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ABSTRACT

Because leadership theories and recent research into principals' roles have only limited validity, practical utility, and comprehensiveness, this study undertakes a description of effective principals' behaviors and a coherent explanation of them. Long-term goals, factors affecting student learning, strategies for goal achievement, and structures of decision-making were identified as the central arenas of principal effectiveness. Starting with the profiles of the ideal principal developed by two groups of school-based practitioners, researchers modified the resulting profiles through interviews with 90 principals, producing a four-stage growth profile of effectiveness. Within each of the four arenas of principal effectiveness (goals, factors, strategies, and decision making), researchers found four descending orders of roles, the highest being systematic problem-solving, followed by program management, humanitarianism, and administration. (JW)

PATTERNS OF GROWTH IN PRINCIPAL EFFECTIVENESS

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Principals play a critical role in school improvement, however such improvement is defined. Evidence supporting this assertion is considerable and mounting rapidly. This Chapter outlines what it is that effective principals do, offers an explanation for such behaviour and attempts to understand some of the reasons for its impact.

A number of reviews of literature regarding the principal's role have been completed recently (e.g., Barth and Deal, 1982; Greenfield, 1982; Leithwood, 1982; Leithwood and Montgomery, 1982; Persell, Cookson and Lyon, 1982; Yukl, 1982). The present chapter, while encompassing these syntheses, tries to move beyond them in two ways. First, it offers a theoretical explanation of principal functioning which, in comparison with other such explanations presently available aims to be more comprehensive; in our view, it also has greater potential for effectively addressing such practical problems as the development of principal training programs. Second, new insights about the role of the principal gleaned from our current research

program are added to the stock of knowledge available in recent literature reviews.

Several features central to our research method and subsequent results were significantly shaped by our attempt to address serious limitations within the two bodies of knowledge most obviously aimed at understanding the principal's role. These bodies of knowledge, leadership theory and recent research about what principals do, have limited validity, practical utility and comprehensiveness. These limitations and how we responded to them are examined first as a way of orienting the reader to what follows.

Validity. Limitations on the validity of current knowledge about the principal's role are a consequence of (a) the lack of grounding of such knowledge in empirical data, (b) its failure to account for the specific demands placed on the principal by school context and (c) flawed research designs

Rutherford, et al (1983) contend that recommendations from leadership theory "--- are not consistent from one authority to another nor are they supported in a consistent manner by research findings (p.22)"; this contention is consistent with earlier assessment - for example by Kerr and Jermier (1978).

The tenuous empirical support for even such a widely promoted and scrutinized view of leadership as Fiedler's (1967) contingency theory is illustrated by Crehan's (1983) recent meta-analysis. This problem is partly explained by the "grand" as opposed to "grounded" nature of such theory. Leadership theory is, for the most part, "grand" in the conventional sense that it is generated through some unknown, private process which is usually not systematically data based. Resulting conceptions of leadership become "a priori" explanations of leader behaviour in search of empirical support. The apparent lack of such support for theories generated using this method throws into question not only its products but the method itself. Alternatively, theoretical constructs used in this Chapter are "grounded"; they have been explicitly generated from data using methods largely open to scrutiny by others. We do introduce a "post hoc" theoretical explanation of the source of these constructs and their relationships, however, which is more speculative.

Leadership theory may also be considered "grand" in the less conventional sense of its aspirations for generalization. Characteristics of the situation (organization) in which the leader works, the tasks (or goals) the leader strives to accomplish and the leader's traits, behaviours or style are the primary components of most leadership theories. Rarely,

however, are there specified sets of values for these components. As applied across many organizations, variations within these components have been described in highly abstract terms (e.g., tasks are routine or novel, situations are favourable or unfavourable to accomplishment of the task). While there are undoubtedly features of leadership common across situations and tasks, these features seem likely to represent the "lowest common denominator" shared by leaders (including effective leaders). Identifying those features of situations and tasks unique to leaders in specific settings (like schools) seems a more likely way of accounting for how leaders distinguish themselves from their peers and of improving the validity of research results. Theoretical constructs used in this Chapter have been specifically formulated with the characteristics of schools and the tasks of curricular and instructional improvement in view.[2]

