed to elicit specificity. The generality of responses supports the principal's statement that the school had not been involved in specific goal- or priority-setting for students.

In terms of goal-setting in regard to the regular school program, then, the principal was categorized as using a "typical" dimension of behaviour.

### 1.2.b The Computer Program

The principal had relatively clear goals for students across the school in regard to the computer program, those goals being that they develop an awareness of computers and be able to use them.

With this program, the principal was directly involved in curriculum decisions and played a large role in making instructional decisions regarding computer use. The evidence for this statement can be found in the description of the implementation path presented in Chapter IV, and in the analysis of staff responses to a range of questions posed in

the interviews to provide perspectives on this issue (Appendix "H", Tables 27, 28, 29, 30, 32, 35 and 36), which gave indication of his involvement in the following ways:

- he mandated the use of the program in the school, in spite of the fact that it was provided as an optional program both at the provincial and division level of the educational system;
- he arranged for staff members to serve as resource people to work in-depth with the rest of the staff, using the Computer Awareness Curriculum as their guide;
- he provided leadership for the resource people on an ongoing basis;
- he made himself available to assist teachers directly in implementing the program.

The one discrepancy between the principal's dimension of behaviour and the description of "effective" principals was that his goals did not focus on the "basics" but on implementing the computer program. Since the definition was qualified by the word "usually" ("these goals usually focus on the 'basics'") it was decided to categorize the principal as using an "effective" dimension of behaviour in regard to goal-setting for the computer program.

## 1.3 EFFECTIVE PRINCIPALS' ORIENTATION TOWARDS TEACHERS

CENTERED ON IMPROVING THE SCHOOL PROGRAM, A "TASK" RATHER THAN A "HUMAN RELATIONS" ORIENTATION. THEY ESTABLISHED NORMS FOR RISK-TAKING AMONG STAFF. HIGH EXPECTATIONS FOR TEACHERS AS WELL AS STUDENTS AND THEMSELVES WERE ARTICULATED.

TYPICAL PRINCIPALS STRESSED HARMONIOUS PERSONAL RELATIONSHIPS WITH TEACHERS, A "HUMAN RELATIONS" ORIENTATION. THEY SOMETIMES ENCOURAGED INITIATIVE AND EXPERIMENTATION AMONG TEACHERS, BUT THEMSELVES INITIATED FEW CHANGES IN THE SCHOOL PROGRAM.

### 1.3.a The Regular School Program

The principal's usual orientation toward teachers was that he handled administrative functions and they handled teaching, a division of labour such that he was not involved in instructional matters in the school. His orientation, then, did not centre on improving the school program but on keeping the school running smoothly. There was no indication of overt expression of "high expectations".

The principal viewed his orientation to teachers as basically a human-relations one:

> I see my role as being a supplier and provider, someone they can come to, helping out in any way I can.

The majority of teachers described him as more human-relations than task-oriented, with task orientation being

evident on some occasions (Appendix "H", Table 18).

In regard to the principal's orientation toward teachers, Leithwood and Montgomery (1982, page 321) found that "effective principals were prepared to sacrifice smooth interpersonal relationships, if necessary, for the sake of a more effective program." There is evidence that the principal in this case study had taken an opposite approach. He and the staff had implicitly agreed to carefully guarded boundaries around certain domains with the regular instructional program being identified as a teacher domain. This boundary agreement came out clearly in two instances:

i) When asked whether the principal tried to influence the instructional approach used in each classroom, 14 out of 15 teachers interviewed said that he did not (Appendix "H", Table 10). Two of these teachers were emphatic in stating the negative. One stated that "he would never try to [influence the instructional approach]". The other said, "Not ever. He handles the administrative part and we handle the teaching part. It would be just astronomical for him to interfere in that area".

ii) Both school administrators tended to use a cautious approach even when problems arose with a teacher's approach. The principal stated that:

as long as the teacher's approach is a

> reasonably good approach, I'm prepared to live with it.

If a problem were perceived, such as a teacher "not using any writing in Language Arts, we'd mention that". The vice-principal confirmed what seemed to be the norm for the way in which she and the principal would deal with a problem in teaching approach. She said that she would involve the teacher and the resource teacher in discussing the teacher's approach "and hopefully we decide through a process of consensus what should be done". She added that "I don't want to be seen as a threatening person telling someone they have to do something".

It would seem that the principal placed smooth interpersonal relationships ahead of program concerns in his usual orientation toward teachers. Thus the principal can be categorized as using the dimension of behaviour of a "typical" principal in the area discussed above.

### 1.3.b The Computer Program

The principal's orientation toward teachers shifted significantly from his usual mode when it came to implementing the computer program. This orientation can be examined under four elements mentioned in the definition for this dimension of behaviour:

i) "Effective principals' orientation toward teachers centred on improving the school program". This description was appropriate to the principal in one aspect: his desire to improve the school program through involving children with computers. He believed that they need awareness in this area because computers play an important role now in people's lives, and will play an increasingly larger role as time goes on. However, there was no indication that his intent was to improve the school program in general, other than providing a "motivating" factor.

ii) Use of a "task" rather than a "human relations" orientation. There was evidence that the principal chose to operate in a task-oriented manner in regard to the computer program. When teachers were asked what the role of the principal was in regard to organizing the staff to implement the computer program (Appendix "H", Table 32), 10 teachers out of 15 said that he provided leadership, and five of these said that he "pushed" too much or otherwise took what they termed "too large a role" in this curricular area.

The task orientation was evidenced in many

ways. Two teachers' comments that were representative of many similar ones throughout the interviews about the role taken by the principal were:

> The computer program--that was a decision Mr. Allen made. The computer curriculum--he expected it to be taught, and it was just a mandate. It was not to be optional.

> His role was not a passive one. It was crucial. That became his passion, the computer thing. And I think without him being keenly interested in it, it wouldn't have gotten off the ground the way it did.

Another form of evidence was the variety and range of activities undertaken by the principal. Table 10 refers to sixteen areas in which the principal involved himself during the implementation period, indicating a purposeful, task-oriented approach.

iii) Establishment of norms of risk-taking among staff. One way to establish norms is to model them oneself. The principal exhibited a willingness to take risks by mandating the curriculum in a school with a highly-experienced staff which placed high value on teacher autonomy. Further, he bought computers without conferring with staff, thus having to face resultant conflict.

Teachers were asked a specific question to elucidate staff attitudes toward risk-taking in

regard to the computer program: "From your experience, do you think that the principal would give support to your trying something new in teaching the new curriculum, even if it might not work?" All 15 teachers answered in the affirmative. Appendix "H", Table 39, provides the results, including the reasons teachers gave as to why they felt that way, which revolved around administrative support for trying new approaches. Thus it can be fairly stated that norms of risk-taking were evident among staff.

iv) High expectations articulated for themselves, teachers, and students. Little direct evidence of articulation of high expectations was found. By implication, however, the fact that the principal took on learning a new and complex area, that of computers, as well as the huge task of implementing the program in a school which had no background in the area is evidence of high expectations for himself and the staff. Similarly, there was evidence that the principal trusted teachers' judgement as experienced people. Students were used as proctors in the program, indicative of expectations that students could take on a problem-solving and peer-teaching role. In

summary it can be said that the entire effort of implementing computers implied the kind of high expectations to which reference is made.

Based on the above analysis of the situation, the principal's dimension of behaviour was categorized as "effective" in regard to the computer program in the area of orientation toward teachers.

1.4 EFFECTIVE PRINCIPALS ACTIVELY SOUGHT PARENTAL SUPPORT FOR PROGRAM IMPROVEMENT. THEY ORIENTED THE SCHOOL PROGRAM TO SETS OF GOALS WIDELY ENDORSED BY THE COMMUNITY. THEY ATTEMPTED TO ESTABLISH CLOSE CONTACT WITH PARENTS THROUGH MEETINGS, CONFERENCES, AND BY BUILDING PARENT-TEACHER GROUPS WITH THE PURPOSE OF GAINING COMMUNITY SUPPORT FOR SCHOOL GOALS AND PRIORITIES.

IN THE CASE OF TYPICAL PRINCIPALS, GOALS AND PRIORITIES WERE NOT UNIFORMLY COMMUNICATED TO OR SUPPORTED BY THE COMMUNITY. COMMUNICATIONS TENDED TO FOCUS ON SCHOOL ACTIVITIES (FUND-RAISING EFFORTS AND FIELD TRIPS ARE EXAMPLES). PRINCIPALS AND STAFFS TENDED TO BE RELATIVELY DISTANT FROM THE COMMUNITY. THERE WAS AN ATTEMPT TO KEEP THE DECISION-MAKING POWER OF THE PARENT TO A MINIMUM.

### 1.4.a The Regular School Program

There was no evidence in the regular school program of

awareness of goals or sets of goals endorsed by the community. The sole indication of responsiveness to the community was the use of a primary basal reading series because initially the community had requested that one be used. The principal did support school-parent meetings, social activities, and open houses, but this seemed to be for the purpose of informational and social interchange with the parents. Seeing that no clear school goals and priorities had been articulated, gaining community support in this area would not be possible. Thus in terms of the principal's dimension of behaviour in the area of orientation toward the community, the principal was categorized as "typical".

### 1.4.b The Computer Program

The principal actively sought parental support for the computer program. He established close contacts with one parent group set up for the purpose of raising funds for computers. The group responded by raising several thousands of dollars through school and extra-school events and thus provided the school with a wide array of computer equipment. Another group of parents came to the school on a regular basis as parent volunteers. They worked directly with children on computer programs, some of which were aimed at computer literacy and some at drill and practice of basic skills. In these ways, parent contacts were for the purpose

of "gaining community support for school goals and priorities": in this case the computer program.

The principal thus rated in the "effective" category in regard to orientation toward the community in regard to the computer program.

## 2. FACTORS

Both effective and typical principals attempted to influence the same set of school factors. These factors are defined as "phenomena potentially affecting the experiences of students, both those operating on the students' classroom experience and those operating on the school-wide experience of students" (Leithwood and Montgomery, 1982, page 322). On certain factors, effective principals were distinguished from typical principals by what it was about each factor that they believed to be important to influence. The following section continues examination of the principal's dimensions of behaviour by looking at factors he attempted to influence in both the regular program and the computer program areas.

### 2.1 EFFECTIVE PRINCIPALS WERE REPORTED TO BE DIRECTLY INVOLVED WITH CAREFUL TEACHER SELECTION AND ASSIGNMENT.

TYPICAL PRINCIPALS LEFT TO TEACHERS THE DECISION ABOUT WHICH TEACHERS TEACH WHICH STUDENTS.

2.1.a The Regular School Program

The dimension of behaviour here being examined focuses upon decisions the principal makes about "which teachers teach which children" (Leithwood and Montgomery, 1982, page 323). These decisions are taken at three levels: the initial selection and grade placement of teachers; year-to-year changes in teaching assignment, usually changes having to do with teachers' grade-level placement; and the annual assignment of specific students or groups of students to a particular teacher. Each of these decision levels is discussed below in relation to how the principal in the subject school handled them in comparison to Leithwood and Montgomery's findings.

i) Initial selection of teachers:

The criteria used for initially selecting teachers by the "effective" principals in the Leithwood and Montgomery study were: district policies, the needs of the school, the principal's judgement about teachers' strengths and weaknesses, teacher experience, and teacher preference. The principal in this study used similar criteria. The principal was constrained by district policy to utilize teachers already in the division. Needs of the school were considered only in the general sense of how many teachers were needed for each grade level.

The "principal's judgement about teachers' strengths and weaknesses" came into play in that most of the teachers who applied were known professionally by either the principal or vice-principal. "Teacher experience" in terms of number of years of teaching was not a major factor since all the applicants had a minimum of five years, but experience at a particular level was taken into consideration. The principal paid attention to teacher preference in assigning grade levels. Thus, in terms of initial selection, the principal used an "effective" dimension of behaviour.

ii) Changes in grade placement:

Leithwood and Montgomery stated that "effective" principals were concerned about organizational arrangements that were best suited to meet student needs rather than the needs of teachers. This principal seemed to make decisions on changes of teacher placement mainly on the basis of teacher preference rather than on student needs. The process that was followed was that teachers requested that they be placed at another grade level when the position came open, and given that they had the prerequisite qualifications (division policy stated that people moving into positions at

the Grade 4, 5, or 6 level, for example, had to be able to teach their own French), they received the appointment. There was no indication that the principal gave consideration to alternate arrangements that might be more beneficial to students. Thus the principal did not resemble "effective" principals who gave top priority to student needs. Instead, he gave top priority to teacher preferences.

iii) Annual assignment of students to teachers:

Some discretion about placing children at each grade level with a specific teacher was possible in this school, since there were three teachers per grade. A further consideration might include homogeneous groupings based on student needs, as did some "effective" principals (Leithwood and Montgomery, 1982, page 323). The process in this school did not use either of these considerations. At the end of each school year, teachers met in grade-level groups and assigned students to three lists, and the principal put teacher names from the next level at the top of each list. When asked if the children on the list influenced who he assigned as their teacher, he stated:

In most cases it shouldn't matter, be-

> cause the classes should be heterogeneous, and should have their share of "problems", whether the problem is of behaviour, or emotional, or language, or resource help. There should be a reasonably even mixture, and that's the responsibility of the present teachers. Any teacher should be able to take any one of the classes. Really it shouldn't matter to the teacher which one of the classes he or she gets.

A clear implication of the above statements is that the principal's assignment of students to teachers was handled in such a way that teachers would perceive themselves as being fairly treated as to their student "load". The principal appeared to give higher priority to teacher perceptions than student needs, and in this instance behaved as does a "typical" principal.

The overall ratings for the dimensions of principal behaviour in regard to teacher selection and placement was one instance where there were different ratings for separate aspects of the same dimension. The principal was rated "effective" in initial teacher selection, and "typical" in assignment for grade placement changes and annual student groupings. Since two out of the three rated as "typical", and the two areas had to do with ongoing processes in the school as opposed to a one-time selection, it was decided to rate the principal as "typical" for the dimension of behaviour under review.

### 2.1.b The Computer Program

The decision about which teacher teaches which student did not have application to the computer program since the program was taught as part of the regular classroom program.

## 2.2 EFFECTIVE PRINCIPALS ESTABLISHED CLEAR PRIORITIES AND EMPHASES AMONG THE OBJECTIVES TEACHERS WORK TOWARDS WITH STUDENTS TO SERVE AS A FOCUS FOR INSTRUCTION.

TYPICAL PRINCIPALS DEVOTED LITTLE TIME TO ESTABLISHING PRIORITIES AND EMPHASES AMONG OBJECTIVES, PERMITTED SCHOOL OBJECTIVES TO BE VAGUE, AND TENDED TO BECOME INVOLVED IN SCHOOL GOALS ONLY IN RESPONSE TO TEACHERS' CURRICULUM PLANS IN ORDER TO MODIFY THEM.

### 2.2.a The Regular School Program

The responses to two questions on the interview schedule were examined to provide information on the above dimension of behaviour.

Question 4.0 asked, "What happens to curriculum programs and guidelines when they come to your school?" The principal commented that new curricula had been sent out from the Department of Education for so many areas in recent years that "it is impossible to keep up with all the areas." Such a situation would, it would seem, provide a prime opportunity to establish priorities or emphases as a focus for direction and instruction in the school. However, the

data indicated that the principal did not approach the issue of new curricula on the basis of priority-setting for the school. His approach was to pass on to the staff any basic information he received on program changes and then leave any further action to the discretion of individual teachers (Appendix "H", Table 19). Curriculum knowledge seemed to be absorbed haphazardly, applied on an ad hoc basis where it was applied at all, and not evaluated or followed up.

Since this school had no discernible goals, it also lacked program objectives to utilize as a sorting mechanism for determining which new curricula should be a serious focus for the school and which could be considered as of lesser importance. This also meant that, since teachers were doing what they considered important in their own situation without reference to what other teachers were doing, there was a lack of coordination of program objectives within and across programs and grades.

When asked how curriculum goals were integrated with the program objectives toward which teachers work in their classrooms, and who was involved (Questions 2.4, 2.4.1; Appendix "H", Tables 20 and 21), 11 out of 15 teachers said that it was left up to the individual teacher. Divisional inservice along with school inservice and discussion were mentioned as steps followed, but there was no indication of these steps offering direction in terms of overall prior-

ities to be integrated into programs at the classroom level.

The principal's dimension of behaviour in this area matched those of "typical" principals in that he permitted school objectives to be vague and showed little tendency to become involved with school goals for the regular program.

### 2.2.b The Computer Program

Because of his direct involvement in the computer program from its beginning, the principal said that he felt he was able to influence it "in the direction that we want it to go". He further stated that "my basic premise has been that I wish to see the use of computers for learning implemented, and it's never been a force issue that the curriculum has to be". Since the computer curriculum contains four other areas besides the use of computers for learning (instruction on operating a computer, the parts of a computer, the development of computers, and the role of computers), the principal's statement is significant in light of the issue under discussion. It would seem that the principal had established a clear emphasis among the objectives of the computer program for teachers to work toward with their students. Further, he supported that emphasis through the direction of on-going work in the school (providing mini-workshops to teachers on the software available

to use on computers, and organizing and annotating the software to make it easy for teachers to select and utilize it, both addressing aspects of the use of computers).

In terms of establishing clear program priorities for the computer program, then, the principal used an "effective" dimension of behaviour.

2.3 INSTRUCTIONAL STRATEGIES RECEIVED CONCERTED ATTENTION FROM EFFECTIVE PRINCIPALS. THEY WERE ACTIVELY CONCERNED ABOUT INFLUENCING SEVERAL ASPECTS: ESTABLISHING AND MAINTAINING PRIORITY INSTRUCTIONAL BEHAVIOURS OVER LONG PERIODS OF TIME; THE RELATIONSHIP BETWEEN STRATEGIES AND RESOURCE MATERIALS; THE AMOUNT OF CLASS TIME DEVOTED TO INSTRUCTION; AND INSTRUCTIONAL ORIENTATION (THAT IS, AN "ELEMENTARY" ORIENTATION TOWARD INSTRUCTION).

TYPICAL PRINCIPALS TENDED TO IGNORE THE INSTRUCTIONAL STRATEGIES OF TEACHERS, AS WELL AS THE LEARNING ACTIVITIES PROVIDED FOR STUDENTS. TEACHERS WERE "LEFT ALONE TO TEACH" BECAUSE OF THE PRINCIPALS' FAITH IN THEIR PROFESSIONAL COMPETENCE. STANDARD TEACHING PRACTICES WERE GENERALLY ENCOURAGED.

### 2.3.a The Regular School Program

The principal stated during the interview that the instructional approach teachers used was "not a concern from

the administrative point of view". His lack of involvement in the four areas related to instructional strategies outlined above was confirmed by responses he gave during the interview:

i) Regarding the issue of "establishing and maintaining priority instructional behaviours over long periods of time", the principal stated that

> we don't have one overall instructional philosophy . . . we're more interested in the person than in their orientation to instruction. This is a very strong experienced staff, and they have a lot of strengths I don't have in the instructional area.

ii) Regarding "the relationship between such strategies and resource materials", since no priority instructional behaviours were established, the question did not apply. The principal provided insight into his approach to resources when he explained, "I guess basically I put more emphasis on acquiring materials than on seeing how those materials are being used".

iii) In regard to "the amount of class time devoted to instruction", again the principal left the area up to teachers:

> I've gone by the fact that I've had experienced teachers who presumably should know and do follow what should be done.

iv) In regard to "instructional orientation", preferably an "elementary" orientation toward instruction, the principal said:

> We have teachers here with different orientations to teaching . . . there are different ways of teaching, and I don't have problems with that. So we don't force the issue.

Teachers' responses to questions on the school's instructional orientation as related to the principal confirmed his lack of involvement (Appendix "H", Tables 9-13).

The principal's dimension of behaviour in this area fits the description of "typical" principals, in that he left teachers alone to teach because of his faith in their professional competence, and in general encouraged standard teaching practices.

### 2.3.b The Computer Program

The strategy of using computers as a tool for learning has implications for the instructional approach teachers employ. It was observed in the subject school that computer use involved a high degree of individualization, sometimes including peer teaching, in virtually every classroom. There was a relationship between this strategy and resource materials in that teachers had to seek out or develop computer materials suited to both their instructional programs and the ability levels of their students in order to use an individualized approach.

However, there was no evidence that the principal's initiation of the implementation of the computer program was linked to any intent to influence the instructional behaviour of teachers. Thus he was rated as "typical" in regard to this dimension of behaviour in relation to the computer program.

2.4 EFFECTIVE PRINCIPALS USED A RELATIVELY PRECISE FOCUS ON CURRICULUM GOALS AS A CRITERION IN MAKING TIME ALLOCATION DECISIONS. THEY ATTEMPTED TO INFLUENCE COORDINATION AMONG TEACHERS OF CHOICES OF GOALS AND METHODS SO THAT THERE WOULD BE AN ACCUMULATION OF EFFECTS UPON STUDENTS THROUGH THE GRADES.

TYPICAL PRINCIPALS, POSSIBLY BECAUSE OF THEIR AMBIGUOUS AND DIFFUSE APPROACH TO GOALS, MAY ATTEMPT TO INFLUENCE COORDINATION OF EFFORTS AMONG STAFF GROUPS PLANNING CURRICULUM BUT LACK THE PRECISE FOCUS FOR INTEGRATION ACROSS OBJECTIVES, PROGRAMS, GRADES, AND METHODS.

### 2.4.a The Regular School Program

The principal had "an ambiguous and diffuse approach to goals" and did not attempt to influence coordination among staff groups. Thus he was rated as using a "typical" dimension of behaviour in this area.

2.4.b The Computer Program

The principal's main goal in regard to the computer program was relatively precise; it was that all teachers use the computer for learning purposes with their students, as set out in item 2.2.b above. He used this goal in making time allocation decisions in four ways:

i) The time available for the resource people on staff was allocated to support the computer implementation.

ii) Allocation of significant amounts of his own time to the computer program.

iii) Encouragement directed at teachers to allocate classroom time to computer use.

iv) Allocation of inservice time to the computer curriculum.

The principal also attempted to influence coordination among teachers as to the main goal of the program and the methods used in the program. It was his intent that, as students moved through the computer program year by year, they would become increasingly knowledgeable and require a more extensive program than that set out in the curriculum guide. He was working toward a coordinated school-wide effort that would provide "an accumulation of effects upon students through the grades". Three teachers, one at the kindergarten level and two at the intermediate level who

were also resource people for the computer program, commented that they could already see indications of this "accumulation". For example, children moving to Grade 1 after having experienced the kindergarten computer program would need activities considerably more advanced than the current Grade 1 class because they had experienced and in many cases mastered similar areas of learning. Over a period of several years, students would have gained considerable expertise and experience in the use of computers.

Thus in the computer program the principal's dimension of behaviour in regard to the area under discussion was rated as consistent with that of "effective" principals.

## 2.5 EFFECTIVE PRINCIPALS LOOKED TO SOURCES OUTSIDE THEIR OWN ESTABLISHED BUDGETS AND PROCEDURES FOR SUPPORT FOR THEIR PROGRAM IMPROVEMENT EFFORTS. THESE SOURCES INCLUDED GOVERNMENT AGENCIES, EXTERNAL PROJECT FUNDS, OR SPECIAL FINANCIAL ARRANGEMENTS WITH THEIR OWN SCHOOL BOARDS.

THE TYPICAL PRINCIPAL LOOKED TO ESTABLISHED BUDGETS AND PROCEDURES AS A SOURCE OF MONEY TO SUPPORT NEW PROGRAMS.

### 2.5.a The Regular School Program

There was evidence that the principal looked to one source beyond his own established budget to support the regular program for the school. This evidence was the prin-

cipal's statement that "we overspent by $8000 or so last year". Part of the money was for computers, and "part of it was that we needed all kinds of other things. I wasn't afraid to overspend. It's a new school: we had to."

There was no evidence that this money went specifically toward program improvement efforts. The indication is that it went for supplies and materials to furnish the ordinary needs of the school. It was not a special arrangement made ahead of time with the school board. No other potential sources were approached for funding the regular program or any initiatives connected with it.

The action described, then, does not fit the description of the "effective" dimension of behaviour stated above. The principal was therefore categorized as "typical" in regard to this dimension.

### 2.5.b The Computer Program

Equipment and materials for the computer program were not provided for in the established budget for the school. The principal outlined the three approaches he used to obtain funding: the use of discretionary funds from and the overspending of the school budget, special requests to the division based on a proposal, and an appeal to the parent committee. The principal obviously used the dimension of behaviour of an "effective" principal in looking to sources

outside established budget and procedures to support the computer program.

2.6 EFFECTIVE PRINCIPALS TENDED TO PLACE SCHOOL GOALS AHEAD OF DISTRICT PRIORITIES.

TYPICAL PRINCIPALS PLACED EXPRESSED DISTRICT PRIORITIES AHEAD OF SCHOOL GOALS.

### 2.6.a The Regular School Program

The principal indicated at several points in the interview his awareness of expressed divisional priorities. He enumerated several priorities and provided examples of how the school was working toward them. In this way he demonstrated his concern that the school pay attention to divisional priorities. When asked how he handled the situation when there is a conflict between divisional and school priorities, his reply was:

> There may be a divisional priority that's going this way, but at the same time we have to look at the needs of our students, and the division has always been quite adaptable to our not necessarily toeing the line on something . . . If we have certain specific requirements - we may have more students who are in need of some English as a Second Language - then we'll ask for some assistance in that area. They may need that before we can work with them toward division priorities such as Language Arts. So if there is a certain way we want to go, we make a case for it.

It seems fair to say, then, that the principal placed school goals ahead of district priorities at least in some

situations. He did not appear to blindly follow divisional priorities, but examined them in the light of school needs, and sought compromise where this was deemed necessary. This finding was confirmed by the perceptions of staff about this dimension of the principal's behaviour (Appendix H, Table 24). For this dimension in regard to the regular school program, then, the researcher rated him as "effective".

### 2.6.b The Computer Program

The principal's actions in regard to the computer program illustrate the kind of impact principals can have when they mobilize their efforts, not only in their own schools but at the school division level as well. The computer program was not an expressed divisional priority at the time the subject school began implementing the computer program. In the case of this program, the principal placed it ahead of district priorities in terms of attention, time, and funds to support the program. However, this principal and the three other principals with whom he had joined forces recommended action on the computer program at the divisional level. As a result of their proposal, a divisional committee was formed, funds were allocated to elementary schools for the purchase of computers and software, and divisional policy declaring that computers were a priority was formulated.

Not only did the principal place the school computer program goal ahead of divisional priorities, but he worked to shape divisional priorities to conform to an emerging goal that he believed was important to his school and the wider community of schools in the division.

The dimension of behaviour he exhibited in regard to the computer program was rated as being that of an "effective" principal.

## 3. STRATEGIES

Strategies are defined as the actions a principal engaged in to influence factors associated with the experiences of students both in class and out of class.

### 3.1 EFFECTIVE PRINCIPALS DISPERSED DECISION-MAKING POWER AND DELEGATED AUTHORITY, BUT WITHIN A CENTRAL FRAMEWORK THEY HAD DEVELOPED, OR WITH WHICH THEY WERE IN AGREEMENT. THEY VALUED STAFF INVOLVEMENT IN DECISION MAKING, SEARCHED OUT STAFF ADVICE ON IMPORTANT AREAS, AND CONTINUOUSLY REFERRED TO STAFF IN AREAS WHERE STAFF HAD EXPERTISE. THEY TREATED THE TEACHER AS AN EQUAL IN THE PROCESS OF DECISION MAKING. FREQUENT AND REGULAR STAFF MEETINGS WERE THE RULE.