Finally, concerning validity, we note that support for causal claims about the effects of principal's behaviour have been generated largely from cross-sectional studies using survey, case study, ethnographic and pre-experimental research designs (Leithwood and Montgomery, 1982, p.314); individual studies, as a result, do not control for competing hypotheses

in the fashion associated with experimental and quasi experimental designs. This not only poses validity threats but also the likelihood of misapplication of results. Adopting the conventional response of social scientists to data based on such design features, our subsequent claims about effective principal behaviours are based on evidence generated through more than a single research design. When multiple studies employing different designs, each of which contains serious but different flaws, produce similar results, considerable confidence may be placed in those results, given reasonably competent treatment of other methodological components (Webb, et al, 1971). The extensive claims now being made about effective principal behaviour (and the accompanying flurry of principal training), based solely on data resulting from "effective schools" designs (Rowan, Dwyer, Bossert, 1982) illustrates the ease with which this limitation has been overlooked.[3]

Utility. While the validity of research knowledge is a necessary condition for it to be judged of high quality, it is not sufficient. For practical purposes, we suggest that such knowledge must also be (a) coherent, and (b) attainable by those who need it most - in this case principals. Present research knowledge about principals meets these utility criteria in only a modest way.

Partially as a reaction to the abstract and reductionist nature of much leadership theory, a considerable proportion of current research on the principal's role is largely descriptive and atheoretical in nature (e.g., Peterson, 1977-78; Blumberg & Greenfield, 1980; Morris et al, 1981). Such description, grounded in data about the work of principals, provides an important foundation for understanding the role, a foundation that has often been lacking in previous administrative research (Greenfield, 1982; Peterson, 1978). Nevertheless the quality and extent of descriptive data now available warrants efforts at theory development. Such theory aims to increase the utility (coherence) of these data by advancing present levels of understanding about what they mean and how they may be applied to practical problems.

The attainability by practising principals of at least the behaviours and skills attributed to their highly effective peers is limited by two characteristics of present research knowledge. First, recent research on principals has tended to describe both representative and highly effective functioning. It has not addressed the knowledge required to move from a representative state to highly effective forms of functioning. Our past work on school improvement (e.g., Leithwood, 1982; Leithwood and Montgomery, 1982; Leithwood & Robinson, 1979) has viewed such

change as an incremental process of growth from less to more desirable states, in both students and those responsible for facilitating such improvement, such as teachers and principals. The goals for school improvement are stable only in the short run; in the long run they evolve in response to gradually shifting social values, requiring gradual but continual change in school systems. Given such a view of the improvement process and assuming that highly effective behaviours needed to attain desired states are usually possessed by only a small proportion of role incumbents, it is not enough to just describe what highly effective principals do. It is equally important to identify the bases for growth in principal effectiveness. Therefore, the fundamental elements of the principal's functioning that are changing in this way need to be addressed. To do this we have developed a "profile" of growth in principal effectiveness, described in detail later.

Closely related to the importance attributed to identifying fundamental elements of growth in principal effectiveness is a second criterion of attainability; the attention to "alterable variables". The effects of such variables as personality traits, age and leadership "style" on principal effectiveness are not uninteresting; indeed such information may be quite useful for the selection of principals. We assume, nevertheless, that such

characteristics are relatively unresponsive, practically, to forms of intervention available. Accordingly, those aspects of behaviour that we have described are not only critical to principal effectiveness but, in our view, are acquirable by the majority of those already in the role, given reasonable amounts of assistance.

In addition to describing growth in alterable variables, our description of the effective principal encompasses a set of behaviours which a single individual is capable of mastering, not an unattainable ideal. Nevertheless, we assume that leadership behaviour required for school improvement may be provided by several or even many people in a school.[5]

Comprehensiveness. Limitations in the comprehensiveness of current knowledge about the principal's role are a consequence of (a) theoretical reductionism, and (b) a focus on a restricted range of principal responsibilities.

In addition to possessing limitations associated with grand theory, many extant conceptions of leadership suffer from excessive reductionism. Bass notes, for example, that "... to some degree, all research on leadership styles can be conceived as about democratic, [illegible]ocratic or laissez-faire leadership ..."

(quoted in Rutherford et al, 1983, page 29). Contingency theories (Fiedler's, 1967, for example) and Path-Goal theory (described by House, 1971) conceive leadership along only two primary dimensions: initiating structure and consideration. Such theories have emerged from attention to an unnecessarily restricted set of premises about human functioning. Contingency theories and Path-Goal theory are based on principles of human motivation; the Vroom-Yetton model (e.g., Vroom & Yetton, 1973) is based on variation in leader decision-making processes. Admittedly, no single leadership theory can hope to capture and explain more than a slice of reality, a sub-set of the leader's total functioning. But, particularly in view of recent developments in cognitive psychology, there seems to be no insurmountable barrier to offering, as we attempt in this Chapter, a more comprehensive account of principal functioning; an account which considers not only motivation and decision-making but other aspects of the leader's information processing, as well.

Another form of "reductionism" is evident in the generality or abstractness of descriptions of principal behaviour in much current principal research. We assume that a complete account of what effective principals do would include what Rowan et al (1982) refer to as "thick descriptions of principals' leadership behaviours (p.6)". Our version of such description has been outlined elsewhere (Leithwood and Montgomery, 1983(a)), however.

Another limitation on the comprehensiveness of current principal research concerns the choice of variables in such research. Single studies of principal behaviours and their consequences have focused on relatively narrow sets of dependent and mediating variables. Nevertheless, such studies, as a group, span a wide variety of such variables. Among dependent variables studied for example, are: "basic" math and language skills (Rowan, Bossert and Dwyer, 1983), high achievement test scores (Little, 1981), low income children matching achievement of middle class counterparts (Edmonds, 1981), combinations of achievement gains, absentee rates, delinquency and classroom behaviour (Rutter, et al, 1979), combinations of time-on-task, absenteeism, degree of friendliness, litter and vandalism (Stallings, 1982) and school "robustness" (Willower and Smedley, 1981). Climate, degree of implementation, job satisfaction and teacher decision-making exemplify the many mediating variables which have been studied. Some principal behaviours may be effective in enhancing the status of several or many of these variables; in the absence of relevant evidence, however, it seems prudent to assume that many principal behaviours, indentified by research as effective, are outcome - dependent (they facilitate achievement of some goals but not others). Real principals, on the other hand, are typically responsible for achieving a wide range of complex outcomes in their schools, although this responsibility may be blurred sometimes by short term priorities. As a result,

behaviours which are effective in a potentially outcome-dependent fashion need to be treated as a necessary but not sufficient account of what effective principals do. Our description of what effective principals do was based on evidence collected in relation to a wide range of social, intellectual and physical outcomes (dependent variables), some quite complex in nature: it is intended to be the description of a principal who is effective in facilitating growth across the student population toward an image of the educated person as a self-directed problem solver.[6]

METHOD

Space permits neither extensive description nor defense of the method in this Chapter. A brief synopsis is provided, however, to permit the reader a rough estimate of the status of the description of effective principals to follow.

Pursued in two distinct stages, this method had both qualitative and quantitative features: stage one was largely (but not exclusively) qualitative; stage two (not yet fully completed) used quantitative methods only. Smith (1983) contends that these two methodological orientations are based on different assumptions and may be incompatible. We are inclined to agree, and have used the methods to serve quite different purposes.

Stage One: Developing a Description and Explanation of The Role of the Principal

Description. The purpose of this stage was to develop an elaborate hypothesis about the nature of increasingly effective principal behaviour and a theoretical explanation of such behaviour. This hypothesis was to take the form of profile; a multi-dimensional, multi-staged, but nonetheless integrated description of the beliefs, intentions, knowledges, skills and actions relevant to a particular role. The reaons for adopting such a form for the description of principal behaviour were derived from our views regarding the school improvement process alluded to above. According to this view, "improvement" consists of growth within critical dimensions of behaviour from less to more desired states, desired states defined as those which facilitate achievement of the goals for improvement. How critical dimensions of principal behaviour were identified has been outlined elsewhere (Leithwood & Montgomery, 1982, pp.313-324).

Two research groups were established to develop the profile, one giving special attention to secondary and one to elementary school principals, yet each broadly representing the knowledges and experiences needed.[6] They consisted of reputationally effective principals, department heads, teachers, supervisory officers, and ourselves. These groups were required to develop a profile of growth in principal effectiveness over a 2½ year period in which they met as groups approximately ½ day per month

and worked singly or in pairs for an equivalent period between meetings. They had available, collected or were given three different types of information.