TYPICAL PRINCIPALS, IF AND WHEN THEY DID REQUEST TEACHER PARTICIPATION, FREQUENTLY DID SO TOO LATE FOR IT TO BE USEFUL, AND TENDED NOT TO TREAT THE TEACHER AS AN EQUAL

PARTNER. STAFF MEETINGS WERE HELD INFREQUENTLY.

### 3.1.a The Regular School Program

The area of decision-making in regard to the regular school program was examined in depth. Summaries of responses to questions put to administrators and staff in regard to this issue can be found in Appendix "H", Tables 5, 6, 7, 48, and 49.

The principal described how he viewed his role in school-wide decision-making during the interview:

> I have two roles, depending on whether I can agree with the direction the decision is going or not. When it comes down to the whole school, it's all my responsibility. So it's the old administrative thing of, if things are going your way or a way you can live with, then you go with the flow and you become a facilitator. If it looks like it's going the other way, you have to give some rationalization of why it shouldn't, and hope that you can change people's direction. I like to think that I'm reasonably good at that sort of thing, and that I can make things work . . . My position is that I'm all in favour of group decision-making, but there are certain things I reserve for my own decision. I will give you my reasons for them and you are welcome to try to change my thinking, but in the end, I am the one who is responsible, and the decision . . . has to be accepted by me. I can say that I've been able to accept staff decisions without any problem. I guess I'm flexible enough that I don't feel it has to be my way or no way very often.

When asked if he would like staff to be more involved in decisions, he stated:

> I'm not sure that staff really <u>can</u> be more involved . . . Anyone who has wanted the opportunity

> to involve themselves and to make their views known has been given the opportunity, whether it's our initial staff getting together when the school was being developed, or at staff meetings or sessions or whatever, it's been very open give-and-take. I'll say that to staff members. If people feel their voice hasn't been heard, then they haven't spoken up. Now that doesn't mean that everybody has agreed with them, but that they've had an opportunity to put across their point.

It would seem that this principal used a "democratic-centralist procedure" (Knoop and O'Reilly, 1977, page 3) which is defined as follows:

> The group participates in discussion and provides information, but the principal makes the decision.

In using this procedure, the principal under study valued and sought out staff advice. He established a framework such that he retained for himself the prerogative to make the final decision based on the responsibility level of the principal's role as he perceived it, although he indicated that he had not used that prerogative.

The principal used school committees as one means of providing dispersed decision-making and delegated authority in selected areas. One example was the Professional Development Committee. Its functions were to survey staff on topics for which they wanted school-level inservices, to set up an inservice schedule for the year, and to make the arrangements for and run the inservices. The principal served as a member of this committee and provided general

direction as to areas of inservice of which he approved.

Frequent and regular staff meetings were the rule in this school. Staff met once a week. Any staff member could place items on the agenda and lead the discussion on that item.

The principal under study was rated as "effective" in that he utilized a central framework within which decision-making was dispersed. He valued staff involvement in decisions, sought out staff advice in important areas, and held frequent and regular staff meetings. While the prerogative to overrule staff decisions was retained, in practice the staff took an active role in decision-making.

### 3.1.b The Computer Program

Decision-making in regard to the computer program was initially handled totally by the principal. He made the decision to initiate the program without reference to the staff.

At a later point, three months after the initiation of the innovation, a school-wide computer committee was established. It was chaired by the principal. The committee structure was intended to provide staff input into decisions regarding the computer program. Its functions were to plan and organize the continuing implementation process, including the acquisition of hardware and software and the provi-

sion of professional development activities, and to report back to staff. In actual fact, the principal continued to make many of the decisions relevant to the computer innovation on his own. He purchased computers without reference to the committee. In regard to software, one teacher commented that

> He didn't always go to the computer committee and say, 'Let's purchase this, this, and this.' He went out and purchased without the staff's approval, which he would get anyway, but he didn't want to have staff meetings and talk about it.

Thus, in terms of decision-making in relation to the computer program, in the main the principal used a "typical" principal's dimension of behaviour.

3.2 EFFECTIVE PRINCIPALS TENDED TO TAKE RESPONSIBILITY FOR AN INNOVATIVE THRUST IN THE EARLY STAGES, CHOSE INFLUENTIAL STAFF TO PARTICIPATE IN INNOVATIVE PROJECTS, AND TURNED IT OVER TO SELECTED STAFF ONLY WHEN THE PROJECT WAS RUNNING SMOOTHLY. THUS, WHILE ENSURING THAT THE PRINCIPAL'S PRIORITIES WERE CARRIED OUT, SOME STAFF PARTICIPATION TOOK PLACE.

TYPICAL PRINCIPALS TENDED TO LEAVE INNOVATIVE PROJECTS TO TEACHER INITIATIVE. THEY TENDED TO CHOOSE UNINFLUENTIAL STAFF TO PARTICIPATE IN INNOVATIVE PROJECTS.

### 3.2.a The Regular School Program

Little data were forthcoming on innovative thrusts at

the school level in the regular school program. The single innovative element observed by the researcher was a "publishing centre" for children's writing. The publishing centre was a seminar room fitted out with a typewriter and binding materials so that children who had written a "book" (usually a story ranging from 3 to 10 pages in length) could have it typed and bound by a parent volunteer. Several teachers who had attended an inservice where the idea of such a centre had been presented took the initiative and suggested that the school develop such a centre. They asked for and received the necessary equipment, and supervised the volunteers. The principal seemed to have been involved only minimally.

In terms of innovative thrusts in the regular program, the principal made a statement indicating that he left such projects to teacher initiative:

> [Speaking of] Language Arts as a major divisional priority - I don't know whether I've had that much influence in that area. Teachers know there's a new curriculum. They were aware of it and they were going to do something about it.

The principal obviously did not take responsibility for the new Language Arts curriculum, and there was no evidence of him taking responsibility in any other regular curriculum areas.

In this area, then, his dimension of behaviour was rated as that of a "typical" principal.

### 3.2.b The Computer Program

The principal provided the initial thrust for the computer program and continued to provide leadership for it up to and including the time of the study.

The three teachers who became the school's resource team for computers were asked to take on this responsibility by the principal. It did not appear that the principal deliberately chose influential people to participate in the project, since the basis for selection was that they had one unassigned period per day while the French itinerant teacher took charge of their classrooms. However, the principal did state that he invited their participation expecting that they would be able to carry out the pilot teacher/resource team role. A combination of elements, such as a close working relationship with the principal, the development of considerable expertise with computers, their leadership role in providing inservices and demonstrations for other teachers, and their special place as resource people on the Computer Committee, conferred on them a position of considerable influence. The rest of the staff certainly viewed them as influential at the time of the study.

The principal turned over specific elements of the computer program to members of the resource team as the innovation proceeded smoothly, for example, the management of computer allocations, the annotation of computer soft-

ware, and the provision of short workshop sessions at noon hour and after school. However, he continued to manage the overall project himself.

The principal, then, was rated as using an "effective" dimension of behaviour in this area in that he took responsibility for the computer program from the beginning, selected staff who were able to develop influence to participate, and turned elements of the program over to selected staff only when elements of the project were running smoothly.

3.3 EFFECTIVE PRINCIPALS FREQUENTLY PLAYED A DIRECT PART IN IMPLEMENTING CHANGE THROUGH SUCH STRATEGIES AS DEVELOPING PERSONAL EXPERTISE IN THE INNOVATORY AREA, INVOLVING THEMSELVES DIRECTLY IN START-UP ACTIVITIES, AND ATTENDING INSERVICE SESSIONS PROVIDED FOR TEACHERS. MORE INDIRECTLY, THEY CHOSE TEAM LEADERS, HELPED DEVELOP A TEAM APPROACH AMONG TEACHERS AS A STRATEGY TO SUPPORT INNOVATION, OR ATTENDED PLANNING MEETINGS.

TYPICAL PRINCIPALS WERE REPORTED TO HAVE LIMITED OR NO PARTICIPATION IN TEACHER INSERVICE RELATED TO NEW PROGRAMS. ON OCCASION THEY ENCOURAGED TEACHERS TO STAY OUT OF THEIR WAY AND NOT CAUSE PROBLEMS THROUGH NEW PROGRAM DEMANDS.

### 3.3.a The Regular School Program

The subject principal chose not to play a part in

implementing change in regard to the regular school program. He viewed teachers as being the experts in that area and left them alone to teach and to implement new curricula.

Teachers selected the curriculum areas to be addressed by school inservices. The principal would usually attend these sessions as a participant. He did not usually attend divisional inservices on regular curricula. The principal was not involved in building teams to address regular program areas, although teachers met in grade-level groups to provide some coordination across classrooms. The principal did not attend these meetings.

The principal was rated as "typical" for this dimension of behaviour.

### 3.3.b The Computer Program

The principal took an active role in regard to the computer program. He played a direct part in the implementation through developing a high level of personal expertise, being directly involved in start-up activities, and not only attending the inservice sessions provided by teachers but actually leading them on several occasions. He chose and helped develop a resource team to work with teachers. He chaired the meetings of the Computer Committee. Thus he met the criteria for being rated as "effective" for this dimension of behaviour.

3.4 EFFECTIVE PRINCIPALS ENCOURAGED STAFF TO SET AND EXPRESS THEIR OWN GOALS FOR GROWTH AND PROFESSIONAL COMPETENCE. THEY PROVIDED A FOCUS BY GIVING HIGH PRIORITY TO TEACHERS' CURRICULUM PLANNING, AND ENCOURAGED TEACHERS TO SPEND LARGE PROPORTIONS OF THEIR TIME IN INSTRUCTION. THEY SUPPORTED RISK-TAKING, INITIATIVE, AND CONTINUOUS CHANGE ON THE PART OF TEACHERS. THEY MADE THEMSELVES AVAILABLE TO DISCUSS TEACHER PROBLEMS. THEY WORKED DIRECTLY WITH TEACHERS TO SOLVE CLASSROOM PROBLEMS THAT MAY HAVE ARISEN IN THE PROCESS OF IMPLEMENTING NEW PROGRAMS.

TYPICAL PRINCIPALS TENDED NOT TO EXPRESS ENDORSEMENT OF TEACHER PRACTICES. THEIR STYLE OF INTERACTION WAS MORE FORMAL AND AUTHORITARIAN THAN THAT OF EFFECTIVE PRINCIPALS, AND TENDED TO DISCOURAGE RISK-TAKING. RATHER THAN DIRECTLY CONFRONTING PROBLEMS WITH TEACHERS, THEY OFTEN WITHDREW THEIR SUPPORT OR SIMPLY TOLERATED THE PROBLEMS.

### 3.4.a The Regular School Program

Teachers were asked if they received encouragement from the principal for setting goals for their own growth and professional development. The question received an ambivalent response from staff (see Appendix "H", Table 26, and the seven categories drawn from teachers' responses). Some teachers felt that discussion of their personal growth goals with the principal was important, and they took the initia-

tive and approached him. At the other extreme were teachers who viewed such discussion as implying that they were not fully professional if they needed such help; they reported that he "doesn't interfere". Only four teachers indicated that encouragement was provided in a regular manner, two of those making reference to the once-in-three years teacher evaluation and one commenting on the limited approach used. Seven teachers said he did not encourage such discussion. In this aspect, then, the principal was rated as "typical".

The principal tended to view teachers' work on curriculum and curriculum planning as important. Teachers were unanimous in stating that he gave high priority to this area. The principal set as a rule that inservice days were to address curriculum needs and not personal development or administrative tasks such as completing report cards. One teacher complained:

> One thing that is a kind of thorn in my side that he won't let us do - we would like a day to do report cards, or a half a day. A lot of schools do. But he won't go for that stuff. He likes us to do curriculum.

Several inservice days a year were devoted to curriculum areas. In regard to focus on curriculum planning, then, the principal was rated "effective".

Encouragement for teachers to spend large proportions of time in instruction did not seem to be part of this principal's focus. When asked whether he had concerns regarding

instructional classroom time, he stated:

> I've gone by the fact that I've had experienced teachers who presumably should know and follow what should be done . . . We have to remember that one of the good things about an elementary school is that it's flexible. There are a lot of things that may not seem like time-on-task but are, like a field trip or going outside to study. So you can't really judge the time.

For this aspect, the principal was rated as "typical".

That the principal did support risk-taking, initiative, and continuous change was confirmed by the teachers. Over and over again in the interviews they stated his confidence in them as professionals, and their certainty that he would support new directions and practices they might undertake. Teachers were encouraged to participate in divisional professional development activities such as curriculum committees and to share their expertise with the rest of the staff. In this area, the principal was rated "effective".

Teacher and classroom problems were sometimes handled by the principal, but more commonly were handled by the vice-principal. However, the process for handling such issues was set up by the principal, and teachers felt free to approach him when he appeared to have the time to talk to them. The vice-principal had a great deal of expertise in this area, and it seemed appropriate in this situation that she handle many of the teacher and classroom instructional problems that arose because she had taken on much of the

area of working individually with teachers as her special role. Since the area was relatively well provided for in the school, a rating of "effective" was given here.

In arriving at an overall rating for this area, when the principal's dimension of behaviour was compared with the descriptions provided above, it was realized that, while he exhibited some shortcomings in regard to "effective" principal behaviour, he did not fit the description of the "typical" principal in the least. He endorsed teacher practices strongly, tended to be informed and non-authoritarian in most exchanges that were observed and reported, and encouraged risk-taking. He tended to confront problems teachers might bring to him. Thus, for this area, he was given an overall rating of "effective".

### 3.4.b The Computer Program

A procedure set up by the principal which would encourage staff to express goals for growth and professional competence in the computer program was not really applicable given the short timeline since the implementation had been in place at the time of the study. Thus the issue was not examined in this study.

The principal gave high priority to teachers' curriculum planning for the computer area. Teachers from all grade levels used the Computer Committee meetings as a forum

for planning. The resource team provided leadership in planning for curriculum and resource utilization at the various grade levels.

Teachers were encouraged to spend a proportion of instructional time on computers which, when compared with the time spent on other non-optional subject areas such as science, was relatively large.

Risk-taking and initiative regarding the use of computers was strongly encouraged; this area was explored earlier in section 1.3.

The computer area was one in which the principal made every effort to make himself available to help teachers or to solve classroom problems. One teacher stated that "90% of the time he will come to the classroom and help you". He also arranged that the resource people be called on for assistance if he was not available.

The principal was rated as "effective" in regard to this dimension of behaviour as it pertained to the computer program.

3.5 EFFECTIVE PRINCIPALS MADE SPECIFIC ARRANGEMENTS FOR DEVELOPING THE KNOWLEDGE AND SKILLS OF THEIR TEACHERS IN THE AREA OF PROGRAM IMPROVEMENT, EITHER DIRECTLY BY WORKING WITH TEACHERS IN GROUPS OR INDIVIDUALLY, OR LESS DIRECTLY BY PROVIDING TIME AND OPPORTUNITY FOR INSERVICE, FOR MEETING WITH

CONSULTANTS, FOR SCHOOL INTERVISITATION, OR FOR BECOMING FAMILIAR WITH EQUIPMENT, RESOURCES, OR MATERIALS. IN RARE CASES, THEY WERE CAPABLE OF AND UNDERTOOK TO CONDUCT IN-SERVICE TRAINING THEMSELVES FOR STAFF.

TYPICAL PRINCIPALS, ACTING PRIMARILY AS SCHOOL ADMINISTRATORS, PROVIDED MINIMAL INSERVICE AND WERE INVOLVED ONLY IN MAKING THE MECHANICAL ARRANGEMENTS FOR SUCH INSERVICE. THEY TENDED TO TAKE LITTLE DIRECT RESPONSIBILITY FOR DEVELOPING THE KNOWLEDGE AND SKILLS OF THEIR TEACHERS IN A NEW AREA, LEAVING SUCH RESPONSIBILITY TO TEACHERS AND BEHAVING IN A REACTIVE MANNER TO TEACHER REQUESTS FOR SUCH DEVELOPMENT.

### 3.5.a The Regular School Program

Leithwood and Montgomery (1982) in describing the dimension of behaviour under discussion here report "effective" principals working both directly and indirectly with teachers in the area of program improvement. They describe "principals working closely with teachers in the classroom on issues identified during classroom observation". The subject principal, as mentioned above, did not appear to be working toward specific program improvement areas of any kind in relation to the regular school program. He did not carry out systematic classroom observation except once in three years when formal teacher evaluation was conducted,

and did not appear to have attempted to influence classroom approaches based upon observation. Thus in this area the principal was rated as "typical".

School inservices were provided based upon teacher selection of topics raising the process described in an earlier section of this chapter (section 2.3). Teacher requests to attend inservices outside of the school, inter-visitations, and meetings with consultants were encouraged and supported in a reactive manner by the principal. Thus both school inservices and outside professional development activities were not linked to concerted program improvement thrusts. The selection of areas in which to work was not viewed by the principal as an area for which he took responsibility, and was left up to teachers.

The principal was rated as "typical" for this dimension of behaviour.

### 3.5.b The Computer Program

The principal made specific arrangements for developing the knowledge and skills of teachers in the computer program area. Table 42 in Appendix "H" outlines areas in which the principal was involved. He worked directly with teachers by providing a staff-wide inservice which he conducted himself. He worked with the three school resource people as a group, and they in turn worked with individual teachers. He worked

with individual teachers directly, assisting them in the classroom or showing them software for use in the classroom. He provided opportunities to attend inservices outside the school, to visit other schools, and to meet with the school resource people. He arranged for the pilot teacher's involvement in the pilot project, and provided him with time to meet with the computer consultants. He took direct responsibility for developing the knowledge and skills of teachers in the new area.

Thus he was rated as "effective" in regard to the computer program in the above area.

3.6 EFFECTIVE PRINCIPALS GATHERED INFORMATION ABOUT A WIDE ARRAY OF ELEMENTS BEYOND THAT CONNECTED WITH IMMEDIATE PROBLEMS, INCLUDING MONITORING AND FOLLOWUP OF STUDENT PROGRESS, EVALUATION AND FEEDBACK ON THE CLASSROOM PERFORMANCE AND INSTRUCTIONAL ACTIVITIES OF TEACHERS, NEW PRACTICES IN EDUCATION, THE WORK-WORLD DEMANDS STUDENTS WERE LIKELY TO FACE, AND THE WIDER SCHOOL SYSTEM.

THE INFORMATION GATHERED BY TYPICAL PRINCIPALS FOCUSSED ON IMMEDIATE PROBLEMS LIKELY TO DISRUPT THE SCHOOL AND ON THE IMPLEMENTATION OF DISTRICT POLICY DECISIONS. THEY ENGAGED IN LITTLE EVALUATION OF TEACHERS' INSTRUCTION, AND THAT INFORMATION TENDED NOT TO BE SHARED WITH THEIR TEACHERS.

### 3.6.a The Regular School Program

The subject principal varied in his information-gathering activities depending on the area under consideration. Monitoring and follow-up of student progress was not an area to which he attended; it was left up to teachers. Evaluation of classroom performance was conducted by the principal only in response to divisional policy, and there was only one teacher out of the 15 interviewed who stated that the feedback was helpful to her (Appendix "H", Table 12). However, the principal read widely, and took an interest in new practices in education:

> I pride myself on being one who goes out and searches, and I attend a whole variety of conferences, some of which are related to computer areas and some of which are not. Whether it's regarding the personal safety program or computers or Language Arts or Family Life or whatever, I try to make sure I attend a whole variety of things throughout the year. I also read a lot . . . I try hard to advance my own professional development.

One of the routine practices of the principal was to scan the educational journals that were sent to the school before they went to the library, and to call teachers' attention to articles on areas he knew to be of interest to them. Work-world demands for students received attention: the principal made reference to discussions he had had with business men in the area who expressed concern about the skill levels of graduating students. The principal also sought out

information about the wider school system. He was aware of divisional policies, directions, and politics. He paid attention to developments at the Department of Education level. He sought out opportunities for formal and informal exchange with fellow principals in the school division.

The principal, then, had a mixed rating regarding the area of information gathering. Within his school, he did not gather information to a significant degree on the students and teachers in the school. When it came to the three areas outside of the school, he had developed a broad informational base. Looking at the "gestalt" of his behaviour in this area, it was decided that his dimension of behaviour resembled that of an "effective" principal more closely than it did that of a "typical" one, and he was rated as "effective" in this area.

### 3.6.b The Computer Program

The subject principal gathered information from a wide array of elements in regard to the computer program. While no formal information on student progress or the instructional activities of teachers in regard to the program were gathered, the principal was a frequent visitor to classrooms using computers, assisted teachers, and received feedback on the progress of the program through the resource people. As far as new practices in education were concerned, the com-

puter program itself was a new practice at the elementary school level. As well, new ways of proceeding with and managing the program were collected and, where appropriate, instituted, for example, the use of student proctors to assist with the program. Information on the computer program as part of the wider school system was gathered through attendance at the provincial-level Pilot Project meetings as well as at a national computer conference held in Winnipeg in October, 1984 and at a variety of inservices and conferences attended by the principal.

His rating for this area was "effective".

## 3.7 EFFECTIVE PRINCIPALS SAW IT AS A PRIORITY TO PROVIDE TEACHERS WITH NEEDED RESOURCES AND INSTRUCTIONAL MATERIALS. THIS INCLUDED SEARCHING OUT NEW MATERIALS FOR USE WITHIN THE SCHOOL.

TYPICAL PRINCIPALS WERE LESS ACTIVE IN THIS REGARD, BUT THEY ALSO ATTENDED TO ROUTINE ASPECTS OF COLLECTING RESOURCE MATERIAL SUCH AS LOCATING REQUESTED MATERIAL. THEIR STANCE WAS REACTIVE RATHER THAN PROACTIVE.

### 3.7.a The Regular School Program

The difference between "effective" and "typical" principals in regard to the above dimension of behaviour is one of degree and stance. The subject principal tended to be

active in providing teachers with resources and instructional material. He described a teacher taking over a Grade 6 classroom and needing books immediately:

> I took the order down to the Board office, then I went to the Textbook Bureau, and I was back with the books within an hour. The teacher was flabbergasted that here were the books she needed... It's worth it, because it shows that teacher I care, and it gets the thing done.

While this action was in response to the teacher's request, it demonstrates the principal's proactive manner in dealing with the issue of resources.

Observation in the school indicated that the school was well-supplied with resources and instructional materials especially considering that it was a new school. Part of the over-expenditure of $8000 for the first year was due to the principal's decision to use money over budget to provide resources. Besides books, library materials, and audio visual equipment, it was noted that the school provided teacher aide time, attractive materials, and equipment such as a laminator for creating instructional materials tailor-made to the teacher's request. Two of the general observation periods noted the three teacher aides creating wall charts, instructional games, word lists, or group activity materials in the workroom, and going to classrooms to mount or place these materials where the teachers wanted them.

It was obvious that this principal made it a priority

to provide teachers with needed resources and instructional materials. He was rated "effective" for this dimension of behaviour in relation to the regular school program.

### 3.7.b The Computer Program

Providing resources for the computer program was an ongoing priority with the subject principal. As was set out in Step 9 of the computer implementation path (Chapter IV) the principal was proactive in his thrust to equip the school with computers and software. He was rated as "effective" in regard to providing needed resources and instructional materials for the computer program.

## 3.8 EFFECTIVE PRINCIPALS FACILITATED WITHIN-SCHOOL COMMUNICATION. THEY INITIATED THE PROVISION OF INFORMATION TO STAFF. THEY FOCUSSED SUCH INFORMATION ON SCHOOL GOALS AND PRIORITIES, AND PROVIDED FEEDBACK ABOUT THE STAFF'S PROGRESS TOWARD GOALS.

THE TYPICAL PRINCIPAL'S WITHIN-SCHOOL COMMUNICATION LACKED GOAL ORIENTATION. IT TENDED TO DEAL WITH INDIVIDUAL PROFESSIONAL MATTERS OR MESSAGES FROM THE DISTRICT OFFICE. TYPICAL PRINCIPALS INITIATED LITTLE INFORMATION THEMSELVES.

### 3.8.a The Regular School Program

While the subject principal facilitated within-school

communication through staff and committee meetings, the communication lacked goal orientation. It tended to deal with individual professional or administrative matters. One teacher described the typical staff meetings as handling:

> . . . a lot of information items, first of all. There's a lot of things that come into the school that have to be addressed. Any memos from Central Office that are pertinent to us. Sequence of events that will come to be within the next little while, and changes that are in order. And perhaps specific events within the school that are being planned and will be implemented within the next little while, like our musical, and that will be discussed. Plus any questions or problems. We try to iron them out. Plus we use staff meetings for any staff member to talk about expertise or share an idea. There's always an opportunity for any staff member to present committee reports or to share what they've learned at a particular inservice or to make available what they have as handouts, things like that.

Because the principal did not provide a focus on goals or provide feedback on progress toward goals, he was rated as utilizing a "typical" dimension of behaviour in regard to in-school communication.

### 3.8.b The Computer Program

In-school communication in regard to the computer program had the focus on goals that was missing in communication about the regular program. Teachers were informed at the time of initiating the program that the goal was that computers be used in every classroom and that the focus was

the use of computers. The principal initiated the provision of information. One teacher explained how this happened:

> We've had one general staff inservice on the Computer Awareness. He went through the whole curriculum and teachers sat in on that. After that, there have been mini-sessions at lunch or 3:30 . . . Mike [the principal] gave some of those as well as the resource people. We've been made aware of divisional workshops too.

Information provision was carried on at all levels: with the entire staff, with the resource people, with groups such as the computer committee, and with individuals. Several teachers stated that it was common for the principal to invite teachers to come to his office during their preparation time so that he could demonstrate computer material that might be of interest to them.

One major way in which in-school communication was provided for the computer program was through the resource people who worked both as a group and with individual teachers. They were time-tabled into a range of classrooms on a regular basis to teach not only students but teachers as well, and this proved to be a viable means of communicating the goals and content of the computer program.

The principal was rated "effective" in regard to in-school communication for the computer program.

3.9 EFFECTIVE PRINCIPALS WERE CLEAR AND UNAMBIGUOUS ABOUT SCHOOL GOALS. THEY WERE CAPABLE OF IDENTIFYING AND UTIL-

IZING WAYS OF ACHIEVING THESE GOALS WITHIN THE SCHOOL. THEY WERE PROACTIVE IN THEIR ATTITUDE TOWARD SCHOOL DIRECTIONS AND PROBLEM SOURCES. THEY VIEWED "THE SYSTEM" AS ABLE TO TOLERATE DIVERSITY IN THE PRINCIPAL'S CONDUCT AND THE SCHOOL'S PROGRAMS IF THAT WAS REQUIRED TO MEET SCHOOL GOALS.

TYPICAL PRINCIPALS HAD NO CLEAR PROCESS FOR GOAL-SETTING AND LACKED PRECISE GOALS. THEY APPROACHED PLANNING IN ABSTRACT TERMS AND WERE FREQUENTLY UNCLEAR ABOUT WHAT STRATEGIES TO USE. THE IMMEDIATE PROBLEM TOOK PRECEDENCE. THEY TENDED TO BEHAVE REACTIVELY, RESPONDING PRIMARILY TO DISTRICT DEMANDS AND THE MANY OTHER SOURCES OF PROBLEMS ENCOUNTERED DAILY. THEY VIEWED "THE SYSTEM" AS A PRIME DETERMINER OF THEIR AND THEIR SCHOOL'S ACTIVITIES.

### 3.9.a The Regular School Program

The subject principal was unclear and ambiguous about school goals. He was an able strategist who was capable of utilizing "the system" for relatively concrete areas such as obtaining learning materials or resources to address specific areas such as English as a Second Language needs. However, the strategies he employed were not linked to overall school goals.

The principal was rated as "typical" for this dimension of behaviour for the regular school program.