The composition of the groups themselves ensured a good deal of information (professional judgement) already possessed by their members relevant to their task. The value of this information was justified by the belief that reputationally effective professionals are generally competent and a much richer source of information about what is involved in being effective, in context, than researchers generally acknowledge. Indeed, complex human action may well defy capture by conventional quantitative methods, in part because observed behaviour has little meaning apart from the intentions giving rise to it and the significance attributed to it by others. Professional judgement, then, encompassed these estimates of intention and attribution, as well as "empirical facts". The first task addressed by the groups was to agree on a shared definition of principal effectiveness, one based on the images of the educated person alluded to in the previous section of the Chapter.

Information and experience of the groups was augmented through collection, by members of the groups following appropriate training, of original opinion data. These data resulted from relatively intensive interviews with "convenience" samples of

teachers, department heads and principals. Original drafts of the profile explicitly incorporated features of effective principals reported in these data.

Considered as important as collecting original data, the research groups systematically reviewed the results of other research. A small sample of original, recent research reports were read and discussed and two large scale reviews of the empirical literature, were prepared for the groups (Leithwood and Montgomery, 1982; Leithwood, 1982). (The literature reviews themselves as well as some of the particular literature reviewed is reflected in the Results section.)

Profiles of growth[5] in both elementary and secondary school principal effectiveness were produced by the groups. These profiles incorporated all three sets of data, following a procedure which we provided for synthesizing these data.

Explanation. The search for theoretical perspectives which would help give the descriptive data more coherence and, therefore, more utility was begun shortly after preparation of the first draft of the profile. This was a process of trying to match related clusters of behaviour described in the profile to extant theoretical positions from leadership theory, sociology

and psychology. Results of the first analysis undertaken for this pupose were highly eclectic and were reported in Leithwood and Stanley (1983). Subsequent sections of this paper report the result of the second analysis and discuss why we believe it to be more satisfactory than the first. Such discussion is intended not only to add coherence to the description of principal behaviour but also to point out how other orientations to leadership behaviour have been incorporated in our description and explanation.

Stage Two: Profile Validation

The concern in Stage Two was with two types of adequacy: the adequacy of the profile in capturing the range of actual behaviours among practising principals (content validity); and the extent to which stages of growth in the profile actually represent behaviours that differ in their effectiveness as hypothesized (predictive validity).

Content validity was examined with several types of data. Given extensive prior opportunities to examine the profile and seek clarification, groups of central board administrators, principals, vice-principals, teachers and department heads responded to a questionnaire concerning specific features of the

profile. In addition, intensive interviews were conducted with a sample of 90 principals about the nature of their work and how they respond to it. Content analysis of the interviews and item analysis of the questionnaires resulted in significant modifications to the initial profile.

Three methods were used to examine the predictive validity of the description of growth in principal effectiveness. Reputationally effective principals, consultants and central board administrators were asked to rank the relative effectiveness of principals based on audio-taped interviews with such principals without prior knowledge of our results. These independent rankings were then compared with our own rankings. A second method involved comparing rankings of effectiveness of the same set of principals based on our research with a rating system, developed by a private consulting group, emphasizing partially dissimilar sets of behaviours. Finally, a study is underway to compare the amount of selected change over the course of a one year period among teachers whose principals vary in effectiveness, as we have described it.

Our assumption in employing these procedures is that no single method of assessing predictive validity, including others we might have chosen, will produce indisputable results. The attempt, therefore, has been to accumulate modest support across several studies employing alterantive methods.[7]

RESULTS

Description and explanation of what it is that effective principals do constitute the results of our investigations and are provided in five sections. The first section provides a theoretical orientation to the role and identifies the major dimensions of behaviour which appear central to discriminating variations in principal effectiveness.

As pointed out already, our theoretical orientation was an outcome of our research not a starting point. It is presented first, nevertheless, because of the meaning it adds to the subsequent description of principal behaviour.

The remaining four sections correspond to the four major dimensions of the Profile (Goals, Factors, Strategies and Decision-Making) within which principal behaviour is described.