### 3.9.b The Computer Program

The principal was clear and unambiguous about the goal of the school in regard to the computer program. He proved to be an able strategist in terms of identifying and utilizing ways of achieving that goal within the school. He involved three staff and used them in an effective way to further that goal. He was proactive in obtaining resources and providing professional development for the staff. He viewed "the system" as able to tolerate diversity both in terms of his own conduct and the school's program, and challenged "the system" itself to change in terms of its priorities and funding allocations.

The principal was rated as "effective" for this dimension of behaviour as it related to the computer program.

## 3.10 EFFECTIVE PRINCIPALS WERE EFFICIENT AT HANDLING ROUTINE ADMINISTRATIVE TASKS, THUS FREEING TIME FOR GOAL-RELATED ACTIVITIES.

TYPICAL PRINCIPALS USED THE BULK OF THEIR TIME TO HANDLE ROUTINE ADMINISTRATIVE TASKS, LEAVING LITTLE TIME AVAILABLE FOR IMPROVEMENT EFFORTS.

### 3.10.a The Regular School Program

As has been indicated previously, the principal did not

focus on goals relating to improving the regular school program. When teachers were asked how they perceived the principal handling his work in the school, they were unanimous in responding that most of his time in the school was spent on paperwork and routine administrative tasks (Appendix "H", Tables 15 and 16). One teacher captured the general feeling by stating:

> I think he's having a heck of a time. I think he's overloaded himself with paper. I find he's struggling. I know this year he hasn't been happy with the paperwork. I know he's working late.

None of the teachers mentioned the principal spending time on work related to regular program areas, and his contact with students in that area seemed to be a concern with some of the teachers. One teacher commented.

> We evaluated the principals this year, and part of the evaluation on the part of almost every teacher was that there's no contact time with children because he's so busy.

Teachers were asked to comment on what the principal conveys to the staff as being the most important part of his job. Part of the way a principal conveys his priorities is, of course, the use he makes of his own time. Eleven out of fifteen teachers responded that it was paperwork and routine administrative tasks that were conveyed as most important by the principal (Appendix "H", Table 17).

The principal's lack of organization in terms of

handling routine administrative tasks was confirmed by a statement he made during the interview:

> No, I don't have a pattern other than I at least like to look at my mail . . . I try to look at that and see if there's anything urgent. Then I may have things in my day-book which are items of importance. One of the things I've tried to make people aware of is that principals can't plan. All it takes is one phone call from a parent or the superintendent's department or whatever, or a colleague, and whatever you thought of is no longer there. And so I, while I have a semi-plan of what I want to do that day, I rarely if ever manage to stick to it, in the sense that there are other things that are more urgent.

It would seem that the principal used the bulk of his time to handle administrative tasks using a reactive approach.

In regard to the regular program, then, the principal was rated as using a "typical" dimension of behaviour in handling routine administrative tasks.

### 3.10.b The Computer Program

The principal spent a large amount of time on the computer program, time for developing his personal expertise, planning and managing the initiation and implementation phases, and time for problem-solving in regard to the innovation. In spite of the heavy administrative workload described above, he managed to free sufficient time from administrative tasks to work on the goal of implementing the use of computers and working toward seeing them integrated

into classroom program across the school.

The principal was rated as utilizing an "effective" dimension of behaviour in regard to the computer program in the area of handling routine administrative tasks.

## SUMMARY OF THE PRINCIPAL'S DIMENSIONS OF BEHAVIOUR

A relatively unambiguous picture of the principal's dimensions of behaviour as they related to the two program areas emerged from the study, as illustrated in Table VII and Figure 2. In regard to the regular school program, the principal was rated as using "effective" dimensions of behaviour in only 25% of the areas studied with "typical" dimensions used in the remaining 75%. In the ratings in regard to the computer program, a very different distribution emerged. Here the principal used "effective" dimensions of behaviour in 85% of the program, and "typical" dimensions in 10%, with one nonapplicable area accounting for the remaining 5%.

The data analysis strategy employed and discussed in this chapter confirms the bi-modal nature of the principal's dimensions of behaviour. The study discovered that the principal tended to use "typical" dimensions of behaviour in regard to the regular school program and "effective" dimensions in regard to the computer program.

| Dimensions of Principal Behaviour | RATING | |
|---|---|---|
| | Regular School Program | Computer Program |
| 1. GOALS | | |
| 1.1 principal's priority for students | Typical | Effective |
| 1.2 clarity of goals | Typical | Effective |
| 1.3 orientation to teachers | Typical | Effective |
| 1.4 communication with parents | Typical | Effective |
| 2. FACTORS | | |
| 2.1 teacher selection | Typical | N/A |
| 2.2 clarity of objectives | Typical | Effective |
| 2.3 instructional strategies | Typical | Effective |
| 2.4 integration of program objectives | Typical | Effective |
| 2.5 funding sources | Typical | Effective |
| 2.6 division vs. school goals | Effective | Effective |
| 3. STRATEGIES | | |
| 3.1 decision-making approach | Effective | Typical |
| 3.2 involving staff in the innovation | Typical | Effective |
| 3.3 principal's involvement in innovation | Typical | Effective |
| 3.4 encouraging staff improvement | Effective | Effective |
| 3.5 providing for teacher knowledge and skills | Typical | Effective |
| 3.6 information gathering | Effective | Effective |
| 3.7 provision of resources | Effective | Effective |
| 3.8 in-school communication | Typical | Effective |
| 3.9 planning strategies | Typical | Effective |
| 3.10 routine task handling | Typical | Effective |

Table VIII: Summary of Ratings of the Principal's Dimensions of Behaviour.

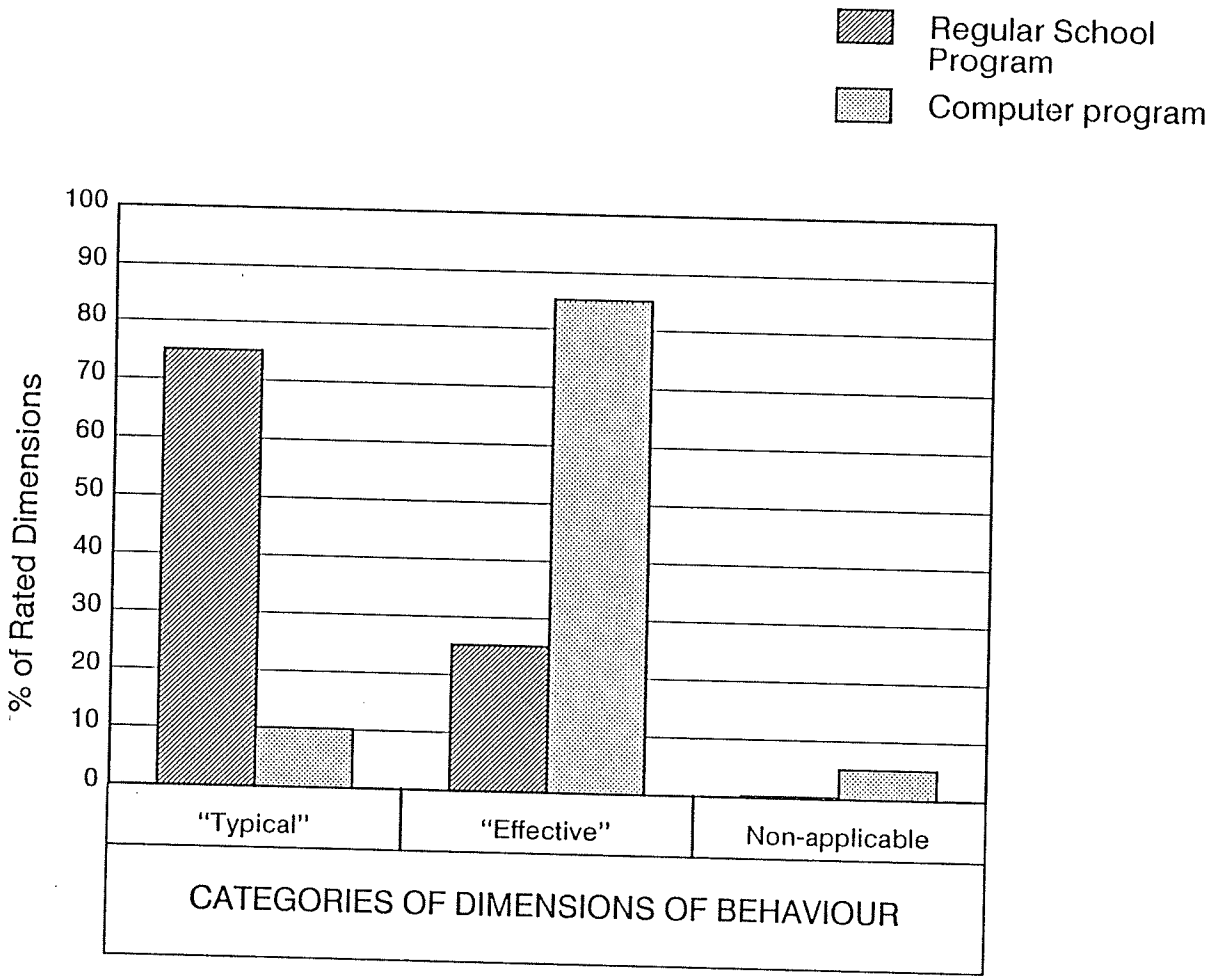


Figure 2: RATINGS OF DIMENSIONS OF PRINCIPAL BEHAVIOUR IN THE REGULAR SCHOOL PROGRAM AS COMPARED TO THE COMPUTER PROGRAM

B. Relationship of the Dimensions of Principal Behaviour to the Regular School Program

In regard to the regular school program, the data analysis indicated the principal's tendency to utilize "typical" dimensions of behaviour in the majority (75%) of the dimensions investigated, with "effective" dimensions utilized in only 25%. Review of the distribution of the "effective" dimensions used reveals the following pattern:

i) In regard to goals, the principal used no "effective" dimensions.

ii) In regard to "factors", one "effective" dimension was used out of a total of six dimensions.

iii) In regard to "strategies", the principal used four "effective" dimensions out of a total of ten dimensions.

The pattern of dimensions used, then, was almost entirely "typical" in the first ten items on the scale, with all the "effective" behaviours except one coming under third category, that of "strategies".

Leithwood and Montgomery (1982) posited the "goal" and "factor" dimensions as being highly important because of their pervasive school-wide influence. The single "effective" rating in those categories, that of divisional versus school goals (#2.6), indeed had significance for the school-wide approach to instruction, especially for students

who had special learning needs.

Leithwood and Montgomery posited "strategies" as less important than the goal and factor dimensions because their influence on the overall school program was likely to be less pervasive. It would also seem that discrimination between dimensions of behaviour in the "strategies" category is less clear-cut than for goals and factors for two reasons:

i) both "effective" and "typical" principals engaged in most strategies;

and ii) the difference between "effective" and "typical" principals on each strategy was usually only a matter of degree and stance, and not of kind as in the case of goals and factors.

Because of the problem of clear discrimination, the possibility of having rated the principal more positively in this area than would be the case under more clear-cut definition must be considered.

The subject principal received four out of five of the "effective" ratings in regard to dimensions of behaviour in the least important of the three categories as they pertain to significance in terms of influence on the total school program. The four "effective" ratings in the "strategies" category were for the following areas:

3.1 decision-making approach

3.4 encouraging staff improvement

3.6 information gathering

3.7 provision of resources

Of these ratings, the following points can be made:

i) two of the ratings, 3.1 and 3.7, were definite "effective" ratings in which the principal clearly conformed to the definition. However, two (3.4 and 3.6) were mixed, in that the principal met half the criteria but not the other half, and was determined as "effective" because, on balance, the "gestalt" of his behaviour did not conform to the description of the "typical" principal's behaviour. In these instances, it would have seemed more appropriate to use a continuum format, in which case he would have ranked at the mid-point between "effective" and "typical" behaviour. Thus in these instances he was ranked as "effective" largely because it was a forced-choice rating. This situation indicates the difficulty of using a two-point scale, which in the above instances was overly-restrictive, and also indicates that there are limitations in applying set definitions in ethnographic research.

The main point is that, while the principal rank-

ed as "effective" in four out of ten areas of the strategy category, he was indubitably "effective" in two areas and partially "effective" in the remaining two.

ii) none of the areas in which the principal was rated as "effective" in the strategies category had direct influence on the classroom, as might other strategy areas. One for which this potential existed, #3.6, "information gathering", included information on students and teachers in its definition, but was not used for that purpose by the principal.

Thus, even when the principal did rate as "effective", it was not in areas having significant impact on the classroom program.

iii) two of the areas rated as "effective" (#3.6 and #3.7) were ones the principal basically attended to alone, that is, they involved minimal interaction with others. Thus their impact on school-wide processes would tend to be more restricted than for areas such as in-school communication which would be likely to have wider ramifications.

It was concluded that the principal's dimensions of behaviour in the "strategies" area, while rating as partial-

ly "effective", would have limited impact on the school-wide program.

When examining the gestalt of the principal's dimensions of behaviour in regard to the regular school program, it was the pervasive typicality of his approach in the dimensions most critical for influencing school-wide improvement that was most striking. No "effective" dimensions were indicated in the "Goals" category, which Leithwood and Montgomery cited as of major school-wide importance. This meant that the principal was unclear about goals for students and did not perceive his role as providing school-wide direction for instruction. Teachers in turn lacked clear goals to which they could orient their work with students. Communication with teachers and parents lacked a goal orientation. The school as an organization thus lacked a clear sense of direction.

The lack of clear goals had a negative effect upon the second category, "Factors". Four of the areas in this category (teacher selection, clarity of objectives, instructional strategies, and integration of program objectives) require goal clarity if priorities are to be established and a coordinated approach made feasible. Without goal clarity, there is no foundation upon which the principal and staff can make joint decisions about improvement of the school program or about measuring educational results. Effectively

utilizing and coordinating human and material resources, instructional methods, time, emphases, and teacher evaluation all flow from articulated and correlated goals and priorities. A coordinated process based upon clear direction did not exist in the school.

The subject principal did not provide the leadership necessary for a coordinated approach across grades and subjects in the school. Basically it was the individual teachers who determined all instructional matters: which curricula they would implement, which areas they would emphasize or de-emphasize, how and whether to deal with different student needs, what instructional methods to use, how students were evaluated, and what instructional resources they would use. Teachers need to make many of these kinds of decisions on a day-to-day basis, but they need the overarching framework of articulated purpose to provide for school-wide coordination and an accumulative effect upon student learning.

It was concluded that, in regard to the regular school program, the principal was basically "typical" in his approach. He did not attempt to influence the school through providing the type of educational leadership implied by the "effective" dimensions of behaviour outlined by Leithwood and Montgomery. Instead, he provided administrative leadership geared to maintaining the smooth running of the school.

C. Relationship of the Dimensions of Principal Behaviour to the Computer Program

The principal tended to utilize "effective" dimensions of behaviour in regard to the computer program. The analysis in this chapter indicates the use of "effective" dimensions of behaviour in 85% of the dimensions, with "typical" dimensions accounting for only 10% and one non-applicable dimension for 5%. Review of the distribution of the dimensions revealed that:

a. in regard to "Goals", all four dimensions were rated as "effective".

b. in regard to "Factors", four were rated as "effective", one "typical", and one as non-applicable.

c. in regard to "Strategies", nine were "effective" and one was "typical".

A particularly noticeable feature of the distribution is that the principal was rated as "effective" in all four goal dimensions, in strong contradistinction to the consistently "typical" ratings for the goal areas in regard to the regular school program. His "effective" ratings for "Factors" were five times as numerous for the computer program as they were for the regular program, in spite of one dimension being non-applicable. Thus it can be concluded that his approach to the crucial areas of "Goals" and "Factors" was much more strongly geared to "effective" be-

haviours in regard to the computer program than for the regular school program.

In the "Strategies" cluster, there was little ambiguity experienced by the investigator in the process of assigning the ratings, as there was in the two dimensions of the regular school program discussed previously.

A pattern shift is noticeable in the ratings for the first "Strategies" item, "decision-making". Whereas the overall tendency was that dimensions for the regular school program were rated "typical" and those for the computer program were rated "effective", in the case of this category the ratings were reversed. The principal was rated "effective" in the regular school program because he used participative processes of leading that could be shared with the staff. Yet, for the implementation of the new program, he used a directive approach; he single-handedly mandated that it would happen, and a successful implementation took place. It may be that a model of principal behaviour may need to take cognizance of the possibility of directive behaviour being as effective as participative behaviour for this dimension where a new system or technology is concerned. Innovation is often not a democratic process and may sometimes be best pursued by individuals who care passionately about an issue and build their own team of supporters, as did the subject principal.

It was concluded that, in regard to the computer program, the principal was, in the main, "effective" in his approach. He was able to provide educational leadership to this part of the school program, thus bringing about successful implementation of the program through goal integration, attention to factors having a school-wide influence, and addressing the "Strategy" areas in a manner consistent with the goals.

## SUMMARY

In regard to the regular school program then, the subject principal used a configuration of dimensions of behaviour largely in the "typical" range. The type of leadership he provided in this program area was administrative.

In regard to the computer program, the principal used mainly "effective" dimensions of behaviour. He provided educational leadership in this program area, a type of leadership qualitatively different from that used in regard to the regular program.

# CHAPTER VI

## THE RELATIONSHIP BETWEEN THE DIMENSIONS OF PRINCIPAL BEHAVIOUR AND PROGRAM AREA: ANALYSIS OF THE FINDINGS

The purpose of this chapter is to set out the analysis of the relationships between findings developed in the previous two chapters, to develop critical insights based upon the findings, and to provide advances to the version of the Leithwood and Montgomery model (1982) upon which the study was based in light of the findings derived from the actual situation.

The investigator had assumed from the original model that the principal's approach for each dimension of behaviour would be congruent across the school program. The relationship discovered between the principal dimensions investigated and particular program areas did not support this assumption: the major finding was that the principal's use of dimensions of behaviour rated "effective" and "typical" differed significantly depending upon whether he was addressing the regular school program or the computer program. Thus analysis of a different nature was needed to accommodate the lack of congruence that was perceived between the model and the major finding of the research.

At this point, theoretical perspectives from the

cognate disciplines provided support for the direction the analysis took.

From the perspective of research on effective principals, Blumberg and Greenfield's study (1982, page 231) stressed the idiosyncracy they discovered in principals' approaches. They pointed out that:

> Any attempt to explain and analyze the behaviour of an individual must conceive of that behaviour as a function of the person's perceiving and interacting with a particular situation... In order to account for the ability of a school principal to exercise influence in a school attention must be given not only to the principal as a person but also to the structure and dynamics of the school as an organization and to the larger social system (the school district) of which the particular school is a part.

In the case here being considered, it seemed essential to attend to contextual factors bearing on each program area in order to address the question of why the principal used a different approach in each area. Tannenbaum and Schmidt's work (1958) provided a perspective that seemed appropriate for application. They maintained that a leader can vary leadership style to cope with differing problematic situations. They suggested the following forces to be considered by a manager in adopting a leadership style: forces in the manager, forces in subordinates, and forces in the situation. It was decided to use Tannenbaum and Schmidt's force structure (consisting of forces in the situation at the school system, school and program levels; forces in the

staff; and forces in the principal) to examine the principal's choice of dimensions of behaviour in each program area in order to gain insight into each situation.

In the following sections each program area was examined in terms of the forces relevant to that area that impinged upon the principal. The insights derived from this analysis were then integrated with the findings generated through the major focus of the study to provide suggestions for modifications and extensions to the version of the Leithwood and Montgomery model used in the study.

## A. The Context of the Regular Program

Forces that appeared to be relevant to the principal's use of "typical" dimensions of behaviour in regard to the regular school program included:

### 1. Forces in the Situation

1.a Forces in the school system

i) The loosely-coupled nature of the school system (Weick, 1976). Each school in a division is a more-or-less self-contained unit for which the principal is held responsible. The subject principal stressed the sense of personal responsibility he had due to this feature. The school division

usually sets priorities for curricular areas to be addressed, and supports these priorities through inservices directed mainly to teachers. However, it tends to provide little leadership or direction regarding the crucial role of the principal in program improvement efforts. It tends to overlook the principal as the only person who can establish the organizational climate and conditions that can lead to improved school outcomes for students. It would seem that the school division had provided little direction or incentive for addressing program improvement in regard to the regular school program.

ii) A premium is placed by central office on maintaining a peaceful, smooth-running school. A principal soon comes to realize, as it seemed did the principal under study, that problems that come to the attention of central office are damaging to his professional standing. To attempt to modify the deeply-ingrained ways in which principals and teachers work in the program area may cause disruption and requires that significant time be allocated for program areas as opposed to administrative duties. The principal may have decided to focus on the simpler area of administrative tasks which would also receive central office reinforcement.

1.b. Forces in the school

1.b.1 Schools have a low degree of structural complexity, being hierachically flat. The result is to give the principal centrality of position in the school. Little integration or priority-setting on a school-wide basis is likely to occur without his leadership. In the subject school, the principal took the position that school-wide direction and integration need not occur. In taking this "typical" principal approach, it seemed that he was unaware of the need for program integration across the school and its potential for impact on students.

1.b.2 Schools as organizations are frequently hampered by goal ambiguity. No goals were specified in the subject school, largely because they seemed to be unimportant from the principal's perspective. Thus a crucial element that could have provided the rationale for the use of "effective" dimensions of behaviour on the part of the principal was non-existent.

1.b.3 Specific to the situation in the subject school was the fact that it was a new school with a

strong parental community. This situation in all likelihood tended to exascerbate the tendency of the principal to focus on a smooth-running school and not to "rock the boat" by attempting to develop new approaches which might have received considerable resistance from teachers and in turn be communicated to parents.

1.b.4 Schools are loosely-coupled organizations. Both principals and teachers tend to take a limited view of the concept of the organization, and thus fail to focus upon and work to change implicit norms and approaches that work against an integrated school program. The sharp division between principal and teacher roles that is a norm in most schools, and as was the case in the subject school, places constraints on the possibility of using group approaches to improving the school program. Teachers in the subject school individually took responsibility for all aspects of their program. No indication of attempts by the principal to initiate collaborative attempts in the regular program were evident, but there was evidence of teachers viewing the possibility negatively while they were being

interviewed. The loose-coupled nature of the school organization then would be a major block to the principal utilizing "effective" dimensions of behaviour in some of the areas that were examined.

Also due to the loosely-coupled structure, delegation of areas of responsibility to individuals or groups within the school is not common. Principals tend to feel that they have to handle all the areas of responsibility themselves. A case in point in the subject school was the role of the vice-principal. The principal delegated to her partial responsibility for working with the individual teachers to address classroom or student problems that came to the administrators' attention. The definition of the nature of the delegation of responsibility was unclear and incomplete. It did not include coordination of curricular areas across the school. The vice-principal had considerable expertise and experience in the curriculum area, and since the school-wide level of coordination was lacking, delegating such responsibility to her and giving her the clear authority to carry it out could have had beneficial effects. The dimensions of

"effective" behaviour provide for the possibility that areas of importance be delegated to others on the school staff who are able to carry them out well, as long as the principal is in agreement. This could have been one means the principal might have used to provide the integration that was missing in his approach.

1.c. Forces in the regular program area

1.c.1 School programs have become more complex over the years and require a high level of professional knowledge and expertise if they are to be well-applied in the classroom. It is common for principals to feel that the program area is so complex and fast-changing that one person does not have the expertise and skills necessary to direct events. The subject principal felt that his knowledge and expertise were at least in some ways not comparable to that of the teachers. This constrained him from taking a direct leadership role in regard to the regular instructional program. However, the use of "effective" dimensions of behaviour does not require the principal to direct all events. One possibility is to use a management team with a

mix of skills and expertise to direct the school program. The principal, however, must play a coordinating role as he works towards integrating the differentiated subgroups.

The subject principal, not conceiving of his role as being that of an educational leader in regard to the school program, used "typical" behaviour and simply left teachers alone to teach.

1.c.2 Change processes impacting upon regular school program areas are often aimed at reconceptualizing or restructuring basic ways in which schools do things. That is, they often involve developing "a framework through which people reconceptualize their tasks and their relationships with others" (Blumberg and Greenfield, 1982, page 240). Change of this order tends to be viewed as relatively undesirable because it contains the potential for disruption of the regularities of the school.

The use of "effective" dimensions of behaviour imply that a principal using them would be attempting to bring about significant changes in

the program area with the possibility of disruption as mentioned above. The subject principal may have chosen to use "typical" dimensions of behaviour as a means of avoiding disruption of the regularities within the school.

2. Forces in the Staff

The level of staff experience and professionalism was unusually high in the subject school. The staff members all had a minimum of five years of successful teaching experience. Many were involved in professional activities, such as serving on divisional curriculum committees (four from this school were on the Language Arts committee) and on the professional development team for the divisional teachers association.

The principal mentioned several times that he had a highly experienced and professional staff and that he did not perceive them as requiring regular supervision as would new teachers. He saw them as handling the program area adequately. He seemed to see no need for him to provide coordination or integration across the grades.

Further, the principal's perception of the high level of teacher expertise combined with an almost militant emphasis by some teachers on their right to autonomy in operating their programs may have tended to immobilize any

intentions toward school-wide integration with which the principal may have begun.

Similar effects were noted on the area of staff evaluation. The principal did not engage in regular and systematic staff evaluation. Evaluation was conducted only to meet the minimum policy requirements of the school division.

As a result of his perception of the strength of the staff base in terms of both professional expertise and the norm of autonomy, the principal probably assumed that to implement the kind of approach implied by the "effective" dimensions of behaviour would have involved taking a strongly assertive stance with teachers in order to negotiate a school-wide role for himself. There were eight factors and strategies in which the principal did not use "effective" dimensions of behaviour and which would have involved him working with teachers in ways which did not conform to the norms current in the school. They were:

<u>Factors</u>

2.1 teacher selection

2.2 clarity of objectives

2.3 instructional strategies

2.4 integration of program objectives

<u>Strategies</u>

3.2 involving staff in innovation

3.3 principal involvement in innovation

3.5 providing for teacher knowledge and skills

3.9 planning strategies

Since teachers viewed these areas as their own special domain, for the principal to attempt to influence them would have involved the difficult task of challenging group norms.

3. Forces in the principal

The centrality of the principal's position was referred to in the earlier section on forces in the school organization. The flat hierarchical structure of schools is reflected in the fact that the principal is the only person who has "legitimated access to its total functioning" (Blumberg and Greenfield, 1986, page 245). This point is an important preamble to the points that follow.

3.a. Goal structure

A finding common to school theorists such as Blumberg and Greenfield, Leithwood and Montgomery, and the school effectiveness movement is, once again, the centrality of a clear goal structure to undergird the principal's work. Principals need to have a clearly-articulated philosophy of education which is translated into action influencing all parts of the school organization. Principals who do not clearly know where they want to go and what is important to accomplish communicate a lack of direction to their teachers, and the

school then lacks a focus to which to gear efforts. Such principals show a tendency to put their energies into handling the minutiae of the school, thus relinquishing the leadership role.

While the subject principal made some general statements that could be conceived of as his philosophy, such as the desire to see children get along well together, the statements were too vague to serve as the basis for the establishment of effective priorities and principles. It seemed that he did indeed relinquish his leadership role and tended instead to devote his time to routine administrative tasks.

3.b Attitude toward the "status quo"

Blumberg and Greenfield (1982) found that one viewpoint shared by the high-achieving principals they studied was that none of them conceived of their role as maintaining the status quo:

> These people were continually alert for opportunities to make things happen, and if the opportunities didn't present themselves, they created them (page 246).

These individuals were capable of making their goals "operational both through long-term strategy and day-to-day actions" (page 246).

In contrast, the subject principal stated his

satisfaction with the way things were as far as the regular school program was concerned. Given this attitude, he would see little need to employ achievement-oriented "effective" dimensions of behaviour.

3.c Handling administrative tasks

Also common in the studies of both Blumberg and Greenfield (1982) and Leithwood and Montgomery (1982) was the finding that effective principals were able to handle with dispatch the routine tasks of running the school, so that they were able to gain the time needed to address key priorities. The subject principal appeared to be consumed by routine administrative work much of the time.

c.4 The principal's view of the organization

Forces discussed above under the wider system, the school as an organization, and the staff impinged on this principal. Principals are socialized into the educational system from their first days as teachers, so that they often come to accept the system as it operates as the way it should be. The norms of the organization sanction the established ways of working with teachers, programs, students, parents, and school board officials. These norms include not changing the

interpersonal and structural operations of the school by challenging "what is" and taking a proactive role on issues. The subject principal seemed to be willing to work within the structures imposed upon his role by the regularities of the system, particularly in regard to the norms of teacher autonomy in the classroom program. This meant that he had placed himself in a position of limited power in regard to the most urgent part of his role, that of providing educational leadership, a process which involves influencing people to do things differently from the way they have always been done in order to bring about program improvement.

## Summary

Examination of the forces impinging upon the principal ranging from those in the wider school system to those within himself helped in some measure to explain the typicality of the principal's dimensions of behaviour in regard to the regular school program. There is little doubt that the forces that impel principals to maintain the status quo are formidable. Had the principal had an integrated philosophy linked to a feasible implementation strategy, he might have been willing to challenge those forces. Given that he lacked such a philosophy, and that he had a strong-minded staff who would have been likely to have challenged his authority

to undertake significant change that would potentially affect their autonomy, their relationships with the principal and their colleagues, and the structure of the school organization, he appeared to have chosen not to attempt to influence the school through providing the type of educational leadership implied by the "effective" dimensions of behaviour derived from Leithwood and Montgomery. Instead, he provided administrative leadership geared to maintaining the smooth running of the school.

## B. The Context of the Computer Program

The behaviour of the principal in regard to the computer program seemed to have been a function of his perceptions of the particular situation of which he was a part. Forces that appeared to be relevant to his use of the specific cluster of dimensions of behaviour identified earlier, "effective" in the main, included:

### 1. Forces in the Situation

#### 1.a The school system

The school division usually took the lead in curriculum areas and set divisional priorities for curricula. The computer program was so new that the division had not yet initiated any structures or work in that area. Thus the computer program offered an unusual opportun-

ity for this principal and his three fellow principals to take a leadership role in the division in a new area.

While gaining familiarity with the new area, the principal "tested" the system in two ways. Through talking with the Superintendent, he received support to proceed in the direction of becoming more involved with computers. This direction was further reinforced when the request he put forward for funding over and above the regular budget to buy the first school computer was approved. Thus the principal perceived the school division as being supportive of the move to use computers at the elementary level, and proceeded to launch what became an extensive computer program in his school.

Working with three other principals was probably a significant part of the process for this individual. Blumberg and Greenfield (1982) wrote about the problems incurred by the school system structure, one of which was isolation from meaningful work relations with one's peers. These principals were able to develop meaningful work relationships that continued through the time of the study. The above authors also mentioned the costs to individuals stemming "primarily from their feelings of ... relative powerlessness to exert

influence beyond the boundaries of their schools" (page 234). Through their joint efforts, these principals were able to exert influence on the priorities and budget allocations of the division. The ability to exert this influence seemed to have been highly significant to the subject principal.

1.b Forces in the school

As a new unit, this school became one of a cluster of six elementary schools in the division. The school division had developed a reputation for having distinctive school buildings and also for some innovative program thrusts at the elementary level.

A principal charged with the responsibility for developing a new school from the ground up in such a division would be likely to experience some anxiety as to how he was going to measure up to the other schools in the division who had already made their mark in some distinctive manner. The subject principal, seeing no clear way of accomplishing any particular distinction in the regular program area, yet wanting his school to be a "leader", may have seen in the computer program a means of reaching that goal.

The principal seemed also to have chosen this route as one that would provide an opportunity to have

an impact on school norms which were difficult to influence in the regular school program. If one pays attention to the means employed to implement the program, one notices the use of a task force with a mix of skills and expertise working directly with the principal. This kind of group work involving the principal was not evident in any other part of the school program. One also notices that the approach involved the resource people going right into other teachers' classrooms and conducting lessons with the students in that classroom. Except for the itinerant teachers, this also was not happening in any other part of the program. The effect of this appraoch was to break the mold of the school norms in terms of how the principal and teachers related to each other, at least in the computer area, and it is possible that the effect of this kind of "unfreezing" from a set pattern could have a long-term influence on relationships in the school.

1.c Forces in the innovation

The nature of the computer program itself may have influenced the dimensions of behaviour used in the situation. One issue discussed in the relationship of the principal's dimensions of behaviour to this area was that of his use of a "typical" approach to

decision-making with the computer program. He seemed to feel that the decision process was not one that called for a participative approach. He would be likely to ask himself if the staff had the knowledge needed to make such a decision and, since he had spent considerable time and effort gaining the level of expertise he had developed, conclude that he was the only one who had sufficient knowledge in the computer area to make a decision.

The opportunity to have his school participate in the computer program pilot project initiated by the Department of Education was also attractive to the principal. The computer program offered an opportunity to influence a provincial-level initiative, and to have contact with consultants working at the provincial level and a range of principals and teachers from across the province. The project also helped to legitimize the computer thrust in the school.

A further point is that the computer program offered an opportunity to engage in an innovative program without involving change of the order likely to disrupt the school. The change was additive. It did not displace any other program, nor did it disturb the basic elements of the system. Because it did not appear to threaten disruption of the norms of the

school, the principal could more easily "sell" it to staff than a change that would require a restructuring of some aspect of the school as a system.

The nature of the change was also manageable in size, and the kinds of demands made on the principal's competence were ones he felt reasonably sure he could meet. The principal's perception of the risk involved in taking on the change was thus lessened in two ways: by reducing the stakes involved in change by attempting an additive, manageable innovation; and by reducing his uncertainty by focussing on an area in which the expertise was relatively delimited and in which he felt he had more expertise than anyone else on staff.

Thus various factors connected with the nature of the innovation itself apparently influenced the principal's dimensions of behaviour.

2. Forces in the Staff

The degree of confidence a principal has in his staff influences his perception of the likelihood of an innovation's success. The subject principal viewed the staff as highly professional and effective, and, it would seem, expected that they were capable of and would take on the challenge of the new program.

In spite of the fact that the school staff had worked

together as a group for less than a year and a half at the time implementation began, they had quickly settled into their individual routines. The transition from other schools into this unit seemed to have occurred smoothly, due partly to the fact that the school was in the same division in which they had all worked for many years, and that many of them knew the principal and other staff members from other situations.

The problem involved in settling into individual routines was that the staff norms were such that they tended to exclude the principal from the real work of the school, that is, the educational program. He perceived both the teachers and the vice-principal as possessing higher-level curriculum knowledge and instructional expertise than he did. Blumberg and Greenfield (1982) posit that principals who would lead have an interpersonal need system built around needs for inclusion and control (page 248). Faced with a situation of exclusion, the principal may have seized upon the computer program as a means of working in an area that, since it was one in which teachers lacked expertise, he could control. Since he was the specialist in the area, he felt justified in making the implementation decision without reference to staff. As well, his expertise allowed him to organize the implementation in such a way that he was included as an acknowledged leader in that aspect of the day-to-day work with teachers.

A force in the staff with which the principal had to contend in the computer program was that staff had learned to expect to share in decision making. The principal took a measure of risk in making the initial decision and some of the later decisions such as those regarding resources on his own. Most of the staff, however, expressed little resentment at his actions in this regard. One person expressed the general feeling this way:

> If you have enough opportunity to make an impact on decision making at other times, then you don't really mind one or two coming from above.

The resentment people might have felt because of the principal's setting a mandate did not materialize. Tannenbaum and Schmidt (1977, page 358) suggest that:

> the restrictive effect [of such an action] will be greatly modified by the general feeling of confidence which subordinates have in the boss. Where they have learned to respect and trust him, he is free to vary his behaviour. He will feel certain that he will not be perceived as an authoritarian boss on those occasions when he makes decisions by himself. ... In a climate of mutual confidence and respect, people tend to feel less threatened by deviations from normal practice.

The situation under study tends to confirm that observation.

Several forces in the staff, then, can be posited as influencing the principal's dimensions of behaviour in regard to the computer program: the confidence he felt in them as professionals, the need he had to be included in the

educational program, and his sense of having enough of the confidence of staff that he could feel free to vary his decision making approach.

3. Forces in the Principal

Several of the forces described in the above sections made reference to ways in which the situation interacted with forces in the principal, and will not be repeated here. These include leadership through expertise, the interpersonal need for inclusion, and the need to have an impact on a broader level than that of the school.

Several other forces in the principal bear mention at this point. The principal proved to be an able strategist in the computer program, not only in the school but at the divisional level as well. The opportunity to give full sway to a personal attribute, that is, his ability to influence the course of events by identifying and implementing effective ways of achieving his ends often by ingenious and resourceful means, was in all likelihood gratifying to him and may have fulfilled needs for a sense of power and control in the situation.

In a similar vein, the principal varied his usual style by taking a highly task-oriented approach with the computer program, described by the teachers as "pushing" the program. This was in contradistinction to his usual human-relations

style exhibited in virtually every other area of the school program. An interesting insight into this aspect of the principal's behaviour was provided by one teacher who had taught for three years in the school where this principal had been the administrator just previous to coming to this school. He commented:

> when he first went into administration he was very, very task-oriented. And he has come around from that into being a personal friend to a lot of people. And knowing what people's hurts are, their personal involvements, and being empathetic to them, and indicating on a personal basis that he knows you're not just a number, a person in the classroom.

It would seem that factors in the principal's experience as an administrator caused him to change his usual mode of operation from the "task oriented" extreme to one tending toward the "human relations" end of the continuum. He reverted to task-oriented behaviour in this situation, a dimension identified by Leithwood and Montgomery (1982) as characteristic of "effective" principals and which "does not proclude good interpersonal relationships between principal and staff" (page 321). It appeared that the principal decided to use a dimension of behaviour with which he felt comfortable in this situation, although probably not to the extent the teacher described him as previously using it since he was able to maintain good relationships with his

staff throughout the implementation period. This is another instance of him having enough confidence in the situation to allow him to vary his behaviour. It proved to be highly effective to achieving the goal of seeing computers implemented. He was able to "make things happen" (Blumberg and Greenfield, page 246) through an opportunity he perceived and upon which he created his school's computer program.

Summary

In regard to the computer program, examination of the forces impinging upon the principal ranging from those in the wider school system to those within the person of the principal suggest that those forces comprised a complex dynamic which influenced him toward a largely "effective" set of dimensions of behaviour. The principal was able to conceptualize and state clear goals for this program. The factors and strategies he employed were geared to the development of a program that achieved the goals he had established. The use of these dimensions allowed the principal to develop new ways of working within the existing organization which impacted upon the entire complex of structure, norms, and working relationships both within the school and at the school division level. While the school continued to operate the regular program as usual, the study indicated that the dimensions of principal behaviour influenced the

status quo so that there was some degree of shift in certain of the school norms and ways of operating in the direction posited as effective for schools in the literature. Thus, through the use of largely "effective" dimensions of behaviour, the principal provided educational leadership for implementing the computer program as distinct from the administrative leadership used for the regular school program.

## D. Synthesis of the Major Findings

In the foregoing chapters, critical empirical findings relating to the subject principal's use of the dimensions of behaviour outlined in the instrument derived from the Leithwood and Montgomery model were analyzed and synthesized. The most significant finding derived from the study was that the principal's dimensions of behaviour when examined across the full range of his work in the school did not conform to the model. Instead, his approach represented the use of different configurations of the dimensions of behaviour depending upon the program area to which he was relating. The variations in perspective he held appeared to be the major factor relating to the differences in his approaches to the two areas studied. This suggests that people approach the discrete demands of the principalship in different ways, depending on their perception of the forces

in themselves, their staffs, and their schools and school sytems, and that models of the principalship need to accommodate different approaches to different areas of their work.

The picture that emerged from the analysis of the dimensions of behaviour used in regard to the regular school program was that of a principal using a largely "typical" mode. The principal's perception of the forces relating to the major program area tended to constrain him to operate mainly as an administrative leader whose chief concern was the smooth operation of the school, with little concern with or influence upon the regular program.

A totally different picture of the principal emerged when his dimensions of behaviour in regard to the computer program were analyzed. Linked to an implementation which was rated as successful was a configuration of dimensions of behaviour that were largely "effective" in quality. The principal's perception of the forces related to the new program appeared to impact on the principal so that he felt free to vary his approach from his usual mode of operating. The result was that in this area he operated as an educational leader. He not only changed his own working relationship with staff members but mobilized the staff to work in new ways with each other. He was able to demonstrate his ability to put together all the diverse pieces

needed to accomplish particular objectives related to the goal of implementing computers in the school.

## E. Implications of the Study for the Revised Leithwood and Montgomery Model of the Dimensions of Principal Behaviour

This study has highlighted several findings which have implications for the revised Leithwood and Montgomery model (1982) of the dimensions of principal behaviour used in this study.

One major finding, the discovery that the dimensions of behaviour of the subject principal were bi-modal in nature, indicated that the model may be insufficient to accommodate the actual reality of the complexity of the principal role. It suggests that the model needs to be extended in a manner which would accommodate the eventuality of different dimensions of behaviour being used by the same principal depending upon his perception of contextual issues. A contingency model linked to the dimensions of behaviour would thus be likely to be a useful extension.

A second major finding was that, although the principal used a "typical" dimension of behaviour in regard to decision making for the computer program, its use resulted in a successful implementation. It is possible that this dimension of behaviour needs to be re-examined in light of the situation in which innovation is being attempted.

Innovation is a class of activities which requries commitment from the principal who wishes to lead it, and a less participative decision-making mode may be appropriate in certain circumstances such as the ones described in the study.

A third finding was that the use of the set of "effective" dimensions of behaviour of which the revised model consists, with the exception of the decision-making dimension mentioned above and a non-applicable one having to do with teacher selection, resulted in a successful level of implementation. This finding offers confirmation of the dimensions of behaviour (with the one exception) posited by the revised Leithwood and Montgomery model used in this study as being "effective" for the process of program improvement at the elementary school level.

This finding also suggests that "effective" dimensions of behaviour tend to interact and build upon one another when used consistently across the range of appropriate dimensions. An example is the manner in which a clear goal structure influences factors and strategies at all levels. "Effective" dimensions used together probably have a cumulative effect that is much greater than when isolated dimensions of the same quality are used.

A fourth finding was that there were two points in the study at which it was not easy to rate the principal's

dimensions of behaviour on a two-point scale, even though the dimensions were clear-cut in most areas. If principals were partially using several of the effective dimensions, the process of rating them would be difficult. It would be useful to consider an operational continuum ranging from "typical" at one extreme to "effective" at the other, with descriptors provided at points along the continuum to indicate the level of operation on the dimension and, in longitudinal studies, movement from one level to another. Such a continuum might also prove useful for self-rating to help principals assess where they stand on the dimensions of behaviour and where improvement might be needed.

Finally, the limitations of the model should be recognized. Blumberg and Greenfield's study (1982) indicates the highly idiosyncratic nature of principals' approaches when they are operating at high levels of effectiveness. Their study showed a range of approaches which, while they were different in the extreme, were all effective. It may be unrealistic to expect any model or theory to fully explain behaviours ranging across all levels of an area as complex as school leadership due to the possibility that highly-effective leadership may differ qualitatively from leadership operating at a lower level and may require a totally different model.

# CHAPTER VII

## SUMMARY, IMPLICATIONS, RECOMMENDATIONS AND CONCLUSIONS

This chapter contains a review of the thesis. The observations are summarized and the analyses reviewed briefly to highlight the major findings of the research. A discussion of the implications of the findings for the version of the Leithwood and Montgomery model used in this study and for the practice of the principalship in the elementary school is the focus of the second part of the chapter. The third part is devoted to recommendations for training programs for principals and for further research. Finally, conclusions drawn from the study are stated.

### Summary

The main purpose of this study was to generate information leading to further development of the modified Leithwood and Montgomery model used in this study to represent the dimensions of principal behaviour that are critical to the process of implementing new curricula in an elementary school. The revised model was used as the conceptual base for the study with the objective of ascertaining the accuracy of extrapolated elements for the

situation investigated, and whether any of the elements investigated needed to be refocused or extended for the process of curriculum implementation or principal practice.

In order to achieve the purpose of the study a phenomenological approach was taken. This approach was decided upon because in the researcher's opinion its value lay in its ability to provide holistic data on a wide range of dimensions of behaviour, interrelationships, perceptions and attitudes existing both during the time frame of the study and retrospectively, and to bring the data to bear on the problem of the study.

A variety of methods was used to collect the data during the investigation. Interviews with the principal, vice-principal and the fifteen teachers who consented to participate, along with documentary data, were used to collect evidence about past events. Interviews with the same individuals, along with observation conducted in the school over a period of eleven days, provided information about events current in the school at the time of the study. Structured observation in each participating teacher's classroom followed by Levels of Use interviews were used to provide information on the status of the implementation of the curriculum program at the time of the study.

The data collected was voluminous. It was analyzed

first to provide a picture of the process and level of implementation of the curriculum area under study. At that point analysis was employed to examine the dimensions of principal behaviour. The data indicated that the dimensions varied depending upon the program area to which the principal was relating. Because the phenomenological approach allows for such eventualities, the analysis then proceeded along the lines indicated by the data. A profile of the principal's dimensions of behaviour in the two program areas, the regular school program and the computer program, emerged.

## Review of Major Findings

### The Level of Implementation of the Computer Program

Investigation to discern the level of implementation achieved in the computer program was important in order to establish a baseline upon which to judge the effectiveness of the principal's dimensions of behaviour relative to the implementation. Had the implementation been unsuccessful, the principal's dimensions of behaviour could not have been judged effective no matter how closely they might have conformed to the revised Leithwood and Montgomery model used in this study because the purpose to which they were geared would not have been achieved.

The findings regarding the innovation depicted varying levels of implementation on the part of teachers ranging from a low of non-use to an unexpectedly high level for a significant portion of the staff. The results conformed to expectations with the exception of the high users who were well above average. This configuration, when considered in conjunction with the fact that virtually every classroom in the school was observed to be utilizing computers even when the classroom teacher was not directly involved, indicated that the implementation of the computer program had been successfully accomplished. In light of the failure of many educational innovations to become established at the school level, this finding is significant.

The phenomenological approach to studying the implementation underscored the dynamic nature of the implementation process. Clearly the implementation was not a product or goal alone, but a process that had to be initiated, developed, and monitored. The role of the principal in the process was crucial. He unambiguously mandated the innovation, a significant starting point. He developed his expertise to a high level, and used the authority of his expertise to lead the school in the direction he wanted it to go. He then mobilized staff, resources, parents, and the precious commodity of time to bring about the implementation. His assertive leadership in this area was undoubt-

edly the critical force that brought about the implementation of the computer program.

Several findings relating to the process of implementation as it occurred in the subject school should be noted:

i) the source of the innovation was a need perceived by the school principal. It was not a need that had been identified by the staff.

ii) the principal initiated the innovation and took on the role of a change agent during the period of the implementation. He was actively involved in all aspects of the innovation.

iii) The change process was not linear but involved components which interacted dynamically over time. The implementation was open to consider and in turn incorporate needs that might arise through classroom use. Teacher knowledge and skills, as one example, were not developed at only one point in time but interactively as the implementation required their development.

iv) There was an element of adaptation of the program by the school, that is, the program was not implemented exactly as set out in the curriculum guide. Emphasis in the school was on the use of computers, with a corresponding de-emphasis on the historical background of computers and on their use in society.

v) The factors affecting implementation tended to reinforce each other as a related system. Because the school had acquired a large amount of computer equipment, for example, teachers felt some obligation to utilize it with their students. Involvement of the resource people through working within other teachers' classrooms impacted not only on the professional development of teachers but on student learning related to computers and on the norms of how teachers related to each other in the school.

vi) Implementation was an organizational process with all that that entails both within the school and in relation to external elements. The norms of the school were affected, for example, as were the school division's curriculum priorities and budget allocations.

The implementation of the computer program, then, proved to be a complex, multi-dimensional effort which had a definite influence on the principal's role, staff and student interaction, and the norms of both the school and the school division.

## Dimensions of Behaviour of the Principal

The major finding in relation to the dimensions of

behaviour of the subject principal was that they did not conform to the assumption implicit in the original model that principals apply dimensions of behaviour consistently across all the areas in which they work. The configuration of the dimensions was bi-modal, that is, they differed in quality depending upon the program area to which they related.

For the regular school program, the dimensions of principal behaviour were largely "typical" as rated by means of definitions drawn from the Leithwood and Montgomery model using the methods described in the study. The principal did not attempt to influence the school-wide approach to instruction through a clear goal structure. This hampered his ability to influence factors operating on the school-wide experience of students, and in turn the strategies used to influence the factors under study. It was concluded that in the regular program his leadership was mainly administrative, geared not to program improvement but to maintaining the smooth operation of the school.

In regard to the computer program, a strikingly different picture of the dimensions of behaviour of the principal emerged. He was rated "effective" for every dimension except that of decision-making and a non-applicable one having to do with teacher selection. For this program area,

the principal evidenced a clear goal structure and an approach to both factors and strategies that was compatible with the goals established for the program. The evidence of the effectiveness of the use of these dimensions of behaviour was the success of the implementation.

The one "typical" dimension of behaviour used by the principal, that of decision-making, called into question the accuracy of the original model on this point. The model implied a consultative approach to decision making. While the subject principal tended to use a consultative approach in most areas of school decision making, when it came to taking the decision to implement and decisions regarding the acquisition of equipment and materials, he did not consult with the staff but made these decisions himself. The finding in regard to decision making, when examined in light of the success of the innovation, suggests that there may be instances in which the use of a directive approach to decision making by a principal who wishes to lead an innovation and who has the prerequisite expertise may be an appropriate strategy.

On the basis of the largely "effective" ratings for the principal's dimensions of behaviour and the success of the implementation, it was concluded that in terms of the computer program the principal provided educational leadership geared to program improvement.

Because of the program-dependent nature of the configurations of "typical" and "effective" dimensions of principal behaviour, it was decided that it was necessary to examine each program from a contingency point of view. Tannenbaum and Schmidt's model (1958) was used to investigate the forces in each program area that might have influenced the principal's use of contrasting dimensions of behaviour. It was posited that forces impinging upon the regular school program, including organizational structures, teacher competencies and norms, the nature of school curricula, and the principal's level of expertise influenced the principal to use a largely "typical" set of dimensions of behaviours. On the other hand, forces impinging on the computer program, including the perceived opportunity to influence organizational and structural norms because of the novelty of the computer programs, and the high level of expertise developed by the principal, influenced the principal to vary his usual leadership style by using a largely "effective" set of dimensions of behaviour. The contingency point of view as applied appeared to fit the situation well and to offer an appropriate explanation for the use of a different set of dimensions of behaviour for the two program areas.

At this point, it is useful to review the appropriateness of the design used in the study, and to speculate about how it could be improved upon for future studies.

The researcher concluded that the phenomenological paradigm was appropriate and useful for this study for a number of reasons:

i) It respected the essential nature of the phenomenon being investigated by providing information on the entire range of the dimensions of the principal's behaviour. A narrower approach might not have uncovered the discrepancy between the dimensions applied to the regular school program and those applied to the computer program. This finding in turn has important implications for the conceptual model by providing a novel insight into the nature of the dimensions of principal behaviour that was not present in the original model.

ii) The design permitted the flexibility necessary for the researcher to follow up and further investigate the sources of variation in the principal's dimensions of behaviour that emerged during the course of the study. This investigation yielded further insights related to the stated aims of the study.

iii) It proved useful in studying the Levels of Use of teachers in regard to the computer curriculum. Observation in classrooms and in the school in general were useful adjuncts to the Levels of Use

interviews, and gave a fuller view than would otherwise have been obtained. For example, general observation provided the information that all the classrooms provided for student use of the computer even if the classroom teacher was not involved with computers. This finding would not have been likely to emerge from the Levels of Use interviews alone.

The use of this paradigm is therefore recommended to those who might want to replicate this study, with one codicil. The researcher based the data-gathering approach upon the existing literature setting out ethnographic methodology, which advocates a broad view. One source states that the purpose of ethnographic research is the search for "patterns that relate ideas to each other, to people, and to material objects, people to people, groups to groups, and jobs and tools to all these" (Dobbert, 1984, page 39). Even in a focused study such as this one, Dobbert (page 52) points out that:

> questions [need to be] designed to broaden the original concern and enable the ethnographer to be certain that a narrow focus has not blocked out material necessary for a creative understanding of the issue.

In attempting to ensure that a broad enough view was taken to allow for a creative understanding to emerge, the researcher found that the data gathered was more voluminous than was needed to fulfill the purposes of the study. A

tighter focus would have been more practical. Some of the questions included in the interview schedules, for example, proved to be redundant since the same information could have been taken from other responses. Some straightforward data, such as the content of and process used in staff meetings and the principal's role in providing inservice and materials, could have been gathered from a sample of the respondent group rather than from all respondents. More use of a branching format to route respondents around topic areas not relevant to the particular school situation could also have streamlined some areas of data-gathering. An example is the series of questions on goals. An initial screening question asking whether school goals existed could have been posed, with a negative response resulting in a detour around questions appropriate only for a positive response to the initial question. Such techniques could have resulted in less onerous data collection and subsequent analysis without substantially reducing the validity of the findings.

## Implications

### Implications for the Revised Leithwood and Montgomery Model

The findings derived from this investigation tend to confirm the essential usefulness of the grounded dimensions

or categories of principal behaviour examined by means of the revised Leithwood and Montgomery model used in this study. The ready application of the categories by means of the phenomenological approach used in this study offers confirmation that those categories were appropriate and meaningful to the principal's work in an actual school setting.

The finding that the principal's use of a largely "effective" configuration of dimensions of behaviour resulted in a successful level of implementation (with the exception of the decision making dimension, discussed below, and the teacher selection dimension determined to be inapplicable in this instance) provided confirmation that the cluster of "effective" dimensions included in the instrument derived from the Leithwood and Montgomery model were appropriate for the process of implementing an innovation intended to bring about program improvement at the elementary level. The findings further indicated that "effective" dimensions when used together have a cumulative effect that may not be evident when isolated dimensions are used. The dimension of "goals", as one example, influences all of the "factors" and "strategies" because the goals incorporate both the factors principals attempt to influence and the procedures they use to identify, gain support for, and communicate them to others. With the exceptions noted above, the revised model

proved to be applicable to the implementation process studied and had explanatory value in regard to the success of the implementation.

The decision making dimension of the principal's behaviour in regard to the computer program was the one element that was not congruent with the descriptions of "effective" and "typical" dimensions derived from Leithwood and Montgomery. The 1982 research suggested that it is likely that effective principals use a participatory approach to decision-making. This research suggests that two modes may be applicable. Evidence from research supports the view that the directive decision-making approach to innovation may be equally applicable. Thomas (1978, page 138) stated that "directive and facilitative principals were equally effective in implementing the alternative programs they set out to." Hall, Hord, and Griffin (1980), who monitored implementation of a revised science program, noted that in schools in which better levels of implementation were observed, principals "set policy within the school that clearly indicated that science would be taught" (page 31). Fullan (1982) suggested that directive leaders can be effective if they are clear about the purpose of change and can select or develop teachers who agree with the direction. It may be, then, that either the directive or participative approach to decision making may be effec-

tive depending upon the nature and the circumstances of the innovation. Further research to confirm the possible effectiveness of the two modes is required.