The Principal As Information Processor

The domain of individual human functioning is most directly addressed by psychological theory. It is reasonable to seek an explanation for what principals do from the perspective of such theory although this has not often been done. More precisely, however, the study was concerned with what principals do to improve schools. Few would contest the assertion that school

improvement is problematic: that irrespective of who is making the attempt, there are no ready solutions particularly when variations in school contexts and aspirations for complex outcomes are taken into account. A comprehensive conception of the principal's role in school improvement, therefore, is one which focuses narrowly on problem-solving behaviour but provides a relatively complete explanation of the structures and processes associated with such behaviour. Among the alternative psychological explanations of individual human functioning, information processing theory has been most explicitly developed to explain problem solving behaviour (see, for example, Newell & Simon, 1972; Chi, Glaser and Rees, 1982). Not surprisingly, this theory readily lends itself to post hoc explanations of principal behaviour which emerged through analyses of data using techniques designed for the development of grounded theory (Glaser & Strauss, 1967; Glaser, 1978); it provides a framework capable of subsuming most of the conceptual threads identified earlier in our work focused on selected elements of principal functioning. A relatively simple (skeletal) version of information processing theory proved to be sufficient for this purpose.

Contemporary accounts of information processing (e.g., Calfee, 1981; Robinson et al, in press; Norman & Lindsay, 1977) stress the goal-oriented nature of human functioning and describe mental

structures and processes associated with the resolution of problems standing in the way of goal achievement. Three structures dominate this description and are particularly relevant to explanations of principal functioning: the Executive, Short Term Memory (STM) and Long Term Memory (LTM). The Executive is the primary location of both short and long term goals (or aspirations). Once perceived, information from the external environment is screened or assessed by the Executive to determine its relevance for goal achievement. Information judged to be irrelevant is given no further attention; if judged to be potentially relevant, information is passed on to STM. Beyond the limited processing space of STM and its capacity to chunk together bits of information for treatment as single pieces, little is known about the functioning of STM. Its purpose, however, is to make sense of information passed on to it by the Executive. it does this by searching through the virtually unlimited storage space of LTM. Structually, this space consists of clusters or nodes of information, typically referred to as schema, many of which are associated in networks, sometimes organized hierarchically. Relatively undemanding forms of sense-making take place when, through simple matching processes, STM locates existing schema or schematic networks capable of largely assimilating new information. More demanding forms of sense-making, for instance problem solving, usually demand modification of existing schema or schematic networks to accommodate novel aspects of information.

There is considerable debate regarding the nature of schema. For present purposes two distinct types are distinguished in LTM "Knowledge schema" encompass facts, concepts, principles and personal theories as well as affective dispositions toward these elements. STM seeks out relevant schema of this type in its attempts to identify those elements or factors in the environment which influence goal achievement and to determine the conditions within each factor which must be met if goals are to be achieved. Having determined such conditions, action is required to meet them. Actions are guided by "procedural schema", structures which indicate how to act, the steps to take. Superordinate procedural schema, called Executive Strategies, exist to coordinate highly complex sets of actions.

Knowledge structures or schema become increasingly sophisticated as they are reorganized to incorporate additional pieces of related information and as the (sometimes hierarchical) associations among such schema increase. Such sophistication is a function of active attempts to make meaningful more and more new information. And as new information is subsumed by existing knowledge schema, the potential for meaningfully processing subsequent information increases. Actions become more skillful (effective) as procedural schema become potentially more effective in accomplishing their ends, as overt behaviours reflect more accurately the image of skilled performance captured by such schema

and as the use of procedural schema becomes less conscious and more automatic. High degrees of automaticity permit effective responses to environmental input without the need for processing such input through STM. This reduces response time and leaves the severely limited information processing space of STM available for handling other problems.

Information processing explanations of motivation begin with those internalized goals located in the Executive. People are normally motivated to engage in behaviours which they believe will contribute to goal achievement. The strength of one's motivation to act depends on the importance attached to the goal in question and one's judgement about its achievability; motivational strength also depends on one's judgement about how successful a particular behaviour will be in moving one toward goal achievement (Bandura, 1977).

From this theoretical perspective on individual human functioning, variations in principal effectiveness can be explained as differences in the way information is processed and problems are solved. Such differences centre around the content and functions performed by one or more of the mental structures that have been discussed: differences in the nature and clarity of Goals located in the Executive; differences in the existence and sophistication of knowledge schema located in LTM regarding Factors that bear on goal achievement; differences in the existence

and sophistication of procedural schema located in LTM regarding actions or Strategies that will alter the status of such factors; and, differences in the characteristics of the executive strategy used in Decision-Making about Goals, Factors and Strategies. This explanation of how differences in principals' effectiveness are to be accounted for provides theoretical reinforcement for the four broad dimensions of behaviour[8] identified as central to principal effectiveness through prior empirical inquiry (see Leithwood & Montgomery, 1982; Leithwood and Stanley, 1983).