The Leithwood and Montgomery (1982) model, in its attempt to describe the dimensions of behaviour of principals, implied that a principal would tend to use a particular dimension of behaviour across the broad range of situations to which that dimension would apply in the school. The holistic approach used in this study generated data which were not congruent with that implication in that the principal's dimensions of behaviour were bi-modal: they were largely "typical" for the regular school program and "effective" for the computer program, and thus not consistent across both areas. This research suggests, then, that the model may need to allow for the possibility that the principal might apply dimensions differentially. Depending upon the findings of further research, a contingency model might be a useful extension to the model if it is intended to be utilized as a means of identifying and categorizing the dimensions of behaviour used by principals in practice. A cautionary note, however, is appropriate at this point. This study does not present sufficient evidence on which to conclude that principals commonly change their dimensions of behaviour during an implementation process. The situation examined in the study may be atypical and may not recur in future studies.

A further useful extension would be the development of a continuum for each dimension of behaviour ranging from "typical" at one end to "effective" at the other, with descriptors provided at points along the continuum to indicate the operational level and development along the continuum. Structuring the dimensions of behaviour in such a way might prove useful both for principal self-assessment and for longitudinal or developmental studies linked to a training program.

Finally, the issue of the methodological approach used to apply the model to the study of the principalship should be given consideration. Because principals use distinctive approaches to the demands and problems of the principalship, because these demands and problems vary from situation to situation, and because the dimensions of behaviour principals use interact in a dynamic manner, this research suggests that gaining a significant understanding of principals' dimensions of behaviour in practice demands an approach that is largely phenomenological in nature.

## Implications for the Practice of the Principalship in the Elementary School

Several noteworthy points regarding the range of

elements influencing the effectiveness of the elementary school principal emerged during the course of this study.

The school division structure may place constraints upon principals' attempts to develop the school organization beyond the minimum level of functioning if principals are judged mainly by how smoothly they keep the school running rather than by how well they influence others to improve the school program. Focusing upon improving the program means bringing about real change that represents "a serious personal and collective experience characterized by ambivalence and uncertainty" (Fullan, 1982, page 26) for those involved. It may involve changes in norms, roles, and ways of relating to others both within and outside of the school. Part of the process may involve dealing with a multitude of problems that may arise from all of the factors involved in change. Change, then, can mean a period when the school is not running smoothly. If the principal who undertakes changes in organizational structures and operating procedures with all that is involved also faces being penalized for his actions by the school division structure, it is not surprising that the majority of principals choose the path of least resistance and continue to focus on a smoothrunning school. The system needs to take cognizance of the dilemma principals face and to build in structures

and supports to assist principals to undertake change directed toward program improvement.

At the school level, there are functional requirements that the principal who wishes to be effective must face. The immediacy of the demands the school makes upon him means that he can spend his time continually reacting to human problems and to routine paper and pencil administrative tasks. Leithwood and Montgomery's study indicated that one characteristic that most clearly seems to separate "effective" principals from "typical" ones is their proactive stance. These principals took the position that their priority was that of being an educational leader and not simply a support to teachers. Their job was to make an impact on the school program and to take a personal role in improving teaching and learning. When the subject principal took this stance in regard to the computer program, he was able to have a significant impact not only on the implementation itself but on the school norms involved in program improvement. This indicates that the research is essentially valid: the principal who uses a proactive approach can indeed have a significant influence. If principal leadership is to be effective, people assuming the responsibilities of the principalship must possess the ability to influence the school through such a proactive approach to the issues and challenges involved.

Being an educational leader implies spending time on curricular matters. Keeping up with curriculum is an essential task for principals. Knowledge of the total school curriculum leads to an improved understanding of the school's responsibilities to students and provides for a working base for involving principals with teachers in the area that the school is all about. Teachers need the feedback principals can provide to help them improve their professional competence. Schools need a linkage across grades in order to provide an accumulation of effects upon students. These areas can be provided for only if principals perceive them as important for the school and provide the leadership to develop the structures that bring them about.

Principals need knowledge, skills and practice in influencing the school to improve. A good understanding of how change can be accomplished and of ways of influencing and involving people in change, utilizing their skills and expertise, and mobilizing their energies is needed. The specific organizational patterns used to accomplish change will vary with the characteristics of principals, staff members, school divisions, communities, and problem situations, which implies that principals must possess sufficient educational, organizational, and interpersonal knowledge and ability to deal with the complexities involved in working toward school improvement.

Perhaps the most urgent requirement for principals is a reflective stance on their own work as school leaders. Identification and a clear understanding of one's philosophy of education as a guide to action, of assumptions regarding the principal's role, of one's use of dimensions of behaviour, of one's views of teachers, students, community and the larger school system is a base from which to examine one's effectivenss. Principals can use the insights gained to develop a personal program of self-development to close the gap between their actual performance and their beliefs about what their role as school leaders should be.

## Recommendations

### Recommendations for Principal Training

A clear implication of the research reported in this study is that training programs for principals should be focused upon raising principals' levels of effectiveness in regard to the practice of educational leadership in elementary schools. University programs should provide principals and those aspiring to the principalship with the theoretical and empirical knowledges of the complexities of educational leadership and the skills with which to provide it. Specific attention needs to be given to the area of program improvement and the change process.

School divisions have a major responsibility to provide systematic efforts to develop the knowledge and skills of principal practice. They need to ensure that programs geared to curriculum knowledge and program improvement are provided, as well as programs to meet the individual professional development needs of principals. Principals also need an opportunity to meet with their peers for the purpose of deliberate reflection on the processes they use to deal with the requirements and concerns of their school situations, to find out how other principals deal with their situations, and to evaluate alternate courses of action. This approach offers not only a learning process geared to the actual school situation but also addresses the issue of principals' relative isolation. It encourages the formation of a network which would allow principals to draw upon each other's talents, and to develop both formal and informal approaches to learning on an ongoing basis.

School divisions also need to find ways of encouraging principals to undertake systematic program improvement at the elementary school level. Not only should school divisions not penalize principals for undertaking the organizational and curricular changes involved in such efforts, but they need to find ways of recognizing, rewarding, and building upon them.

## Recommendations for Further Research

The research reported in this study highlights the need for further research focussing on additional confirmation of the dimensions of behaviour set out in the modified Leithwood and Montgomery model used in this study and on the suggestions for refocussing and expanding the model.

While this study offered confirmation that the dimensions of behaviour included in the model used in this study made sense in one particular school environment, further research to examine the general applications of the complete set of dimensions across a variety of settings is required. The principal's dimensions and their relationship to elements in the elementary school may vary in important ways in different school settings, in schools with different levels of teacher experience, and at different stages of the principal's career. For example, are there differences in principals' dimensions of behaviour in rural as compared to urban areas? What dimensions have meaning across all situations?

Research is also needed to confirm the hypothesis that the "effective" dimensions identified do in fact have an impact on curriculum implementation in the elementary school. Contrasting typical and effective principals along the dimensions using a set of rigourously validated

instruments measuring organizational and administrative effectiveness would be an appropriate next step. The differences between principals' operational styles and the consequences for school outcomes need to be more completely understood.

Another aspect of the modified model that calls for further research is that of whether principals' dimensions of behaviour are consistent across the areas of their work. The anomaly that emerged in this study, that is, the bi-modal nature of the subject principal's dimensions of behaviour, calls into question the basic assumption that principals behave consistently in all the areas they administer. This finding calls for large-scale studies of principals to confirm or refute this finding. If the finding is confirmed, further investigation of the contingency factors that influence the use of the configurations of "typical" and "effective" behaviours on the part of principals will be required.

The case study approach used in this research generated grounded data that proved to be valuable in producing insights about the dimensions of principal behaviour studied. There is a need for more in-depth case studies of individual principals to yield further insights about the conceptual model upon which this study was based and its meaning for the effectiveness of principals. The avail-

ability of such data can provide researchers with a basis for developing additional aspects of theory and further researchable questions to clarify the practice of the principalship.

## Conclusions

The principalship has been the focus of a great deal of study and commentary in recent years. What is "effective" principalship? Only years of systematic research can provide a comprehensive answer to that question, if it can be answered.

As described by the subject principal, the school principalship is challenging and rewarding. In spite of the considerable demands made upon the principal, he was able to successfully undertake curriculum implementation in the school. A key factor in its success appeared to be the principal's utilization of "effective" dimensions of behaviour as defined by the modified Leithwood and Montgomery model used in this research.

Emergent in the study was the principal's tendency to use "typical" dimensions of behaviour in regard to the regular school program. He did not seem to perceive the importance of his involvement in the school program in general. This stance hindered the school as an organization

from focusing upon program improvement. The study highlights the importance of educating principals to realize the opportunities for change inherent in the principalship so that they can make a much-needed contribution to improving the elementary school program.

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# Appendix A

## DIMENSIONS OF BEHAVIOUR OF THE ELEMENTARY SCHOOL PRINCIPAL

## Dimensions of Behaviour of the Elementary School Principal

The dimensions of behaviour of principals applicable to this study (Leithwood and Montgomery, 1982) are as follows:

1. Goals

1.1 Effective principals placed the achievement and well-being of students first in their priorities. They viewed themselves as educational leaders whose function was to see that students in their school were provided with the best program possible.

Typical principals placed a smooth-running organization first in priority, with emphasis on keeping activities in the school manageable.

1.2 Effective principals were exceptionally clear about their own short- and long-term goals for students, and these goals usually focussed on the "basics". They tended to engage teachers in goal or priority setting for students.

Typical principals were distant from curriculum or instructional decisions, and did not engage staff in goal or priority setting for students. When goals and priorities were established, they were not clearly and concretely articulated.

1.3 Effective principals' orientation towards teachers centred on improving the school program, a "task" rather than a "human relations" orientation. They established norms for risk-taking among staff. High expectations for teachers as well as students and themselves were articulated.

Typical principals stressed harmonious personal relationships with teachers, a "human relations" orientation. They sometimes encouraged initiative and experimentation among teachers, but themselves initiated few changes in the school program.

1.4 Effective principals actively sought parental support for program improvement. They oriented the school program to sets of goals widely endorsed by the community. They attempted to establish close contact with parents through meetings, conferences, and by building parent-teacher groups with the purpose of gaining community support for school goals and priorities.

In the case of typical principals, goals and priorities were not uniformly communicated to or supported by the community. Communications tended to focus on school activities (fund-raising efforts and field trips are examples). Principals and staffs

tended to be relatively distant from the community. There was an attempt to keep the decision-making power of the parent to a minimum.

2. Factors

Both effective and typical principals attempted to influence the same set of school factors. These factors are defined as "phenomena potentially affecting the experiences of students, both those operating on the students' classroom experience and those operating on the school-wide experience of students" (Leithwood and Montgomery, 1982, page 322). On certain factors, effective principals were distinguished from typical principals by what it was about each factor that they believed to be important to influence:

2.1 Effective principals were reported to be directly involved with careful teacher selection and assignment.

Typical principals left to teachers the decision about which teachers teach which students.

2.2 Effective principals established clear priorities and emphases among the objectives teachers work towards with students to serve as a focus for instruction.

Typical principals devoted little time to

establishing priorities and emphases among objectives, permitted school objectives to be vague, and tended to become involved in school goals only in response to teachers' curriculum plans in order to modify them.

2.3 Instructional strategies received concerted attention from effective principals. They were actively concerned about influencing several aspects: the relationship between such strategies and resource materials; establishing, and maintaining priority instructional behaviours over long periods of time; the amount of class time devoted to instruction; and instructional orientation (that is, an "elementary" orientation toward instruction).

Typical principals tended to ignore the instructional strategies of teachers, as well as the learning activities provided for students. Teachers were "left alone to teach" because of the principals' faith in their professional competence. Standard teaching practices were generally encouraged.

2.4 Effective principals used a relatively precise focus on curriculum goals for integration among program objectives within and across programs and grades and as a criterion in making time allocation decisions. They

attempted to influence coordination among teachers of choices of goals and methods so that there would be an accumulation of effects upon students through the grades.

Typical principals, possibly because of their ambiguous and diffuse approach to goals, occasionally attempted to influence coordination of efforts among staff groups planning curriculum but lacked the precise focus for integration across objectives, programs, grades, and methods.

2.5 Effective principals looked to sources outside their own established budgets and procedures for support for their program improvement efforts. These sources included government agencies, external project funds, or special financial arrangements wtih their own school boards.

The typical principal looked to established budgets and procedures as a source of money to support new programs.

2.6 Effective principals tended to place school goals ahead of district priorities.

Typical principals placed expressed district priorities ahead of school goals.

3. Strategies

Strategies are defined as the actions a principal engaged in to influence factors associated with the experience of students both in class and out of class.

3.1 Effective principals dispersed decision making power and delegated authority, but within a central framework they had developed, or with which they were in agreement. They tended to take responsibility for an innovative thrust in the early stages, chose influential staff to participate in innovative projects, and turned it over to selected staff only when the project was running smoothly. Thus, while ensuring that the principal's priorities were carried out, some staff participation took place.

Typical principals did not encourage staff participation in decision making. They chose uninfluential staff to participate in innovative thrusts. They tended to leave innovative projects to teacher initiatives.

3.2 Effective principals valued staff involvement in decision making, searched out staff advice on important areas, and continuously referred to staff in areas

where they had expertise. They treated the teacher as an equal in the process of decision making. Frequent and regular staff meetings were the rule, and such principals often developed a team approach among teachers as a strategy to support an innovation.

Typical principals, if and when they did request teacher participation, frequently did so too late for it to be useful, and tended not to treat the teacher as an equal partner. Staff meetings were held infrequently.

3.3 Effective principals frequently played a direct part in implementing change through such strategies as developing personal expertise in the innovatory area, involving themselves directly in start-up activities, and attending inservice sessions provided for teachers. More indirectly, they chose team leaders, helped develop teams of teachers, or attended planning meetings.

Typical principals were reported to have limited or no participation in teacher inservice related to new programs. They may encourage teachers to stay out of their way and not cause problems through new program demands.

3.4 Effective principals encouraged staff to set and ex-

press their own goals for growth and professional competence. They provided a focus by giving high priority to teachers' curriculum planning, and encouraged teachers to spend large proportions of their time in instruction. They supported risk-taking, initiative, and continuous change on the part of teachers. They made themselves available to discuss teacher problems. They worked directly with teachers to solve classroom problems that may have arisen in the process of implementing new programs.

Typical principals tended not to express endorsement of teacher practices. Their style of interaction was more formal and authoritarian than that of effective principals, and tended to discourage risk-taking. Rather than directly confronting problems with teachers, they often withdrew their support or simply tolerated the problems.

3.5 Effective principals made specific arrangements for developing the knowledge and skills of their teachers in the area of program improvement, either directly by working with teachers in groups or individually, or less directly by providing time and opportunity for inservice, for meeting with consultants, for school intervisitation, or for becoming familiar with equip-

ment, resources, or materials. In rare cases, they were capable of and undertook to conduct inservice training themselves for staff.

Typical principals, acting primarily as school administrators, provided minimal inservice and were involved only in making the mechanical arrangements for such inservice. They tended to take little direct responsibility for developing the knowledge and skills of their teachers in a new area, leaving such responsibility to teachers and behaving in a reactive manner to teacher requests for such development.

3.6 Effective principals gathered information about a wide array of elements beyond that connected with immediate problems, including monitoring and followup of student progress, evaluation and feedback on the classroom performance and instructional activities of teachers, new practices in education, the work-world demands students were likely to face, and the wider school system.

The information gathered by typical principals focussed on immediate problems likely to disrupt the school and on the implementation of district policy decisions. They engaged in little evaluation of teachers' instruction, and that information tended not to be shared with the teacher.

3.7 Effective principals saw it as a priority to provide teachers with needed resources and instructional materials. This included searching out new materials and methods for use within the school.

Typical principals were less active in this regard, but they also attended to routine aspects of collecting resource material such as locating requested material. Their stance was reactive rather than proactive.

3.8 Effective principals facilitated within-school communication. They initiated the provision of information to staff. They focussed such information on school goals and priorities, and provided feedback about the staff's progress toward goals.

The typical principal's within-school communication lacked goal orientation. It tended to deal with individual professional matters or messages from the district office. Typical principals initiated little information themselves.

3.9 Effective principals were able strategists, capable of identifying and utilizing ways of achieving their goals within the school. They were proactive in their atti-

tude toward school directions and problem sources. They viewed "the system" as able to tolerate diversity in the principal's conduct and the school's programs if that was required to meet school goals.

Typical principals approached planning in abstract terms and were frequently unclear about what strategies to use. The immediate problem took precedence. They tended to behave reactively, responding primarily to district demands and the many other sources of problems encountered daily. They viewed "the system" as a prime determiner of their and their school's activities.

3.10 Effective principals were efficient at handling routine administrative tasks, thus freeing time for goal-related activities.

Typical principals used the bulk of their time to handle routine administrative tasks, leaving little time available for improvement efforts.

# Appendix B

## PRINCIPAL INTERVIEW GUIDE

April 23, 1985

# PRINCIPAL INTERVIEW

## Interview Format

In order to plan effectively for the implementation of new curricula in schools, it is important that we as educators understand this process from the principal's perspective.

I am examining the implementation of one new curriculum, that of the Computer Awareness Curriculum, with the purpose of increasing our understanding of the process.

The emphasis of my study is on your role, that is, the principal's role. I'm going to be asking you about various factors having to do with your work in the school. The reason for this is that research has linked a large number of such factors with implementation. So I'll be asking questions about factors that you may not perceive as being liked with implementation, but that may be in the research.

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NOTES

1. Leithwood and Montgomery's Profile of Growth in Principal Effectiveness (1983) was used as the basis for developing format and questions. However, the questions and manner of rating them were developed specifically for the purpose of this study.

2. Numbering is not sequential throughout this interview guide. The items in the questionnaire are numbered to correspond to the listing of behaviours in the "dimensions of principal behaviours" outline. It was decided that it was preferable to lead into the interview with questions on factors and strategies first instead of goals to allow for the building of rapport between the principal and interviewer before dealing with the potentially more sensitive goal-related questions.

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Without your openness and frankness I could not hope to do so. I hope it is understood that all responses (as well as all other data) will remain absolutely confidential and anonymous under any and all circumstances.

I look forward to sharing all resultant data from this study with you under the conditions noted above. I appreciate your help.

Interview Questions for Entry

Please give me a brief sketch of yourself, including information that as an interviewer I should know or would find useful about you. (When did you first come here? Why? What have your responsibilities been? What is currently the key issue for your own work in the school? What are your overall impressions of the school? What are its strengths? Weaknesses?)

Part I

Let's begin by talking about factors that make up the organization of your school. This school has, of course, its own unique organization of classes, teachers, time and resources, and I would like to ask you some questions about the decisions made in order to establish this organization.

A. Factors

2.1 The first set of decisions I would like to look at are staffing decisions.

2.1.1 Would you describe the actual process or steps followed in making decisions about which teachers will teach which grades or subjects each year?

2.1.2 Who is involved in making these decisions?

2.1.3 How would you describe their roles?

2.1.4 Who makes the final decision?

2.1.5 When making staffing decisions, what criteria do you use to decide who will teach what, in other words, what things are taken into consideration?

2.1.6 Are any criteria more important than others? Which one(s)?

Part of the organization of the school involves making recommendations for hiring, dismissal and transferring of teachers:

2.1.7 If you are in the position of hiring a new staff member, what process is used or what are the actual steps followed to make that decision?

2.1.8 Who is involved in making that decision?

2.1.9 How would you describe their roles?

2.1.10 Who makes the final decision?

2.1.11 When making hiring decisions, what criteria do you use to decide who will teach what, in other words, what things are taken into consideration?

2.1.12 Are any criteria more important than others?

2.2 Part of the organization of the school has to do with its priorities and objectives as well as the other elements mentioned earlier. I'd like to ask you about that area.

2.2.1 What are your major concerns about program and curriculum?

2.2.2 Does your school set any goals or priorities?

2.2.2.1 If yes, how does this happen?

2.2.2.2 If yes, what happens with these goals once they have been set?

2.2.2.3 If established, how specific are the goals and priorities that are set for the school? Please give some examples.

2.2.2.4 Does a conflict or disagreement ever arise when decisions are geing made about these goals or priroties?

2.2.2.5 If so, how is that handled?

2.2.3 What is your role in establishing what the order of priority is for the goals or objectives toward which the school works?

2.2.4 In what ways do you think the priorities you set have an impact on the instructional program provided for students?

2.2.5 Would you like staff to be more involved in any of the decisions we have discussed? If yes, are there things you do to encourage them to become more involved?

Let's discuss the instructional strategies used in the school. By that I mean the teaching approach the teachers use with students.

2.3 Is there an approach to instruction that you consider essential to excellent teaching?

2.3.1 Who decides on the instructional approach used generally in the school? In each classroom?

2.3.2 Do you try to influence these decisions? Why? How?

2.3.3 Do you have views about the uses of resources and materials?

2.3.4 What is the relationship between the strategies you favour and resource materials?

2.3.5 Do you encourage teachers to use particular instructional approaches? Over an extended time period? Across grade levels?

2.3.6 Have you concerns regarding the amount of class time devoted to instruction? If yes, why? If yes, have you conveyed these concerns to teachers? How?

2.3.7 Is there a particular instructional orientation, i.e., the way teachers work with students, across the school? I'm thinking here, for example, of the kinds of relationships teachers build with students.

The next area I would like to talk to you about is the linkage between school goals and program objectives.

2.4 Would you describe the actual process or steps followed in the school in integrating the curriculum goals set for the school with the program objectives toward which each teacher works in the classroom?

2.4.1 Would you describe the actual process or steps followed in making decisions about linking overall curriculum goals and program objectives?

2.4.2 Who is involved in making these decisions?

2.4.3 How would you describe their roles?

2.4.4 Who makes the final decisions?

I'd like to discuss how you arrange for funding for program improvement.

2.5 When you were planning and implementing this program improvement effort, that is, the Computer Awareness Curriculum, how and where did you arrange for the funding to come from? Please describe how you went about obtaining the budget needed.

Part of the process I'd like to look at involves the way your school deals with overall goals and priorities.

2.6 Would you describe what happens if there are specific priorities for school programs set by your school division that conflict with goals or priorities set for your school by you or your staff? How would you handle such a situation?

B. Strategies

Now I'd like to discuss factors associated with your work with teachers in the school.

3.1 Looking at all the decisions concerning organization, are there any you think the principal/administration ought to make? If yes, which ones?

3.2 Are there any you think the staff ought to make? If yes, which ones?

3.3 Would you please describe how you went about organizing staff for implementing the Computer Awareness Curriculum? What was your role? What was the role of the staff?

3.4 Please describe how you see the roles of principal and teacher in terms of decision making in regard to new programs in the classroom.

3.4.1 Would you please describe the actual process or steps followed in deciding to implement a new classroom program?

3.4.2 Who is involved in making such a decision?

Let's discuss your own role in implementing the new curriculum.

3.5 Please describe the strategies you used to implement the new program.

3.5.1 In what activities did you become involved? To what depth?

3.5.2 Did you have any influence on how teachers worked together or learned from each other? If yes, what was the nature of this influence? What specific actions did you take? With what results?

Let's talk about your views regarding professional development for teachers on this staff.

3.6 Please describe how the professional development needs of teachers in your school are handled, in particular needs regarding the new curriculum you're implementing.

3.6.1 Does your staff discuss problem areas in professional development or classroom management in the new curriculum area with you? If yes, please describe how this happens. With what teachers? What kinds of issues are discussed? What kinds of actions do you take?

3.6.2 If you have to set priorities for professional development, how do you do that? What kinds of things receive priority?

3.6.3 Do you encourage individual teachers to set their own goals for growth and professional competence? If yes, how do you do this?

3.7 Please describe the process or steps followed to allow teachers to develop their knowledge and/or skills in the new curriculum area.

3.7.1 Who was involved in deciding what new areas of expertise were needed and should be addressed? How would you describe their roles?

3.7.2 How would you describe the role you took in seeing that teachers were provided with the necessary knowledge and skills, including becoming familiar with the technology, resources and materials? Did you provide non-teaching time? If yes, how was this done?

3.9 Please describe the kinds of information and the ways you gather this information about:

- happenings and problems within the school.
- instructional activities of teachers.
- any other educationally-related or general information you find useful to your work as principal.

3.10 Would you please describe the process and steps you used in providing teachers with needed resources and instructional materials within your school particularly in regard to the Computer Awareness Curriculum.

3.11 Please describe the most recent staff meeting you had.

3.11.1 Who initiated the meeting?

3.11.2 Who attended the meeting?

3.11.3 What items were discussed at the meeting?

3.11.4 Would you say that this meeting was reasonably typical of the staff meetings in this school? If no, in what way(s) did it differ from the typical staff meeting?

3.11.5 In your view, what are the two or three most important purposes in holding staff meetings?

3.12 How would you describe the larger system, that is the school division and its directions, in relation to the school goals you and your staff have set for this school?

3.12.1 If there is a conflict between divisional priorities and your school goals, to which would you give preference to in your actions and planning?

3.12.2 If you were to deviate from divisional priorities in favour of school goals, what would be the school division's attitude? How would that affect you/your school?

Let's talk about what you do in the school from a more personal point of view.

3.13 How is your day usually organized?

3.13.1 What would you describe as the routine parts of your job ? How do you handle them?

3.13.2 What would you say takes most of your time? How do you feel about that?

3.13.3 As far as you are concerned, what are the most important parts of your job?

C. Goals

1.1 Thinking about yourself as a principal, what are the most important aspects of your job to the functioning of the school? Why?

1.2 What are the seven or eight most important things you want students to get out of the time they spend in this school?

1.2.1 Do these things describe what you believe it means to be educated? If not, what else would you add?

1.2.2 Based on the goals for students, how would you describe your philosophy of education? What is the fundamental role of the school?

1.3 Education is a field fraught with continual change. What is your attitude toward change in general? in your school?

1.4 Which would you say best describes your orientation towards the teachers in your school: a "task" orientation or a "human relations" orientation?

1.5 Please describe how your school reported to and communicated with parents and the community at large over the last period of time, especially during that period since you started implementing the Computer Awareness Curriculum and in regard to that curriculum.

1.5.1 What kinds of things did you communicate to them about?

1.5.2 Please describe what type of relationship you think the school has or has tried to develop with the community.

1.5.3 What would you say the community expects of the school? How do you feel about that?

PART 2: Implementation of the New Program

6. In recent years there has been an increasingly large number of new programs to implement in the school. What happens to new curriculum programs or guidelines when they come to your school?

Let's talk about the effort to implement the Computer Awareness Curriculum in this school.

7. Please describe the actual process and steps followed in implementing the Computer Awareness Curriculum.

7.1 Who was involved?

7.2 Please describe their roles.

7.3 How would you describe your role?

7.4 In making a decision to implement a new program, what criteria do you use, or, in other words, what things do you take into consideration?

7.5 Looking at decisions concerning implementation, are there any decisions you think the principal ought to make? If yes, which ones?

7.6 In implementing the new curriculum we're talking about, what steps have you taken to involve as many of the teaching staff as possible? What problems did you run into in trying to involve teachers throughout the school?

PART 3: Current State of the Implementation Effort

Now I'd like to discuss the point at which the implementation effort has arrived at this time.

8. Please describe what you see as the current state of the school's efforts to implement the new curriculum and/or use of computers in teaching students.