The focus of school improvement, student outcomes, is a partial function of activities and characteristics (Factors) associated with the school, some of which can be influenced by the principal. The principal's Goals, which vary in their attention to student outcomes as well as the particular outcomes of interest, serve as a basis for helping the principal determine which Factors to attempt to influence. Having decided which Factors to influence and having determined the conditions aspired to within those Factors, the principal engages in an array of interventions (Strategies) to exercise such influence. Principals decisions about Goals, Factors and Strategies are determined by their direct experiences with and understandings about those dimensions of behaviours. Their decisions are also their perceptions about a relatively open-ended set of influences impinging

on them, such as curriculum and administrative policies, interventions by central board staff, community expectations and the like.[9]

The remainder of the Chapter describes what effective principals do and how growth in effectiveness may be conceived within the four critical dimensions of behaviour identified in our research and supported by the foregoing theoretical perspective.

Goals

Goals are the long term aspirations held by principals for work in their schools. No other dimension of principal behaviour is more consistently linked to school improvement by current empirical research than Goals (Leithwood and Montgomery, 1982, pages 320-322). There is, moreover, virtually no conflict within this research, including our own, regarding the types of goal-related behaviours which are effective. Such behaviours have been described in exceptionally abstract terms, however, terms which offer little explicit direction to practising principals; and few attempts have been made to offer a coherent explanation for the importance of this dimension of behaviour. A special concern for both limitations in current knowledge underlies our account of the Goal-related behaviours of effective principals.

First the role of Goals in the principal's functioning is discussed. This is followed by a description of three sub-dimensions of Goal-related behaviour (the sources, nature and uses of goals) found to exist among principals and, hence, reflected in the Goals dimension of the principal profile.

An information processing model of the principal locates Goals and their use in a mental structure called the Executive. Through the functioning of the Executive, personally valued goals (a) form the basis upon which those environmental inputs to which the principal attends are selected; (b) provide the purposes toward which the principal's actions in the school are directed; and, (c) are a central element in the principal's motivational structure - a stimulus for action. Goals held by the principal determine, in a significant way, how principals define their jobs in school and the terms used to represent the problems associated with school improvement. How problems are represented has been shown to explain some of the important differences between problem solving processes used by "experts" and "novices" (Chi, Glaser & Rees, 1982). These functions offer a plausible explanation for the importance of the sub-dimensions of principal Goal-related behaviour identified through our empirical inquiry.

Sources of Goals. Our research found that principals differ in terms of the sources from which their Goals are derived. As principals increase in their effectiveness, the sources from which their Goals are selected become increasingly public in origin and greater in number. Highly effective principals systematically select their goals[10] from those espoused for students by agencies of the state (e.g., State Education Dept. or Ministry of Education), the local school board and perceived needs of the community and students served by the school. Such behaviour increases the possibility that the Goals eventually internalized by the principal will be consistent with readily defensible expectations for school improvement; the adoption of such Goals by the principal significantly increases her attention to subsequent "environmental inputs" likely to promote school improvement. This is in sharp contrast with relatively ineffective principals whose Goals, because they are largely derived from perceptions of personal need, may not have any direct relationship to school improvement.

The nature of growth in effectiveness evident in this subdimension of the principal's Goal-related behaviour can be explained from at least three additional, quite different perspectives; ethics, organizational coupling and ego decentering.

If the major purpose of schools is to strive toward the achievement of publically endorsed goals for children, then increased effectiveness, in this sub-dimension of behaviour may be viewed as growth in the ethical defensibility of what principals are trying to accomplish. Questions concerning the Goals to pursue and their relative priority (value determination and value weighting) are not systematically addressed in some fields of social service. But in public education considerable policy activity has usually taken place to identify Goals considered valuable for students to achieve. Failure to explicitly consider these sources of Goals jeopardizes the value positions of many of those with a political right to shape the direction pursued by the schooling enterprise.

Organizational "coupling" refers to the degree of agreement about the Goals to be pursued and interdependence among roles in an organization in the performance of specific tasks to achieve those Goals (Weick, 1976); tightly coupled relationships are characterized by high degrees of coordination and interdependence. Considerable evidence suggests that relationships in schools are quite loosely coupled around the core tasks of curriculum development and instruction (e.g., Deal & Celotti, 1980; Leithwood & MacDonald, 1981). Data concerning variations in the sources of Goals considered by principals are consistent with such evidence

as it relates to moderately effective principals. Increasingly effective principals, on the other hand, pursue Goals quite consistent with the official goals of the school organization.