9. How many of your teachers are actually involved in using the new curriculum? Are there any who to your knowledge are not using it at all?

10. Please describe the support systems you are currently providing in the school for the implementation effort in terms of such possible areas as:

    - relief time for teachers to acquire skills and knowledge, and to plan and prepare.
    - support time for teachers to assist each other.
    - material or equipment resources.

11. What actions of yours do you consider were crucial to the implementation of computers for teaching purposes in the school?

# Appendix C

## VICE-PRINCIPAL INTERVIEW GUIDE

May 28, 1985

VICE-PRINCIPAL INTERVIEW

In order to plan effectively for the implementation of new curricula in schools, it is important that we as educators understand this process.

I am examining the implementation of one new curriculum, that of the Computer Awareness Curriculum, with the purpose of increasing our understanding of that process.

The emphasis of my study is on the principal's role. I'm going to be asking you about various factors having to do with his work in the school. The reason for this is that research has linked a large number of such factors with implementation. So I'll be asking questions about factors that you may not perceive as being linked with implementation, but that may be in the research.

I stress, however, that I am not doing an evaluation of the principal, and I have discussed this issue with him and have his agreement.

Also, because the principal and you as vice-principal in this school work as a team, I want to ask you about the functions you're concerned with, your perceptions about the organization of the school, and your leadership role.

I appreciate you taking time for this interview. Without your openness and frankness I could not hope to carry out this study. I hope it is understood that all responses (as well as all data) will remain absolutely confidential and anonymous under any and all circumstances.

I ask that you not discuss this interview with other people in the school or connected with it.

I look forward to sharing the resulting study with you and other staff members under the conditions noted above. I appreciate your help.

Interview Questions for Entry

Please give me a brief sketch of yourself, including information that as an interviewer I should know or would find useful about you. (When did you first come here? Why? What have your responsibilities been? What is currently the key issue for your own work in the school? What are your overall impressions of the school? What are its strengths? Weaknesses?)

PART I

Let's begin by talking about factors that make up the organization of your school. This school has, of course, its own unique organizaton of classes, teachers, time and resources, and I would like to ask you some questions about the decisions made in order to establish this organization.

A. Factors

2.1 The first set of decisions I would like to look at are staffing decisions.

2.1.1 Would you describe the actual process or steps followed in making decisions about which teachers will teach which grades or subjects each year?

2.1.2 Who is involved in making these decisions?

2.1.3 How would you decribe their roles?

2.1.4 Who makes the final decision?

2.1.5 When making staffing decisions, what criteria do you use to decide who will teach what, in other words, what things are taken into consideration?

2.1.6 Are any criteria more important than others? Which one(s)?

Part of the organization of the school involves making recommendations for hiring, dismissal and transferring of staff.

2.1.7 If you are in the position of hiring a new staff member, what process is used or what are the actual steps followed to make that decision?

2.1.8 Who is involved in making that decision?

2.1.9 How would you describe their roles?

2.1.10 Who makes the final decision?

2.1.11 When making hiring decisions, what criteria do you use to decide who will teach what, in other words, what things are taken into consideration?

2.1.12 Are any criteria more important than others?

2.2 Part of the organization of the school has to do with its priorities and objectives as well as the other elements mentioned earlier. I'd like to ask you about that area.

2.2.1 What are your major concerns about program and curriculum?

2.2.2 Does your school set any goals or priorities?

2.2.2.1 If yes, how does this happen?

2.2.2.2 If yes, what happens with these goals once they have been set?

2.2.2.3 If established, how specific are the goals and priorities that are set for the school? Please give some examples.

2.2.2.4 Does a conflict or disagreement ever arise when decisions are being made about these goals or priorities?

2.2.2.5 If so, how is that handled?

2.2.3 What is your role in establishing what the order of priority is for the goals or objectives toward which the school works?

2.2.4 In what ways do you think the priorities you set have an impact on the instructional program provided for students?

2.2.5 Would you like staff to be more involved in any of the decisions we have discussed? If yes, are there things you do to encourage them to become more involved?

Let's discuss the instructional strategies used in the school. By that I mean the teaching approach the teachers use with students.

2.3 Is there an approach to instruction that you consider essential to excellent teaching?

2.3.1 Who decides on the instructional approach used generally in the school? In each classroom?

2.3.2 Do you try to influence these decisions? Why? How?

2.3.3 Do you have views about the uses of resources and materials?

2.3.4 What is the relationship between the strategies you favour and resource materials?

2.3.5 Do you encourage teachers to use particular instructional approaches? Over an extended time period? Across grade levels?

2.3.6 Have you concerns regarding the amount of class time devoted to instruction? If yes, why? If yes, have you conveyed these concerns to teachers? How?

2.3.7 Is there a particular orientation, i.e., the way teachers work with students, across the school? I'm thinking here, for example, of the kinds of relationships teachers build with students.

The next area I would like to talk to you about is the linkage between school goals and program objectives.

2.4 Would you describe the actual process or steps followed in the school in integrating the curriculum goals set for the school with the program objectives towards which each teacher works in the classroom?

2.4.1 Would you describe the actual process or steps followed in making decisions about linking overall curriculum goals and program objectives?

2.4.2 Who is involved in making these decisions?

2.4.3 How would you describe their roles?

2.4.4 Who makes the final decision?

I'd like to discuss how funding for program improvement is arranged for in this school.

2.5 When the school was planning and implementing this program improvement effort, that is, the Computer Awareness Curriculum, how and where did arrangements for the funding come from? Please describe how you and/or the principal went about obtaining the budget needed.

Part of the process I'd like to look at involves the way your school deals with overall goals and priorities.

2.6 Would you describe what happens if there are specific priorities for school programs set by your school division that conflict with goals or priorities set for your school by you or your staff? How would you handle such a situation?

B. Strategies

Now I'd like to discuss factors associated with your work with teachers in the school.

3.1 Looking at all the decisions concerning organization, are there any you think the principal/administration ought to make? If yes, which ones? Any the vice-principal ought to make? If yes, which ones?

3.2 Are there any you think the staff ought to make? If yes, which ones?

3.3 Would you please describe how the principal and/or yourself went about organizing staff for implementing the Computer Awareness Curriculum? What was your role? What was the role of the staff?

3.4 Please describe how you see the roles of principal, vice-principal and teacher in terms of decision making in regard to new programs in the classroom.

3.4.1 Would you please describe the actual process or steps followed in deciding to implement a new classroom program?

3.4.2 Who is involved in making such a decision?

3.4.3 Would you please describe the nature and frequency of staff meetings in this school?

Let's discuss your own role in implementing the new curriculum.

3.5 Please describe the strategies you used to implement the new program.

3.5.1 In what activities did you become involved? To what depth?

3.5.2 Did you have any influence on how teachers worked together or learned from each other? If yes, what was the nature of this influence? What specific actions did you take? With what results?

Let's talk about your views regarding professional development for teachers on this staff.

3.6 Please describe how the professional development needs of teachers in your school are handled, in particular needs regarding the new curriculum you're implementing.

3.6.1 Does the staff discuss problem areas in professional development or classroom management in the new curriculum area with you? If yes, please describe how this happens. With what teachers? What kinds of issues are discussed? What kinds of actions do you take?

3.6.2 If you have to set priorities for professional development, how do you do that? What kinds of things receive priority?

3.6.3 Do you or the principal encourage individual teachers to set their own goals for growth and professional competence? If yes, how is this done?

3.7 Please describe the process or steps followed to allow teachers to develop their knowledge and/or skills in the new curriculum area.

3.7.1. Who was involved in deciding what new areas of expertise were needed and should be addressed? How would you describe their roles?

3.7.2 How would you describe the role you took in seeing that teachers were provided with the necessary knowledge and skills, including becoming familiar with the technology, resources and materials? Did you provide non-teaching time? If yes, how was this done?

3.9 Please describe the kinds of information and the ways you gather this information about:

- happenings and problems within the school.
- instructional activities of teachers.
- any other educationally-related or general information you find useful to your work as vice-principal.

3.10 Would you please describe the process and steps used to provide teachers with needed resources and instructional materials within your school particularly in regard to the Computer Awareness Curriculum?

3.11 Please describe the most recent staff meeting you had.

3.11.1 Who initiated the meeting?

3.11.2 Who attended the meeting?

3.11.3 What items were discussed at the meeting?

3.11.4 Would you say that this meeting was reasonably typical of the staff meetings in this school? If no, in what way(s) did it differ from the typical staff meeting?

3.11.5 In your view, what are the two or three most important purposes in holding staff meetings?

3.12 How would you describe the larger system, that is the school division and its directions, in relation to the school goals you and your staff have set for this school?

3.12.1 If there is a conflict between divisional priorities and your school goals, to which would you and the principal give preference in your actions and planning?

3.12.2 If you or the principal were to deviate from divisional priorities in favour of school goals, what would be the school division's attitude? How would that affect you/your school?

Let's talk about what you do in the school from a more personal point of view.

3.13 How is your day usually organized?

3.13.1 What would you describe as the routine parts of your job? How do you handle them?

3.13.2 What would you say takes most of your time? How do you feel about that?

3.13.3 As far as you are concerned, what are the most important parts of your job?

C. <u>Goals</u>

1.1 Thinking about yourself as a vice-principal, what are the most important aspects of your job to the functioning of the school? Why?

1.2 What are the seven or eight most important things you want students to get out of the time they spend in this school?

1.2.1 Do these things describe what you believe it means to be educated? If not, what else would you add?

1.2.2 Based on goals for students, how would you describe your philosophy of education? What is the fundamental role of the school?

1.3 Education is a field fraught with continual change. What is your attitude toward change in general? in your school?

1.4 Which would you say best describes your orientation towards the teachers in your school: a "task" orientation or a "human relations" orientation?

1.5 Please describe how your school reported to and communicated with parents and the community at large over the last period of time, especially that period since you started implementing the Computer Awareness Curriculum and in regard to that curriculum.

1.5.1 What kinds of things did you communicate to them?

1.5.2 Please describe what type of relationship you think the school has or has tried to develop with the community.

1.5.3 What would you say the community expects of the school? How do you feel about that?

PART 2: Implementation of the New Program

6. In recent years there has been an increasingly large number of new programs to implement in the school. What happens to new curriculum programs or guidelines when they come to your school?

Let's talk about the effort to implement the Computer Awareness Curriculum in this school.

7. Please describe the actual process and steps followed in implementing the Computer Awareness Curriculum

7.1 Who was involved?

7.2 Please describe their roles.

7.3 How would you describe your role?

7.4 In making a decision to implement a new program, what criteria do you use, or, in other words, what things do you take into consideration?

7.5 Looking at decisions concerning implementation, are there any decisions you think the principal or vice-principal ought to make? If yes, which ones?

7.6 In implementing the new curriculum we're talking about, what steps were taken to involve as many of the teaching staff as possible? What problems were met in trying to involve teachers throughout the school?

PART 3: Current State of the Implemenation Effort

Now I'd like to discuss the point at which the implemenation effort has arrived at this time.

8. Please describe what you see as the current state of the school's efforts to implement the new curriculum.

9. How many of the teachers are actually involved in using the new curriculum? Are there any who to your knowledge are not using it at all?

10. Please describe support systems currently provided in the school for the implementation effort in terms of such possible areas as:
    - relief time for teachers to acquire skills and knowledge, and to plan and prepare.
    - support time for teachers to assist each other.
    - material or equipment resources.

11. What actions did you and/or the principal take that you consider crucial to the implementation of computers for teaching purposes in the school?

# Appendix D

## CLASSROOM OBSERVATION SCHEDULE

## Classroom Observation Schedule

Classroom observation consisted of observation of one classroom period of up to one hour in each classroom during a designated Computer Awareness lesson. Observations were based upon the following guidelines:

1. Of the five components of the Computer Awareness Curriculum, the components being dealt with in this classroom period were:

   _____ a. hands-on use of the computer by students.

   _____ b. the parts and care of a computer.

   _____ c. a historical approach to the development of the computer.

   _____ d. use of the computer to promote students' thinking abilities/skills.

   _____ e. the use of the computer in school, home, and/or community.

2. Was the teacher working on the curriculum alone? _____ With others? _____ If yes, number of people _____ categories (e.g., other teachers, students, etc.) _____.

3. Resources on Computer Awareness available in the classroom (number and types).

4. Is there evidence of student work on and involvement in the new curriculum? _____ If yes, note types, amounts, and which/how many students involved.

# Appendix E

## TEACHER INTERVIEW GUIDE

# TEACHER INTERVIEW

In order to plan effectively for the implementation of new curricula in schools, it is important that we as educators understand this process.

I am examining the implementation of one new curriculum, that of the Computer Awareness Curriculum, with the purpose of increasing our understanding of that process.

The emphasis of my study is on the principal's role. I'm going to be asking you about various factors having to do with his work in the school. The reason for this is that research has linked a large number of such factors with implementation. So I'll be asking questions about factors that you may not perceive as being linked with implementation, but that may be in the research.

I stress, however, that I am not doing an evaluation of the principal, and that I have discussed this issue with him and have his agreement.

Also, the principal and vice-principal in this school work as a team. When I ask about the principal, it may be the vice-principal who carries out that function where you're concerned. If so, please tell me that, and then deal with the vice-principal in your response.

I appreciate you taking time for this interview. Without your openness and frankness I could not hope to carry out this study. I hope it is understood that all responses (as well as all data) will remain absolutely confidential and anonymous under any and all circumstances.

I ask that you not discuss this interview with other people in the school or connected with it.

I look forward to sharing the resulting study with you and other staff members under the conditions noted above.

.....

1. This instrument incorporates format and questions from two instruments:

a) Parts A and B: Leithwood and Montgomery's Profile of Growth in Principal Effectiveness (1983) was used as a basis for developing format and questions. However, the questions and manner of rating them were developed specifically for the purposes of this study.

b) Part C: The Levels of Use questionnaire and rating guide were developed by Hall, Loucks, Rutherford and Newlove (1977).

2. Numbering was not sequential in the interview guide. Instead, numbers were referenced to items in the "Principal's Dimensions of Behaviour" guide (Appendix "A").

.....

Introductory Questions

Please give me some information about yourself. When did you first come to this school? What have your responsibilities been?

PART A: The School

Let's talk about the organization of this school. This school has its own unique organization of classes, teachers, time and resources, and I would like to ask you some questions about that organization.

3.5 How often are there staff meetings in this school? Would you please describe the nature of the staff meetings?

3.11 Please describe the most recent staff meeting you attended.

3.11.1 Who initiated the meeting?

3.11.2 Who attended the meeting?

3.11.3 What items were dealt with at the meetings?

3.11.4 Would you say that this meeting was reasonably typical of the staff meetings in this school? If no, in what ways did it differ from the typical staff meeting?

3.11.5 In your view, what are/should be the two or three most important purposes in holding staff meetings?

2. Factors

2.1 The first set of factors I would like to look at are staffing factors.

2.1.1 Would you describe the actual process or steps followed in making decisions about which teachers will teach which subjects or grades each year?

2.1.2 Who is involved in making these decisions?

2.1.3 How would you describe their roles?

2.1.4 Who makes the final decision?

2.1.5 What criteria or things are taken into consideration when deciding who will teach what?

2.1.6 Are any of these criteria more important than others? Which ones?

2.2 Part of the organization of the school has to do with its priorities and objectives as well as the elements of teachers, resources, and so on. I'd like to talk with you about those objectives and priorities.

2.2.1 What are your major concerns about program and curriculum in regard to the school in general? Your classroom in particular?

2.2.2 Does your school set any goals or priorities?

2.2.2.1 If yes, how does this happen?

2.2.2.2 If yes, what happens to these goals once they have been set?

2.2.2.3 If established, how specific are the goals and priorities that have been set for the school? Please give some examples.

2.2.2.4 If established, does a conflict or disagreement ever arise when decisions are being made about goals or priorities? If so, how is this handled?

2.2.3 If your school has a goal-setting process, what is your role in establishing what the order of priority is for the goals or objectives toward which the school works?

2.2.4 Do you think that the school staff ought to be more involved in the decisions on goals and priorities? How do you think the principal views your thinking on this point? If you think school staff ought to be more involved, have you done things to encourage more staff involvement? If so, what things? If not, why not?

Let's talk about the instructional strategies used in the school. By that I mean the teaching approach the teachers use with students.

2.3 Is there an approach to instruction that you consider essential to excellent teaching? If yes, how do you think other teachers in the school feel about that approach?

2.3.1 Who decides on the instructional approach used generally in the school? In each classroom?

2.3.2 Does the principal try to influence these decisions? Why? How?

2.3.4 What is the relationship between the teaching approach you favour and the use of resource materials?

3.9 Is the principal familiar with the instructional activities you use in the classroom? If yes, how does he gain knowledge of your approach?

Does he discuss your instructional approach with you? If yes, under what conditions? If yes, what use is made of that knowledge?

2.3.5 Does the principal encourage teachers to use one or more particular instructional approaches? over an extended time period? over grade levels?

2.3.6 Has the principal conveyed concerns regarding the amount of class time devoted to instruction either to you individually or to the staff in sub-units or as a whole? If yes, how has he conveyed this concern? If yes, what do you think his reasons are for conveying it.

2.3.7 Would you say that this school has a particular instructional orientation across the school? What I'm thinking about here is the way teachers work with students throughout the school, such as the kinds of relationships teachers have or build with students.

The next area I would like to talk to you about is the linkage between curriculum goals and program objectives.

Let's talk about the actual process or steps followed in the school in integrating the curriculum goals or priorities set for the school with program objectives toward which each teacher works in the classroom.

2.4 Please describe the actual steps or process followed in making decisions about linking overall school curriculum goals and the program objectives at each classroom level.

2.4.1 Who is involved in making these decisions?

2.4.2 How would you describe their roles?

2.4.3 Who makes the final decision?

2.4.4 How would you describe the principal's role in the linking of curriculum goals and program objectives?

2.4.5 Describe how clear a picture you feel you have of what you are expected to do in carrying out this linking of goals and program objectives (check list follows):

very clear, somewhat clear, ambivalent,

somewhat unclear, or very unclear.

Are there any respects in which it is unclear to you? If yes, in what respects is it unclear?

2.6 What do you think your principal's response/actions would be if district priorities were set that were different from or opposed to the goals he and/or the staff had set for the school?

3. <u>Strategies</u>

Now I'd like to discuss with you elements associated with the principal's work with teachers in this school.

3.1 Looking at all the decisions the principal has to make concerning the organization of the school, which ones do you think the principal takes it upon himself to make?

3.2 Are there decisions he expects the staff to make? If yes, which ones?

4. In recent years there has been an increasingly large number of new programs to implement in the schools. What happens to new curriculum programs and guidelines when they come to your school?

3.6.2 Do you feel that the principal gives or has given high priority to teachers' curriculum planning activities? If yes, what actions on his part give you this feeling?

3.6.4 What kinds of professional development activities does the principal support? What kinds of support does he give?

3.6.5 Do you receive encouragement from the principal for setting goals for your own growth and professional development? If yes, how does he provide that encouragement?

Goals

1.1 Education is a field that is fraught with continual change. What would you say the principal's attitude is toward change?

3.13 How does the principal organize his day?

3.13.1 How do you see him handling the routine parts of his job? What proportion of his time do you think he spends on routine management?

3.13.2 What would you say he spends the larger part of his time on?

3.13.3 What would you say he conveys to staff as being the most important part of his job?

1.2 What school goals would you say are important to the principal? How has he conveyed these to you?

1.3 Which would you say best describes the principal's orientation towards teachers in the school: a "task" orientation or a "human relations" orientation?

Community

1.4 Please describe how the school reported to and communicated with parents and the community at large over the period of time since the school started implementing the Computer Awareness Curriculum, especially in regard to that curriculum.

1.4.1 What types of things were communicated to them?

1.4.2 Please describe the quality of relationship you think the school has or has tried to develop with the community.

1.4.3 What would you say the community expects of the school? How do you feel about that?

Let's discuss how the computer Awareness Curriculum was implemented. We'll look at various aspects in turn: the decision to implement, the implementation itself, professional development in the new area, and obstacles that may have been experienced.

3.3 Would you please describe how the principal went about organizing this staff to implement the Computer Awareness Curriculum? What was your role? What was the role of the principal? What was the role of the rest of the staff?

3.4 Please describe how you saw the roles of the principal and teachers in terms of decision making in regard to the Computer Awareness Curriculum:

3.4.1 Please describe the actual process or steps followed in deciding to implement the new program.

3.4.2 Who was involved in making such a decision?

3.4.3 I understand that it was the principal's intention from the time of initiating the new curriculum to involve as many as possible of the classroom teachers on staff in that curriculum. Would you please describe the process or steps used to accomplish that intention?

3.4.4 Did one or more teachers work together on the implementation of the new program? If so, in what way(s) did they work together? How did that come about?

3.4.5 If a staff member had expertise in an area of the new program, how did the principal view that expertise? Did he use it in any way? If yes, how?

3.4.6 Please describe the principal's involvement in the implementation effort. What specific actions, if any, did he take? (If not addressed spontaneously by the teacher, inquire about: inservice arrangements; development of expertise in the new area on the part of the principal; involvement in start-up activities; provision of resources, equipment, and time for teachers; and arrangements for teacher meetings and teamwork.)

Let's talk for a few moments about staff professional development.

3.6 Please describe how the professional development needs of teachers in this school are handled, in particular needs relating to the new computer curriculum you're implementing.

3.6.1 Do you discuss problem areas in professional development or classroom management relating to the new curriculum with the principal? If yes, please describe how this happens. Under what circumstances? What kinds of issues are discussed? What actions have been taken?

3.6.3 From your own experience, do you feel that the principal would give support to your trying something new in teaching the new curriculum, even if it might not work? Why do you feel this way?

3.7 Please describe the process or steps followed to allow teachers to develop their skills and knowledge in the new curriculum area.

3.7.1 Who was involved in deciding what new areas of expertise were needed and should be addressed? How would you describe their roles?

3.7.2 Please describe the role that the prinicpal took in providing teachers with knowledge and skills:

- in regard to becoming familiar with the technology, resources and materials.
- in regard to non-teaching time. If provision was made for this, how was this done?

5. Please describe the actual process or steps followed in implementing the Computer Awareness Curriculum.

5.1 Who was involved?

5.2 Please describe their roles.

5.3 How would you describe your role?

5.4 Looking at decisions concerning implementation, are there any decisions you think the principal ought to make? If yes, which ones? Are there any the teachers ought to make? If yes, which ones?

3.4.3 Did the principal meet with any problems in trying to involve teachers throughout the school? If so, what were those problems?

5.7 Please outline any obstacles to implementation that you personally experienced; that you observed or heard about from other staff.

5.8 What actions did the principal take that you consider to be crucial to the implementation effort in the school?

Levels of Use Interview

Now I'd like to discuss the point to which you yourself have reached in implementing the Computer Awareness Curriculum.

Are you currently using the Computer Awareness Curriculum in your classroom?

If so, which of the following components of the new curriculum are currently being used/have been used?

.... 1. Hands-on use of the computer in the classroom.

.... 2. Classroom instruction on the component parts of a computer and how a computer works.

.... 3. Classroom instruction on how computers have developed in a historical sense (not necessarily a formal historical approach).

.... 4. Classroom instruction on using the computer to develop thinking skills: problem-solving, logical thinking, discovery-based learning, use of the computer for drill and practice, etc.

.... 5. Classroom instruction on the role of computers in our lives, that is, technology in the home, school and community.

(NOTE: The decision as to whether the individual is a user or non-user of the innovation is made at this point. The "user" is defined as one who is using/has used at least three of the five components of the new curriculum in the list above.)

## IF YES

1. What do you see as the strengths and weaknesses of CAC in your situation? Have you made any attempt to do anything about the weaknesses?

2. Are you currently looking for any information about the CAC? What kind? For what purpose?

3. Do you ever talk to others about the CAC? What do you tell them?

4. What do you see as being the effects of the CAC? In what way have you determined this? Are you doing any evaluating, either formally or informally, of your use of the CAC? Have you received any feedback from students? What have you done with the information you got?

5. Have you made any changes recently in how you use the CAC? What? Why? How recently? Are you considering making any changes?

## IF NO

1. Have you made a decision to use the Computer Awareness Curriculum in the future? If so, when?

2. Can you describe the CAC for me as you see it?

3. Are you currently looking for any information about the CAC? What kinds? For what purpose?

4. What do you see as the strengths and weaknesses of the CAC for your situation?

5. At this point in time, what kinds of questions are you asking about the CAC? Give examples if possible.

6. Do you ever talk with others and share information about the CAC? What do you share?

7. What are you planning with respect to the CAC? Can you tell me about any preparation or plans you have been making for the use of the CAC?

8. Can you summarize for me where you see yourself right now in relation to the use of the CAC? (Optional question)

# Appendix F

## LEVELS OF USE CHART

## FIGURE I — LoU CHART



| SCALE POINT DEFINITIONS OF THE LEVELS OF USE OF THE INNOVATION | CATEGORIES | | |
|---|---|---|---|
| **ols of Use are distinct states that esent observably different types of avior and patterns of Innovation as exhibited by individuals and ups. These levels characterize a 's development in acquiring new s and varying use of the innova- . Each level encompasses a range behaviors, but is limited by a set identifiable Decision Points. For criptive purposes, each level is de- d by seven categories.** | **KNOWLEDGE**<br>**That which the user knows about characteristics of the innovation, how to use it, and consequences of its use. This is cognitive knowledge related to using the innovation, not feelings or attitudes.** | **ACQUIRING INFORMATION**<br>**Solicits information about the innovation in a variety of ways, including questioning resource persons, corresponding with resource agencies, reviewing printed materials, and making visits.** | **SHARING**<br>**Discusses the innovation with others. Shares plans, ideas, resources, outcomes, and problems related to use of the innovation.** |
| **/EL 0**<br>-USE: State in which the user has or no knowledge of the innovation, nvolvement with the innovation, and oing nothing toward becoming in- ed. | Knows nothing about this or similar innovations or has only very limited general knowledge of efforts to develop innovations in the area. | Takes little or no action to solicit information beyond reviewing descriptive information about this or similar innovations when it happens to come to personal attention. | Is not communicating with others about the innovation beyond possibly acknowledging that the innovation exists. |
| ECISION POINT A | *Takes action to learn more detailed information about the innovation.* | | |
| **/EL I**<br>ENTATION: State in which the user acquired or is acquiring information it the innovation and/or has ex- ed or is exploring its value orienta- and its demands upon user and system. | Knows general information about the innovation such as origin, characteristics, and implementation requirements. | Seeks descriptive material about the innovation. Seeks opinions and knowledge of others through discussions, visits, or workshops. | Discusses the innovation in general terms and/or exchanges descriptive information, materials, or ideas about the innovation and possible implications of its use. |
| ECISION POINT B | *Makes a decision to use the innovation by establishing a time to begin.* | | |
| **/EL II**<br>PARATION: State in which the user reparing for first use of the innova- | Knows logistical requirements, necessary resources and timing for initial use of the innovation, and details of initial experiences for clients. | Seeks information and resources specifically related to preparation for use of the innovation in own setting. | Discusses resources needed for initial use of the innovation. Joins others in pre-use training, and in planning for resources, logistics, schedules, etc., in preparation for first use. |
| ECISION POINT C | *Begins first use of the innovation.* | | |
| **/EL III**<br>HANICAL USE: State in which the focuses most effort on the short- day-to-day use of the innovation little time for reflection. Changes se are made more to meet user s than client needs. The user is arily engaged in a stepwise attempt aster the tasks required to use the vation, often resulting in disjointed superficial use. | Knows on a day-to-day basis the requirements for using the innovation. Is more knowledgeable on short-term activities and effects than long-range activities and effects of use of the innovation. | Solicits management information about such things as logistics, scheduling techniques, and ideas for reducing amount of time and work required of user. | Discusses management and logistical issues related to use of the innovation. Resources and materials are shared for purposes of reducing management, flow and logistical problems related to use of the innovation. |
| ECISION POINT D-1 | *A routine pattern of use is established.* | | |
| **EL IV A**<br>TINE: Use of the innovation is lized. Few if any changes are be- made in ongoing use. Little prepa- n or thought is being given to im- ng innovation use or its conse- ces. | Knows both short- and long-term requirements for use and how to use the innovation with minimum effort or stress. | Makes no special efforts to seek information as a part of ongoing use of the innovation. | Describes current use of the innovation with little or no reference to ways of changing use. |
| ECISION POINT D-2 | *Changes use of the innovation based on formal or informal evaluation in order to increase client outcomes.* | | |
| **EL IV B**<br>NEMENT: State in which the user s the use of the innovation to in- e the impact on clients within im- ate sphere of influence. Variations based on knowledge of both short- long-term consequences for clients. | Knows cognitive and affective effects of the innovation on clients and ways for increasing impact on clients. | Solicits information and materials that focus specifically on changing use of the innovation to affect client outcomes. | Discusses own methods of modifying use of the innovation to change client outcomes. |
| CISION POINT E | *Initiates changes in use of innovation based on input of and in coordination with what colleagues are doing.* | | |
| **EL V**<br>GRATION: State in which the user mbining own efforts to use the in- ion with related activities of col- ues to achieve a collective impact lients within their common sphere fluence. | Knows how to coordinate own use of the innovation with colleagues to provide a collective impact on clients. | Solicits information and opinions for the purpose of collaborating with others in use of the innovation. | Discusses efforts to increase client impact through collaboration with others on personal use of the innovation. |
| CISION POINT F | *Begins exploring alternatives to or major modifications of the innovation presently in use.* | | |
| **EL VI**<br>EWAL: State in which the user re- ates the quality of use of the in- ion, seeks major modifications of ternatives to present innovation to ve increased impact on clients, ex- es new developments in the field, explores new goals for self and the m. | Knows of alternatives that could be used to change or replace the present innovation that would improve the quality of outcomes of its use. | Seeks information and materials about other innovations as alternatives to the present innovation or for making major adaptations in the innovation. | Focuses discussions on identification of major alternatives or replacements for the current innovation. |

*edures for Adopting Educational Innovations Project, Research and Development Center for Teacher Education, University of Texas at Austin, 1975, N.I.E. Contract NIE-C-74-0087.*

. E. Hall, S. F. Loucks, W. L. Rutherford, and B. W. ewlove, Journal of Teacher Education, I, 1975, page 54.

## FIGURE I — LoU CHART

### CATEGORIES

| ASSESSING | PLANNING | STATUS REPORTING | PERFORMING |
|---|---|---|---|
| nes the potential or actual use of inovation or some aspect of it. can be a mental assessment or volve actual collection and analf data. | Designs and outlines short- and/or long-range steps to be taken during process of innovation adoption, i.e., aligns resources, schedules activities, meets with others to organize and/or coordinate use of the innovation. | Describes personal stand at the present time in relation to use of the innovation. | Carries out the actions and activities entailed in operationalizing the innovation. |
| no action to analyze the innovas characteristics, possible use, or luences of use. | Schedules no time and specifies no steps for the study or use of the innovation. | Reports little or no personal involvement with the innovation. | Takes no discernible action toward learning about or using the innovation. The innovation and/or its accouterments are not present or in use. |
| s and compares materials, conequirements for use, evaluation potential outcomes, strengths aknesses for purpose of making ion about use of the innovation. | Plans to gather necessary information and resources as needed to make a decision for or against use of the innovation. | Reports presently orienting self to what the innovation is and is not. | Explores the innovation and requirements for its use by talking to others about it, reviewing descriptive information and sample materials, attending orientation sessions, and observing others using it. |
| s detailed requirements and e resources for initial use of the on. | Identifies steps and procedures entailed in obtaining resources and organizing activities and events for initial use of the innovation. | Reports preparing self for initial use of the innovation. | Studies reference materials in depth, organizes resources and logistics, schedules and receives skill training in preparation for initial use. |
| s own use of the innovation spect to problems of logistics, ment, time, schedules, re- and general reactions of | Plans for organizing and managing resources, activities, and events related primarily to immediate ongoing use of the innovation. Planned-for changes address managerial or logistical issues with a short-term perspective. | Reports that logistics, time, management, resource organization, etc., are the focus of most personal efforts to use the innovation. | Manages innovation with varying degrees of efficiency. Often lacks anticipation of immediate consequences. The flow of actions in the user and clients is often disjointed, uneven and uncertain. When changes are made, they are primarily in response to logistical and organizational problems. |
| valuation activities to those adively required, with little atten- to findings for the purpose of use. | Plans intermediate and long-range actions with little projected variation in how the innovation will be used. Planning focuses on routine use of resources, personnel, etc. | Reports that personal use of the innovation is going along satisfactorily with few if any problems. | Uses the innovation smoothly with minimal management problems; over time, there is little variation in pattern of use. |
| use of the innovation for the of changing current practices e client outcomes. | Develops intermediate and long-range plans that anticipate possible and needed steps, resources, and events designed to enhance client outcomes. | Reports varying use of the innovation in order to change client outcomes. | Explores and experiments with alternative combinations of the innovation with existing practices to maximize client involvement and to optimize client outcomes. |
| collaborative use of the in- in terms of client outcomes ngths and weaknesses of the effort. | Plans specific actions to coordinate own use of the innovation with others to achieve increased impact on clients. | Reports spending time and energy collaborating with others about integrating own use of the innovation. | Collaborates with others in use of the innovation as a means for expanding the innovation's impact on clients. Changes in use are made in coordination with others. |
| advantages and disadvantages modifications or alternatives esent innovation. | Plans activities that involve pursuit of alternatives to enhance or replace the innovation. | Reports considering major modifications of or alternatives to present use of the innovation. | Explores other innovations that could be used in combination with or in place of the present innovation in an attempt to develop more effective means of achieving client outcomes. |

# Appendix G

## LEVELS OF USE RATING SHEET

Tape #:
Date: / / 75

Site:
I.D. #:

Interviewer:
Rater:

| Level | Knowledge | Acquiring Information | Sharing | Assessing | Planning | Status Reporting | Performing | Overall LoU |
|---|---|---|---|---|---|---|---|---|
| Non-Use D.P. A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Orientation D.P. B | I | I | I | I | I | I | I | I |
| Preparation D.P. C | II | II | II | II | II | II | II | II |
| Mechanical Use D.P. D-1 | III | III | III | III | III | III | III | III |
| Routine D.P. D-2 | IVA | IVA | IVA | IVA | IVA | IVA | IVA | IVA |
| Refinement D.P. E | IVB | IVB | IVB | IVB | IVB | IVB | IVB | IVB |
| Integration D.P. F | V | V | V | V | V | V | V | V |
| Renewal | VI | VI | VI | VI | VI | VI | VI | VI |
| User is not doing: | ND | ND | ND | ND | ND | ND | ND | |
| No information in interview: | NI | NI | NI | NI | NI | NI | NI | |

Is the individual a past user? Yes No

How much difficulty did you have in assigning this person to a specific LoU? None 1 2 3 4 5 6 7 Very much

Comments about interview --

General Comments --

LoU Rating Sheet

# Appendix H

## TABLES SUMMARIZING INTERVIEW DATA

TABLE 1

2.2.2 DOES THE SCHOOL SET ANY GOALS OR PRIORITIES? IF YES, WHAT ARE THEY?

| Respondent | Response | # of Responses |
|---|---|---|
| Principal | No goals are set.<br>Two priorities for the school are: program, socialization | 1 |
| Vice Principal | Goals are: program, community relations, computer | 1 |
| Teachers (n = 15) | Only broad general goals<br>Relating to community<br>Curriculum<br>Inservice needs<br>Quality education<br>Reading program specified by community<br>Sharing of resources<br>Computer<br>Shared school/divisional goals | 3<br>2<br>2<br>2<br>2<br>1<br>1<br>1<br>1 |
| | Total number of responses | 17 |

TABLE 2

2.2.2.1 IF THE SCHOOL SETS ANY GOALS OR PRIORITIES, HOW IS THIS DONE?

| Response | Respondents | # of Responses | % of Responses |
|---|---|---|---|
| Initial process prior to school opening, but no process since then | Vice-principal and 4 teacher | 5 | 29.41 |
| Meetings/inservice group discussion | 5 teachers | 5 | 29.41 |
| No process exists | Principal and 3 teachers | 4 | 23.53 |
| Don't know | 3 teachers | 3 | 17.64 |
| | TOTAL | 17 | 99.99 |

TABLE 3

2.2.2.2 WHAT HAPPENS TO THESE SCHOOL GOALS ONCE THEY HAVE BEEN SET?

| Response | Respondents | # of Responses | % of Responses |
|---|---|---|---|
| Goals are acted upon | Principal and 6 teachers | 7 | 41.18 |
| Goals are not acted upon | Vice-principal and 4 teachers | 5 | 29.41 |
| Goals are acted upon individually | 4 teachers | 4 | 23.53 |
| Not aware of any goals | 1 teacher | 1 | 5.88 |
| | TOTAL | 17 | 100.00 |

TABLE 4

2.2.2.4 IF GOALS ARE SET, DOES A CONFLICT OR DISAGREEMENT EVER ARISE WHEN DECISIONS ARE BEING MADE ABOUT GOALS OR PRIORITIES? IF SO, HOW IS THIS HANDLED?

| Response | Respondents: # and Type | % |
|---|---|---|
| No goals/don't know | 6 teachers | 35.29 |
| Yes, conflicts do arise | 4 (Vice-principal and 3 teachers) | 23.53 |
| Yes, minor conflicts or "differences" | 5 (Principal and 4 teachers) | 29.41 |
| No, there are no conflicts | 2 teachers | 11.76 |
| TOTAL | 17 | 99.99 |

TABLE 5

2.2.4 DO YOU THINK THE SCHOOL STAFF OUGHT TO BE MORE INVOLVED IN DECISIONS ON GOALS AND PRIORITIES?

| Response | Respondents: # and Type | % |
|---|---|---|
| Satisfied with present level | 10 (Principal and 9 teachers) | 58.82 |
| Some dissatisfaction, but not greatly concerned due to teacher autonomy | 4 teachers | 23.53 |
| Some dissatisfaction, but no purpose seen in increased involvement | 1 teacher | 5.88 |
| No response | 2 teachers (Vice-principal and 1 teacher) | 11.76 |
| TOTAL | 17 | 99.99 |

TABLE 6

3.1 LOOKING AT ALL THE DECISIONS THE PRINCIPAL HAS TO MAKE CONCERNING THE ORGANIZATION OF THE SCHOOL, WHICH ONES DO YOU THINK THE PRINCIPAL TAKES IT UPON HIMSELF TO MAKE?

| Responses | # of Teacher Respondents | % |
|---|---|---|
| He makes decisions on routine items: staffing, placement of support staff, final student placement, amount of funds assigned to each classroom, items mandated at divisional level, routine information handling, time tabling, scheduling affecting more than one class. | 7 | 46.66 |
| Principal seeks staff input on most items | 6 | 40.0 |
| Principal makes most decisions himself | 2 | 13.33 |
| TOTALS | 15 | 99.99 |

TABLE 7

3.2 ARE THERE DECISIONS HE EXPECTS THE STAFF TO MAKE? IF YES, WHICH ONES?

| Responses | # of Teacher Responses | % |
|---|---|---|
| Routine items. Teachers named: student activities such as puppet shows, concerts, assemblies, field trips, science fairs; money allocation within the school for A/V, gym equipment; report card format, timing of parent/ teacher interviews; use of teacher preparation time; information after the principal has pre-sorted it. | 14 | 53.8 |
| Program/program-related areas | 7 | 26.9 |
| Decisions are pre-made; staff is not expected to make decisions | 3 | 11.5 |
| No response | 2 | 7.69 |
| TOTALS | 26 | 99.89 |

TABLE 8

2.3 IS THERE AN APPROACH TO INSTRUCTION THAT YOU CONSIDER ESSENTIAL TO EXCELLENT TEACHING? IF YES, PLEASE DESCRIBE IT.

| Response | # of Teacher Respondents | % |
|---|---|---|
| Individualized approach | 7 (Vice-principal and 6 teachers | 41.18 |
| No single approach: eclectic | 5 teachers | 29.41 |
| Must like kids and provide a motivating climate | 2 teachers | 11.76 |
| Depends on student/subject | 1 teacher | 5.88 |
| Directed discovery method | 1 teacher | 5.88 |
| Not a concern from an administrative point of view | Principal | 5.88 |
| TOTALS | 17 | 99.89 |

TABLE 9

2.3.1 WHO DECIDES ON THE INSTRUCTIONAL APPROACH USED GENERALLY IN THE SCHOOL?

| Responses | #/Type of Respondents | % |
|---|---|---|
| Teachers | 15 (Principal, Vice-principal, and 13 teachers) | 88.23 |
| Can't speak for other teachers | 1 teacher | 5.88 |
| No one | 1 teacher | 5.88 |
| TOTALS | 17 | 99.99 |

TABLE 10

2.3.2 DOES THE PRINCIPAL (OR VICE-PRINCIPAL) TRY TO INFLUENCE THE INSTRUCTIONAL APPROACH USED IN EACH CLASSROOM?

| Responses | #/Type of Respondents | % |
|---|---|---|
| No | 15 (Principal and 14 teachers) | 88.23 |
| He makes various opinions known | 1 teacher | 5.88 |
| I do if there's a special need | 1 (Vice-principal) | 5.88 |
| TOTALS | 17 | 99.99 |

TABLE 11

3.9 IS THE PRINCIPAL FAMILIAR WITH THE INSTRUCTIONAL ACTIVITIES YOU USE IN YOUR CLASSROOM?

| Responses | # of teachers | |
|---|---|---|
| Yes | 5 | 33.33 |
| Yes, with qualifications ("in general", "vaguely") | 4 | 26.6 |
| Yes, but not as much as he should be | 2 | 13.33 |
| No | 2 | 13.33 |
| Don't know/not sure, but Vice-principal is | 2 | 13.33 |
| TOTALS | 15 | 99.98 |

IF YES, HOW DOES HE GAIN KNOWLEDGE OF YOUR APPROACH?

| Responses | # of teachers giving response |
|---|---|
| Principal drops into classroom | 10 |
| Formal evaluation process | 4 |
| Discussion | 2 |
| Previous teaching relationship in another school | 2 |
| Involved principal in preparation for Open House (Kindergarten) | 1 |
| TOTALS | 19 |

TABLE 12

3.9 (cont'd)

DOES THE PRINCIPAL DISCUSS YOUR INSTRUCTIONAL APPROACH WITH YOU?

| Responses | # of Teachers | % |
|---|---|---|
| No | 6 | 40.0 |
| No, except during evaluation | 4 | 26.66 |
| Yes | 4 | 26.66 |
| A few times | 4 | 6.66 |
| TOTALS | 15 | 99.98 |

IF YES, WHAT USE IS MADE OF THAT KNOWLEDGE?

| Responses | # of teachers |
|---|---|
| Encourage/support what I'm already doing | 4 |
| Not much help from administration in this area | 2 |
| Helped me improve the climate in the classroom | 1 |
| TOTAL | 7 |

TABLE 13

2.3.5 DOES THE PRINCIPAL ENCOURAGE TEACHERS TO USE ONE OR MORE INSTRUCTIONAL APPROACHES?

| Responses | #/Type of Respondent | % |
|---|---|---|
| No (unless there's a problem-Principal and Vice-principal) | 9 (Principal, Vice-principal 7 teachers) | 52.94 |
| Yes (Principal "encouraged a variety of approaches", encouraged "caring for the well-being off children", and "makes various opinions known".) | 3 teachers | 17.64 |
| Vice-principal acts in this area. | 3 teachers | 17.64 |
| No response | 2 teachers | 11.76 |
| TOTALS | 17 | 99.98 |

TABLE 14

2.3.7 WOULD YOU SAY THAT THIS SCHOOL HAS A PARTICULAR STUDENT ORIENTATION ACROSS THE SCHOOL? WHAT I'M THINKING ABOUT HERE IS THE WAY TEACHERS WORK WITH STUDENTS ACROSS THE SCHOOL, SUCH AS THE KINDS OF RELATIONSHIPS TEACHERS HAVE OR BUILD WITH STUDENTS.

| Responses | #/Type of Respondent | % |
|---|---|---|
| School is oriented to developing positive, caring relationships between teachers and students | 10 (Principal, Vice-principal, and 8 teachers) | 58.82 |
| No | 3 teachers | 17.64 |
| Other response ("There must be because the teachers selected for the school share similar ideas") | 1 teacher | 5.88 |
| Partly ("Primary grades have a common orientation but it is not carried through the upper grades") | 1 teacher | 5.88 |
| Don't know/no answer | 2 teachers | 11.76 |
| TOTALS | 17 | 99.98 |

TABLE 15

3.13 HOW DOES THE PRINCIPAL ORGANIZE HIS DAY?

(TEACHERS NAMED ACTIVITIES OF THE PRINCIPAL IN ANSWER TO THIS QUESTION.)

| Responses | # of Teachers giving response | % of Responses |
|---|---|---|
| Paperwork is major activity | 6 | 22.22 |
| Meetings are a major activity | 4 | 14.81 |
| Schedule varies from day to day | 2 | 7.4 |
| Principal is out of the school a lot | 4 | 14.81 |
| Do not know | 3 | 11.11 |
| Principal works through secretary who does some scheduling | 2 | 7.4 |
| Does a lot of work after hours | 2 | 7.4 |
| Principal establishes priorities but other things intervene | 2 | 7.4 |
| Phone calls | 1 | 3.7 |
| Time very unscheduled | 1 | 3.7 |
| TOTALS | 27 | 99.95 |

TABLE 15

3.13.1 HOW DO YOU SEE HIM HANDLING THE ROUTINE PARTS OF HIS JOB?

| Responses | # of teachers |
|---|---|
| He does paperwork in the mornings and meetings in the afternoon | 1 |
| He goes through the mail in the morning | 1 |
| TOTALS | 2 respondents |

WHAT PROPORTION OF THIS TIME DO YOU THINK HE SPENDS ON ROUTINE MANAGEMENT?

| Responses | # of teachers |
|---|---|
| A large proportion | 5 |
| One-half of his time | 2 |
| A good proportion | 1 |
| He is overloaded | 1 |
| Don't know | 5 |
| No response | 1 |
| TOTALS | 15 responses |

TABLE 16

3.13.2 WHAT WOULD YOU SAY HE SPENDS THE LARGER PART OF HIS TIME ON?

| Responses | # of teachers giving response |
|---|---|
| Paperwork | 6 |
| Routine administative tasks | 4 |
| Don't know/no answer | 4 |
| Public relations | 1 |
| TOTALS | 15 |

TABLE 17

3.13.3 WHAT WOULD YOU SAY HE CONVEYS TO STAFF AS BEING THE MOST IMPORTANT PART OF HIS JOB?

| Responses | # of Teachers giving response | % of Responses |
|---|---|---|
| Paperwork/routine administration/running of school | 11 | 73.33 |
| Support of staff/staff relations | 1 | 6.66 |
| Children's well-being | 1 | 6.66 |
| Curriculum leadership | 1 | 6.66 |
| Upward orientation (toward divisional office level) | 1 | 6.66 |
| TOTALS | 15 | 99.97 |

TABLE 18

1.3 WHAT WOULD YOU SAY BEST DESCRIBES THE PRINCIPAL'S ORIENTATION TOWARD TEACHERS IN THE SCHOOL: A "TASK" ORIENTATION OR A "HUMAN RELATIONS" ORIENTATION?

| Responses | #/type of Respondents | % of Responses |
|---|---|---|
| Human relations | 11 (2 administrators and 9 teachers) | 64.70 |
| Balanced ("50/50") | 4 teachers | 23.53 |
| Task orientation but not to the exclusion of human relations | 1 teacher | 5.88 |
| Can't say | 1 teacher | 5.88 |
| TOTALS | 17 | 99.99 |

TABLE 19

4.0 IN RECENT YEARS THERE HAS BEEN A LARGE NUMBER OF NEW PROGRAMS TO IMPLEMENT IN THE SCHOOLS. WHAT HAPPENS TO CURRICULUM PROGRAMS AND GUIDELINES WHEN THEY COME TO YOUR SCHOOL?

| Response | # and type of respondent |
|---|---|
| Teachers are given copies of the curriculum guide | 15 (Vice-principal and 14 teachers) |
| Inservice is provided | 14 (Principal, Vice-principal and 12 teachers) |
| The teacher is then on his/her own to implement | 12 (Principal, Vice-principal, and 10 teachers) |
| No one follows up to see if the curriculum is implemented | 7 teachers |
| TOTAL | 48 responses |

TABLE 20

2.4 PLEASE DESCRIBE THE ACTUAL PROCESS OR STEPS FOLLOWED IN THE SCHOOL IN INTEGRATING THE CURRICULUM GOALS OR PRIORITIES SET FOR THE SCHOOL WITH THE PROGRAM OBJECTIVES TOWARD WHICH EACH TEACHER WORKS IN THE CLASSROOM.

| Responses | # of Teachers giving response |
|---|---|
| It is left up to individual teacher initiative | 11 |
| School inservice | 7 |
| School looks at/discusses overall curriculum | 5 |
| Superintendent's department forms team to inservice/answer questions | 5 |
| It is assumed teacher will implement | 4 |
| No process or school philosophy exists on how to implement/ integrate curriculum with program | 2 |
| Don't know | 1 |
| TOTAL | 31 responses |

TABLE 21

2.4.1 WHO IS INVOLVED IN DECISIONS REGARDING INTEGRATING CURRICULUM GOALS WITH CLASSROOM PROGRAMS?

| Responses | # of Teachers giving response | % of Responses |
|---|---|---|
| Individual teacher | 14 | 40 |
| School (including the P.D. Committee) | 9 | 25.71 |
| Divisional initiative (including the divisional curriculum team) | 5 | 14.29 |
| Department of Education | 4 | 11.42 |
| Principal | 2 | 5.71 |
| Parents | 1 | 2.85 |
| TOTALS | 35 | 99.98 |

TABLE 22

2.4.4 HOW WOULD YOU DESCRIBE THE PRINCIPAL'S ROLE IN THE LINKING OF CURRICULUM GOALS AND PROGRAM OBJECTIVES?

| Responses | # of teachers giving response |
|---|---|
| Encourages; tells staff what he/ division consider important | 6 |
| Participates in P.D. Committee/ initiates interest and discussion | 5 |
| Does not take a role; assumes teachers are using curriculum | 5 |
| Presents information to staff, for example about inservices | 4 |
| Depends on curriculum area: he took a lead role in the computer curriculum | 2 |
| Helps in classroom | 2 |
| Makes himself available to help | 1 |
| Puts on workshops | 1 |
| Becomes knowledgeable himself | 1 |
| Gives approval for teacher participation on divisional team | 1 |
| Not sure | 1 |
| TOTAL | 29 Responses |

TABLE 23

2.4.5 DESCRIBE HOW CLEAR A PICTURE YOU HAVE OF WHAT YOU ARE EXPECTED TO DO IN CARRYING OUT THIS LINKING OF CURRICULUM GOALS AND PROGRAM OBJECTIVES. (CHECK LIST)

| Responses | # of teachers giving response |
|---|---|
| Very clear | 7 |
| Somewhat clear | 6 |
| Somewhat unclear | 1 |
| Very unclear | 1 |
| TOTAL | 15 |

Those who gave any response other than "very clear" were asked in what respects the linkage was unclear to them. Responses were:

| Responses | # of teachers giving response |
|---|---|
| Lack of time to think through/develop program | 2 |
| In computer area, teacher not technologically inclined | 2 |
| Large number of factors to be considered, for example student readiness. It is all left up to teacher | 2 |
| Family Life program: how much is to be discussed with the children? | 1 |
| Assumption is made that teacher has implemented, but there is no evaluation or checking done on this | 1 |
| Total | 8 |

TABLE 24

2.6 WHAT DO YOU THINK THE PRINCIPAL'S ACTIONS OR RESPONSE WOULD BE IF DISTRICT PRIORITIES WERE SET THAT WERE DIFFERENT FROM OR OPPOSED TO THE GOALS HE AND/OR THE STAFF HAD SET FOR THE SCHOOL?

| Responses | # of Teachers giving response | % of Responses |
|---|---|---|
| He would seek a compromise | 8 (2 administrators and 6 teachers) | 47.06 |
| He would go with divisional priorities | 6 teachers | 35.29 |
| He would go with school priorities | 2 teachers | 11.76 |
| Can't answer | 1 teacher | 5.88 |
| TOTALS | 17 | 99.99 |

TABLE 25

3.4.1 PLEASE DESCRIBE THE ACTUAL PROCESS OR STEPS FOLLOWED IN DECIDING TO IMPLEMENT THE COMPUTER PROGRAM.

| Responses | #/Type of respondent | % of Responses |
|---|---|---|
| Decision was already made by the principal. He really "pushed" computers. | 5 teachers | 29.41 |
| A number of computers were purchased by the principal whether or not staff wanted them. | 3 teachers | 17.64 |
| The principal sent teachers a copy of the curriculum. He highly encouraged teachers to become involved in implementing the curriculum. We made a decision as a staff be inserviced on it. | 2 teachers | 11.76 |
| The provincial curriculum came out. The division decided it should be implemented. The principal took his lead from the Division. | 2 teachers | 11.76 |
| The Division made funds available for computers. The principal was interested, so we got the computers first. Then one of our teachers was on the pilot program. He and the principal inserviced staff. | 2 teachers | 11.76 |
| Teachers were made aware that we had a curriculum. One teacher was on the pilot program. Use then spread into several classes. The pilot teacher gave an inservice. Teachers were given opportunity to go to workshops. | 1 (Principal) | 5.88 |
| Don't know/no response | 2 (Vice-Principal and 1 teacher) | 11.76 |
| TOTALS | 17 | 99.97 |

TABLE 26

3.6.5 DO YOU RECEIVE ENCOURAGEMENT FROM THE PRINCIPAL FOR SETTING GOALS FOR YOUR OWN GROWTH AND PROFESSIONAL DEVELOPMENT? IF YES, HOW DOES HE PROVIDE THAT ENCOURAGEMENT?

| Yes | No | Total # of responses |
|---|---|---|
| 8 | 7 | 15 |

| | # of responses | Response Categories |
|---|---|---|
| Positive | | |
| | 3 | I approach the principal to discuss my own goals. |
| | 3 | This is discussed at the time we're evaluated (once every 3 years). |
| | 1 | He makes us aware of professional development opportunities and helps us work toward our personal goals. |
| | 1 | It's done in a very limited way. There's room for providing a lot more encouragement. |
| Negative | | |
| | 3 | He doesn't have time/It's never been discussed. |
| | 2 | Teachers can approach him, but I don't do it. |
| | 2 | The principal recognizes us as experienced professionals who don't need that kind of help, so he doesn't interfere. |

TABLE 27

3.4.2 WHO WAS INVOLVED IN MAKING THE DECISION?

| Responses | #/Type of respondent | % of Responses |
|---|---|---|
| The principal | 11 (Principal, Vice-principal, and 9 teachers | 64.70 |
| The staff | 3 teachers | 17.64 |
| The division | 1 | 5.88 |
| The principal and 3 highly interested staff | 1 | 5.88 |
| Don't know | 1 | 5.88 |
| TOTALS | 17 | 99.98 |

TABLE 28

3.4.3 I UNDERSTAND IT WAS THE PRINCIPAL'S INTENTION FROM THE TIME OF INITIATING THE NEW CURRICULUM TO INVOLVE AS MANY AS POSSIBLE CLASSROOM TEACHERS IN THAT CURRICULUM. PLEASE DESCRIBE THE PROCESS OR STEPS USED TO ACCOMPLISH THAT INTENTION.

| Responses | #/Type of respondent |
|---|---|
| In-school professional development activities were provided for staff. | 15 (Principal, Vice-principal, 13 teachers |
| The principal worked with 3 teachers who were then used on resource people to go into classrooms and demonstrate curriculum/computer use. | 8 (Principal, Vice-principal, and 6 teachers) |
| A computer committee was formed | 7 teachers |
| The principal provided computers | 5 teachers |
| School participated in Department of Education pilot project | 4 (Principal and 3 teachers) |
| Principal gave staff the computer curriculum | 3 (Principal and 2 teachers) |
| Principal suggested/supported attendance at workshops outside the school | 3 (Principal and 2 teachers) |
| Principal provided a range of software (including cataloguing and recommendations for use) | 3 teachers |
| Principal and pilot teacher reported on pilot project | 2 teachers |
| Principal encouraged parents to help as computer volunteers | 1 teacher |
| Principal encouraged staff to come to him if interested in/needing help with computers | 1 teacher |
| Principal encouraged staff to take computers home for practice | 1 teacher |
| Don't know | 1 teacher |
| | 54 responses |

TABLE 29

3.3 WOULD YOU PLEASE DESCRIBE HOW THE PRINCIPAL WENT ABOUT ORGANIZING THIS STAFF TO IMPLEMENT THE COMPUTER AWARENESS CURRICULUM?

| Responses | # of Teachers |
|---|---|
| Led/provided inservices | 8 |
| Arranged for 3 resource people (individual responses referred to making arrangements with Central Office, freeing them from some teaching duties so that they could help others, getting them to run programs in the school). | 7 |
| Provided computers | 4 |
| Formed Computer Committee, which worked on awareness and was in charge of resources. | 3 |
| "Did" the CAC. He really pushed it. | 3 |
| Encouraged teachers | 3 |
| Suggested workshop attendance | 2 |
| Don't know | 2 |
| Developed plan to involve whole school | 1 |
| Discussed the curriculum at staff meetings. | 1 |
| Allowed teachers to take computer home on weekends. | 1 |
| Provided teachers with curriculum | 1 |
| Along with a few teachers went to courses and became specialized in computers. | 1 |
| TOTAL | 37 responses |

TABLE 30

WHAT ROLE DID YOU TAKE IN IMPLEMENTING THE COMPUTER PROGRAM?

Teachers answered this question as follows:

| Responses | # of Teachers |
|---|---|
| Volunteered for computer committee | 5 |
| Carried out the curriculum | 4 |
| Participated | 3 |
| Linked up with one resource person | 2 |
| Served as resource person | 2 |
| Attended inservices | 1 |
| Used computers in classroom | 1 |
| Took initiative to learn how to use computer | 1 |
| Promoted computers by taking instrumental role | 1 |
| Was a spectator; think computers are a minor thing | 1 |
| Used parent volunteers | 1 |
| Was not in the school at the time | 1 |
| TOTAL | 23 items |

Average 1.53 items per teacher

The principal cited 10 roles he took in regard to computers:
Getting equipment
Getting one teacher onto the Pilot Project team
Being an observer at the meetings of the Pilot Project team
Arranging an all-school inservice
Encouraging people to go to workshops outside the school
Making self available to help individuals
Making the decision to use extra teacher time for computers
Conducting inservices
Serving on divisional computer committee
Becoming/keeping informed

The Vice-principal cited one role:
"I gave some general support"

TABLE 31

WHAT WAS THE ROLE OF THE PRINCIPAL?

| Responses | #/Type Giving Response |
|---|---|
| Personal enthusiasm/leadership: (5 said he "pushed" or took too large a role) | 10 teachers |
| Arranged for 3 resource people to take a special role in the school | 9 (Vice-principal and 8 teachers) |
| Set up Computer Committee | 7 (Vice-principal and 6 teachers) |
| Made himself knowledgeable about computers and aware of resources, e.g., software | 6 (Vice-principal and 5 teachers |
| Provided computers | 4 teachers |
| Made himself available to help staff | 4 teachers |
| Organized and led inservice for staff | 2 teachers |
| Made computers a major part of his job the first year he was principal/made the decision that the school would go CAC | 2 teachers |
| Worked at division level for funding and developed and submitted a proposal | 1 (Vice-principal) |
| Made sure everyone had the curriculum | 1 teacher |
| Facilitated discussion | 1 teacher |
| Took out insurance to cover computers teachers took home | 1 teacher |
| Provided software | 1 teacher |
| Attended pilot meetings | 1 teachers |
| Provided opportunity for staff to attend computer conferences and courses such as Radio Shack | 1 teacher |
| Got parents to buy computers | 1 teacher |
| Don't know | 1 teacher |
| TOTAL RESPONSES | 53 |

TABLE 32

WHAT WAS THE ROLE OF THE REST OF STAFF?

| Responses | #/Type Giving Response |
|---|---|
| Became as involved as I wanted to be | 6 (Principal and 5 teachers) |
| Served on Computer Committee that reported to staff | 5 teachers |
| Worked with resource people timetabled into the classroom | 5 teachers |
| Participated in the all-staff inservice | 4 teachers |
| Attended mini-workshops on a voluntary basis | 1 teacher |
| Made logistics decisions | 1 teacher |
| Took computers home for practice | 1 teacher |
| Gave support and convinced others that this was good for them | 1 teacher |
| No response/don't know | 2 (Vice-principal) and 1 teacher) |
| TOTAL | 26 responses |

TABLE 33

3.4.4 DID ONE OR MORE TEACHERS WORK TOGETHER ON THE IMPLEMENTATION OF THE NEW PROGRAM? IF SO, IN WHAT WAY(S) DID THEY WORK TOGETHER? HOW DID THAT COME ABOUT?

All teachers responded positively (n=15)

| Responses | #/Type Giving Response |
|---|---|
| Yes (unspecified) | 8 |
| Yes, specified:<br><br>Special resource people were timetabled into other teachers' classrooms for the first year. They demonstrated to teachers and students at the same time. | 7 |
| The Computer Committee supported the implementation | 2 |
| Principal worked with a few teachers | 1 |
| One teacher gave noon-hour sessions | 1 (Principal) |
| Total number of responses | 19 |

TABLE 34

3.4.5 IF A STAFF MEMBER HAS EXPERTISE IN AN AREA OF THE NEW PROGRAM, HOW DOES THE PRINCIPAL VIEW THAT EXPERTISE? DOES HE USE IT IN ANY WAY? IF YES, HOW?

| Responses | # of Teachers |
|---|---|
| Staff expertise is viewed positively | 14 |
| No response | 1 |
| TOTAL | 15 |

| Ways in which such expertise was utilized include: | |
|---|---|
| Used as a school resource person | 7 responses |
| Put on inservice in this school | 5 responses |
| In other schools | 2 responses |
| Attend other inservices and bring information back to the school/share with others | 4 responses |
| Asked teacher to be pilot teacher | 2 responses |
| Depends on area of expertise | 1 response |
| TOTAL | 21 responses |

TABLE 35

3.4.6 PLEASE DESCRIBE THE PRINCIPAL'S INVOLVEMENT IN THE IMPLEMENTATION EFFORT. WHAT SPECIFIC ACTIONS, IF ANY, DID HE TAKE?

| Responses | # of Teachers Giving Response |
|---|---|
| Inservice arrangements | 12 |
| Provision of<br>resources<br>equipment<br>time for teachers | <br>10<br>10<br>4 |
| Development of expertise in new area | 8 |
| Arrangements for teacher meetings (Computer Committee) | 6 |
| Principal served on committee himself | 3 |
| Arrangements for teachers to work together (resource people) | 7 |
| Involvement in start-up activities | 4 |
| Previewed materials | 4 |
| Researched equipment | 2 |
| Made self available to anyone wanting help | 2 |
| Encouraged | 1 |
| Informed through staff meetings | 1 |
| Served on divisional committee | 1 |
| Got parents to provide computers | 1 |
| Don't know; not here at that time | 1 |
| TOTAL | 77 |

TABLE 36

3.6. PLEASE DESCRIBE HOW THE PROFESSIONAL DEVELOPMENT NEEDS OF TEACHERS IN THIS SCHOOL ARE HANDLED, IN PARTICULAR NEEDS RELATING TO THE NEW COMPUTER CURRICULUM YOU'RE IMPLEMENTING.

| Responses | # of Teachers Giving Response |
|---|---|
| A. Processes identified:<br>School process for determining inservice priorities | 8 |
| Processes the principal used to support computer uses | 3 |
| B. Activities identified:<br>Inservices<br>Supports for individual activity choice<br>Software acquisition/annotation | <br>11<br>3<br><br>2 |
| Total number of responses | 27 |

Further detail on the above responses:

The 11 responses naming inservice consisted of:

| Responses | # of Teachers Giving Response |
|---|---|
| Principal and computer committee arranged inservice<br>Whole-school inservice | 1<br>2 |
| One-day inservice<br>Mini-sessions in school<br>Divisional inservices<br>Divisional mini-sessions | 2<br>3<br>2<br>1 |
| TOTAL | 11 |

TABLE 36 (Cont'd)

Supports for individual P.D. identified were:

| Responses | # of Teachers Giving Response |
|---|---|
| Work with an individual advisor | 1 |
| Working for more education in a particular are of individual interest: approvals given and arrangements made | 1 |
| Proctor system | 1 |
| Individual who did not get enough out of a school inservice may go to another school's inservice | 1 |
| TOTAL | 4 |

Software acquisition/annotation:

| Responses | # of Teachers Giving Response |
|---|---|
| Software familiarity was needed so workshops were set up by the P.D. Committee | 1 |
| Some staff viewed programs and provided descriptive and grade level annotations | 1 |
| TOTAL | 2 |

TABLE 37

3.6.1 DO YOU DISCUSS AREAS OF PROFESSIONAL DEVELOPMENT OR CLASSROOM MANAGEMENT RELATING TO THE NEW CURRICULUM WITH THE PRINCIPAL?

| Responses | # of Teachers Giving Response |
|---|---|
| Yes | 10 |
| No | 5 |
| TOTAL | 15 |

IF "YES", PLEASE DESCRIBE HOW THIS HAPPENS.

| Responses | # of Teachers Giving Response |
|---|---|
| I go to the Principal's office and talk to him | 8 |
| It can be handled other ways as well, for example by approaching the Computer Committee. | 1 |
| I go to either the Principal or the Vice-principal | 1 |
| TOTAL | 10 |

TABLE 37 (cont'd)

UNDER WHAT CIRCUMSTANCES?

| Responses | # of Teachers Giving Response |
|---|---|
| Encountering problems with the computer (including difficulties working with the computer, running programs, concerns, classroom arrangements) | 6 |
| Complications implementing computers in the school (pilot teacher) | 1 |
| How to proceed with a certain part of the new curriculum | 1 |
| Extreme situation regarding a student's behaviour or academic progress | 2 |
| TOTAL | 10 |

WHAT KINDS OF ISSUES ARE DISCUSSED?

| Responses | # of Teachers Giving Response |
|---|---|
| Using a computer | 3 |
| Problems viewing/using particular programs | 3 |
| Shortage of computer time for the classroom | 1 |
| Requested attendance at a computer conference | 1 |
| How to introduce part of the computer curriculum response | 1 |
| Discussed the complications of trying to implement computers in the school (pilot teacher) | 1 |
| TOTAL | 10 |

TABLE 37 (cont'd)

WHAT ACTIONS HAVE BEEN TAKEN?

| Responses | # of Teachers Giving Response |
|---|---|
| Principal and Vice-principal met with parents and addressed the problem | 2 |
| Principal showed me how to do different things with the computer and how to run certain programs | 1 |
| 90% of the time he'll come to the classroom and show you. | 1 |
| Principal approved conference attendance. | 1 |
| Resource persons address problems. | 1 |
| Principal talks to me, comes in and does it for me, gets someone to help me, or teaches me. | 1 |
| Met Principal at school on Saturday and viewed materials. | 1 |
| Principal suggested I take a course. | 1 |
| We talked about the problem of enough time in the computers. There's not much you can do about having the Apple only twice a six-day cycle. | 1 |
| TOTAL | 10 |

TABLE 38

3.6.3 FROM YOUR OWN EXPERIENCE, DO YOU FEEL THAT THE PRINCIPAL WOULD GIVE SUPPORT TO YOUR TRYING SOMETHING NEW IN TEACHING THE NEW CURRICULUM, EVEN IF IT MIGHT NOT WORK? WHY DO YOU FEEL THIS WAY?

All teachers answered "yes" to the above question (n=15)

| Responses | # of Teachers Giving Response |
|---|---|
| Principal trusts teachers and their judgement as experienced teachers | 10 |
| Principal is supportive in his attitude | 5 |
| Principal has an open approach | 4 |
| Principal is very interested in computers and would support anything teachers wanted to try in that area. | 3 |
| Principal evinces an interest in, follows up on, and tells others about the new activities of teachers. | 2 |
| TOTAL | 24 |

TABLE 39

3.7 PLEASE DESCRIBE THE PROCESS OR STEPS FOLLOWED TO ALLOW TEACHERS TO DEVELOP THEIR SKILLS AND KNOWLEDGE IN THE NEW CURRICULULM AREA.

| Responses | #/Type of Person Giving response |
|---|---|
| An all-staff inservice day held | 9 (Principal and 8 teachers |
| Optional workshops offered | 8 |
| Proctor system set up. Resource people were freed to set up computer programs and helped teachers by working with them in and outside of classroom. | 6 (Principal, 5 teachers) |
| Teachers given the curriculum | 3 |
| Principal gave resource people release time so they could inform teachers about the best material for the school and get feedback on it. | 3 |
| Provision made for staff to go to inservices outside school. | 4 (Principal, vice-principal, 2 teachers) |
| Staff encouraged to share knowledge. | 2 |
| Principal gave clear top priority to the computer program. | 1 |
| Principal informed staff that advisors were available to them. | 1 |
| Discussion held with the principal by individual teachers. | 1 |
| One teacher participated in the pilot program | 1 |
| No response/don't know. | 3 |

| | |
|---|---|
| TOTAL | 42 |
| # of teacher responses | 38 |
| # of administrator responses | 4 |

TABLE 40

3.7 WHO WAS INVOLVED?

| Responses | #/Type of respondents |
|---|---|
| Principal and 3 resource people | 6 (Principal and 5 teachers) |
| The Computer Committee | 5 (Principal, Vice-principal and 3 teachers) |
| The Principal | 3 (Principal, Vice-principal, one teacher) |
| The P.D. Committee | 3 (Vice-principal and 2 teachers) |
| The staff and Principal | 2 teachers |
| Administrators, teachers, pilot teacher, and resource people. | 1 teacher |
| Pilot teacher | 1 teacher |
| Don't know/no response | 3 teachers |
| Total<br>Teacher responses<br>Administrator responses | 24<br>18<br>6 |

TABLE 41

3.7 HOW WOULD YOU DESCRIBE THEIR ROLES?

| Responses | #/Type of respondent |
|---|---|
| Resource people went out and developed their expertise, then came back and shared expertise with everyone else. They planned pilot project involvement, courses, and inservice | 8 (Principal and 7 teachers) |
| Staff took an active role. | 2 teachers |
| Computer Committee planned inservice. | 1 (Principal) |
| Resource people were available when we needed them. | 1 (teacher) |
| Roles were cooperative. | 1 (teacher) |
| Principal and pilot teacher were in charge. | 1 (teacher) |
| One resource person provided noon-hour sessions and troubleshooting. | 1 (Principal) |
| Pilot teacher carried on pilot program, set up timetable, and annotated software. | 1 (Principal) |
| Principal and pilot teacher set up library in terms of computer materials. | 1 (Principal) |
| Principal recommended courses people could take. | 1 (Vice-principal) |
| Teachers identified themselves to take inservices-Vice-principal | 1 (Vice-principal) |
| Don't know. | 1 (teacher) |

| | |
|---|---|
| Total responses for 12 categories | 20 responses |
| Total # of teacher responses | 13 |
| Total number of principal responses | 5 |
| Total number of vice-principal responses | 3 |

TABLE 42

3.7.2 PLEASE DESCRIBE THE ROLE THE PRINCIPAL TOOK (A) IN PROVIDING TEACHERS WITH KNOWLEDGE AND SKILLS:

| Responses | #/Type of respondent |
|---|---|
| Principal took an active role | 13 (Vice-principal and 12 teachers) |
| Principal was instrumental in getting key people involved. | 1 teacher |
| Principal developed own expertise. | 1 teacher |
| Principal provided assistance. | 1 teacher |
| TOTAL | 16 responses |

(B) IN REGARD TO HELPING TEACHERS BECOME FAMILIAR WITH THE TECHNOLOGY, RESOURCES, AND MATERIALS.

| Category | #/Type of respondent |
|---|---|
| Provided inservice. | 6 (Principal and 5 teachers) |
| Introduced staff to a wide range of programs | 5 (Principals and 4 teachers) |
| Provided noon-hour sessions. | 5 teachers |
| Showed staff how to use computers. | 4 (Principal and 3 teachers) |
| Instigated discussion. | 3 teachers |
| Motivated staff/made clear the importance he saw in this area. | 3 teachers |
| Worked with individual teachers/personally approached teachers and offered to show materials. | 4 teachers |
| Gave resource people time to review materials and help teachers. | 3 (Principal and 2 teachers) |
| Approved inservice/course attendance. | 2 teachers |
| Provided hardware and software. | 2 teachers |
| Developed/shared own expertise. | 1 teacher |

Total # of responses in 11 categories - 38
Total # of teacher resopnses - 34
Total # of principal responses - 4

TABLE 43

3.7.2 (c) IN REGARD TO RELEASE FROM TEACHING TIME; IF PROVISION WAS MADE FOR THIS, HOW WAS IT DONE?

| Responses | #/Type of respondent |
|---|---|
| Staff used teaching days to attend inservices. | 5 (Principal, Vice-principal, and 3 teachers) |
| We probably could have, but didn't, request it. | 3 teachers |
| Freed up a period a day of resource teachers' tie. | 2 teachers |
| No, there was no release time. | 2 teachers |
| No response. | 2 teachers |
| Don't know. | 3 teachers |
| Total # of responses | 17 |

TABLE 44

5. PLEASE DESCRIBE THE ACTUAL PROCESS OR STEPS FOLLOWED IN IMPLEMENTING THE COMPUTER AWARENESS CURRICULUM.

| Responses | #/Type of respondent |
|---|---|
| Resource people were used to implement the program. The following were specified:<br>- three resource people who worked with other teachers (2- the principal and one teacher)<br>- the pilot teacher (1 teacher)<br>- proctors (1 teacher) | 4 (the Principal and 3 teachers) |
| Inservice was used to introduce everyone to the curriculum | 2 (Principal and one teacher) |
| Teachers were familiarized with or "sold" on the use of computers. | 2 (Principal and one teacher) |
| The principal was interested and provided equipment and inservice. | 1 teacher |
| Meetings were held. | 1 teacher |
| Teachers were trusted to carry out the implementation on their own. | 1 teacher |
| No response | 7 (Vice-principal and 6 teachers |
| Don't know | 3 teachers |
| TOTAL | 22 |

TABLE 45

5.1 WHO WAS INVOLVED?

| Responses | #/Type of respondent |
|---|---|
| Principal | 8 (Principal and 7 teachers) |
| Teachers | 7 (Principal and 6 teachers) |
| Resource people. | 5 (Principal and 4 teachers) |
| Computer Committee | 3 (Principal and 2 teachers) |
| Pilot teacher | 1 (pilot teacher) |
| Computer Awareness Committee, Department of Education | 1 (pilot teacher) |
| Proctors | 1 (teacher) |
| School P.D. Committee | 1 (teacher) |
| Don't know | 7 (Vice-principal and 6 teachers) |
| TOTAL | 32 responses |

TABLE 46

5.2 PLEASE DESCRIBE THEIR ROLES

| Responses | #/Type of respondents |
|---|---|
| Principal | |
| Gave leadership/support | 5 teachers |
| Gave an inservice | 2 teachers |
| Set up the resource people | 1 (Principal) |
| Provided equipment | 1 teacher |
| TOTAL | 9 |
| Teachers | |
| Could get as involved as they wanted | 3 (Principal and two teachers) |
| Used computers in the classroom | 1 teacher |
| Gained knowledge | 1 teacher |
| TOTAL | 5 |
| Resource people | |
| Gave information/would sit down and teach you | 3 teachers |
| Came into classrooms | 2 (Principal and one teacher) |
| Helped teachers get kids started | 1 teacher |
| Went over the guide | 1 teacher |
| Trained proctors and parent volunteers | 1 teacher |
| TOTAL | 8 |
| Computer Committee | |
| Gave support | 1 teacher |
| Made decisions | 1 (Principal) |
| TOTAL | 2 |
| Computer Awareness Committee from the Department of Education | |
| Came out twice to see how things were going/elicited feedback on activities in the curriculum | 1 response (pilot teacher) |
| TOTAL | 1 |

TABLE 47

5.3 HOW WOULD YOU DESCRIBE YOUR ROLE?

Responses

A. The principal described his role as follows:

- providing computers
- getting one teacher on the pilot program
- being an observer in the pilot program myself
- arranging inservices
- encouraging people to go to courses and outside inservices
- making myself available to help people
- providing extra time for resource people to help teachers
- conducting inservices myself
- keeping myself well-read in the computer area
- serving on the Divisional committee
- making sure resource people were there to help people
- working heavily with the resource people myself.

TOTAL: 12 areas named.

B. Teachers and the Vice-principal responded as follows:

| | |
|---|---|
| I implemented the computer/curriculum | 4 teachers |
| I had no involvement | 3 (Vice-principal and 2 teachers) |
| I served as a resource person/pilot teacher | 3 teachers |
| I built up my knowledge of computers/CAC | 2 teachers |
| I was on the Computer Committee | 1 teacher |
| I helped select/develop material | 1 teacher |
| I refused to implement CAC | 1 teacher |
| No response | 2 teacher |
| I wasn't here then | 1 teacher |

Total number of responses 18 in 9 categories

TABLE 48

5.4 LOOKING AT DECISIONS CONCERNING IMPLEMENTATION, ARE THERE ANY DECISIONS YOU THINK THE PRINCIPAL OUGHT TO MAKE? IF YES, WHICH ONES?

| Responses | #/Type of respondents |
|---|---|
| A. Yes, there are decisions the principal ought to make | 8 (principal, vice-principal and 6 teachers) |
| Decisions regarding new curriculua | 4 teachers |
| They specified:<br>- decisions about new curricula<br>- should ensure any new curriculum is implemented<br>- if he has an interest, he can just forge ahead and push for it<br>- whether or not to implement a curriculum. If there's a goal or direction and he doesn't want discussion, there are certain things that must be said. | |
| Decisions regarding support for curricula, including:<br>- setting up resource people to help you in the classroom (teacher)<br>- which programs to devote personal time to (Vice-principal) | 2 (Vice-principal and one teacher) |
| The right to veto any decision of staff | 1 (Principal) |
| No specifics given | 1 teacher |
| B. No, the principal ought not to make decisions about curriculum implementation<br>3 teachers made the following points<br>- I don't think there are any [decisions] he should make himself<br>- his job is to encourage and support<br>- he can mandate but he can't force<br>2 teachers gave ambiguous responses:<br>- no, the principal ought not to make a decision to implement optional curricula, but yes, if the curriculum was compulsory.<br>- unless he's getting pressure from above | 6 teachers |
| C. No response | 3 teachers |
| TOTAL | 17 |

TABLE 49

5.4 ARE THERE ANY TEACHERS OUGHT TO MAKE? IF YES, WHICH ONES?

| Responses | #/Type of respondents |
|---|---|
| A. Yes | 16 (principal, vice-principal and 14 teachers) |
| Categories:<br>1. Teacher ought not to decide to implement School-wide. Their areas of decisioni-making are:<br>- on the commitment to do it<br>- whether or not to implement<br>- must base decisions on priorities for students<br>- whether or not they want to do it<br>- to implement or not | 5 teachers |
| 2. Teachers decide how/how quickly curricula would be implemented<br>Teachers decide:<br>- on individual initiative as to how far the program goes (vice-principal)<br>- which objectives in the curriculum were applicable to their students, and how to implement.<br>- use and how. They are going to decide how it's going to be used in their classroom and how much time they're going to spend on it.<br>- how quickly or slowly they get into the curriculum. | 4 (Vice-principal and 3 teachers) |
| 3. Teachers make the decision to implement.<br>Teachers:<br>- are involved in almost every decision in the school(Principal)<br>- should make the decision to implement (1 teacher)<br>- make the decision to implement the computer program (1 teacher) | 3 (Principal and 2 teachers) |
| 4. Responses that were off-topic | 4 teachers |
| B. No response | 1 teacher |
| TOTAL | 17 |

TABLE 50

5.5 IN IMPLEMENTING THE NEW CURRICULUM, DID THE PRINCIPAL MEET WITH ANY PROBLEMS IN TRYING TO INVOLVE TEACHERS THROUGHOUT THE SCHOOL?

| Responses | #/Type of respondents |
|---|---|
| Yes | 13 (Principal, Vice-principal, 11 teachers |
| Don't know | 2 teachers |
| No response | 2 teachers |
| TOTAL | 17 |

IF SO, WHAT WERE THOSE PROBLEMS?

| Responses | #/Type of respondent |
|---|---|
| Difficulty in getting people involved | 9 (Principal, Vice-princial, and 7 teachers |
| Computer program ranked low in some people's priorities. | 4 teachers |
| Logistics such as time allocations, moving equipment. | 3 teachers |
| Teachers' lack of knowledge. | 1 teacher |
| Lack of research about classroom, application of the technology. | 1 (pilot teacher) |
| TOTAL | 18 responses |

TABLE 51

5.6 PLEASE OUTLINE ANY OBSTACLES TO IMPLEMENTATION THAT YOU PERSONALLY EXPERIENCED OR THAT YOU OBSERVED OR HEARD ABOUT FROM OTHER STAFF.

| Responses | #/Type of respondents |
|---|---|
| Logistics (timetableing; scheduling of equipment during the first year; scheduling into classroom activities) | 8 |
| Teachers' lack of expertise. | 3 |
| Resistance of staff | 2 |
| There were no obstacles | 2 |
| The curriculum: too many low-level activities. | 1 |
| No response | 3 (Vice-principal and 2 teachers) |
| Don't know. | 1 |
| TOTAL | 20 responses |

TABLE 52

5.8 WHAT ACTIONS/BEHAVIOUR OF THE PRINCIPAL DO YOU CONSIDER WERE CRUCIAL TO THE IMPLEMENTATION EFFORT?

| Responses | #/Type of respondents |
|---|---|
| His interest/commitment/supportive stance | 11 teachers |
| His obtaining/freeing of funds and provision of computers and software | 6 (Vice-principal and 5 teachers) |
| He allowed days for inservice/provision of inservice for teachers | 6 teachers |
| Provision of his own time/constant discussion teachers | 2 teachers |
| Provision of resource people/their time | 2 (Vice-principal, 1 teacher) |
| His work on the Computer Committee. Thus he was aware of and was part of what was happening | 1 teacher |
| Provision of the curriculum to everyone. | 1 teacher |
| His great level of activity | 1 teacher |
| Provision of opportunities to take the computer home | 1 teacher |
| Don't know | 1 teacher |
| TOTAL | 32 responses |