Finally, patterns of growth in the sources of Goals considered by principals are also to be understood in terms of ego "decentering" - movement from a concern for self to a concern for the task and, finally, to a concern for others. This is a pattern of personal growth, espoused by theories of developmental psychology, which has also been observed among teachers as they become more mature (Fuller, 1974) and as they approach the implementation of innovations in their classrooms (e.g., Hall and Loucks, 1977). Growth among principals viewed from any one of these four theoretical perspectives seems to provide a plausible explanation for increased effectiveness, although information processing is the most fundamental, in our view.

Nature of Goals. Particular Goals held by effective principals are substantially context dependent. While they cannot be described precisely, therefor, our research points to three features which appear common across Goals held by effective principals. One of these features concerns their ambitious nature. These principals want their schools to provide the best education possible for the students they serve; they beleive their students can achieve well academically and socially. In contrast,

relatively ineffective principals frequently believe that forces outside the school and limited student abilities preclude significant achievement. Their Goals, as a result, focus more on ensuring that administrative and logistical requirements are attended to; that the school runs "smoothly".

High level expectations conveyed through appropriate mediating behaviours, are consistently linked with higher levels of performance among both staff and students (for example, see Braun, 1976). The effect of such expectations may be explained by the information people process in formulating their own goals and the way such processing occurs. Staff and students, like principals, develop their goals not only, or even primarily, from purely internal sources (e.g., physiological needs) of information; external information bearing on their actions, particularly the expectations others are perceived to have for oneself, are crucial in the formulation of goals. The principal's expectations influence staff and student behaviour, therefore, to the extent that they influence the school-related goals which staff and students adopt as their own (the content of their Executives). More ambitious internalized goals foster levels of achievement more closely approximating the ceiling of one's potential than do less ambitious goals.

This information processing explanation of why ambitious principal Goals are associated with effective schools subsumes other quite similar but less complete accounts provided by role theory (e.g., Gross, et al, 1958) and expectancy theory (e.g., Braun, 1976). Sociology of knowledge, also suggests that not only one's goals but one's knowledge structures, as well, are "socially negotiated" (Berger & Luckman, 1967).

Effective principals' Goals are not only ambitious but they also apply to all students served by their schools. While individual differences are not in dispute, there are no "second class citizens", students which the schools of less effective principals treat with benign neglect. In this respect, principals at different levels of effectiveness may be viewed as basing their Goals on different value premises, effective principals adhering to something akin to the concept of "justice as fairness" (those with greatest need are allocated the largest share of resources). The Goals of less effective principals seem to be more consistent with the value of "maximizing the greatest good for the greatest number". Effective principals' Goals are based, as well, on a defensible philosophy of education; one characterized by explicit images of the educated person and a balanced focus on the development of knowledge, skill and affect. This philosophy is open to evolution over time in response to fundamental shifts in social values.

Uses of Goals. Internalized Goals serve as a focus for planning one's actions and as a source of criteria for deciding what those actions will be. Clear evidence suggests that as principals increase in their effectiveness, their espoused Goals for school improvement are more consistently and explicitly used for such planning and decision-making. Less effective principals sometimes espouse Goals very similar to those of their highly effective colleagues yet demonstrate little use of such Goals in decision-making. This discrepancy can be explained by lack of actual Goal internalization; school improvement Goals are understood, espoused to meet perceived external expectations but not personally adopted. Alternatively (and an explanation applying to more principals, in our view), less effective principals may personally adopt worthwhile school improvement Goals but lack the critical skills needed to use such goals effectively: for example, identification of sequences of shorter term Goals which must be met in order for the longer term Goals of school improvement to be achieved. Such "task analysis" skill has a direct bearing on motivation; people are more highly motivated to achieve goals which appear to be out of reach (e.g., Bandura, 1977). This skill also determines how well the principal is able to transform Goals into criteria for making decisions.

In addition to these personal uses for Goals, highly effective principals, in contrast with their less effective peers, seek out opportunities to clarify Goals with staff, students, parents and other relevant members of the school community. They strive toward consensus about these Goals and actively encourage the use of such Goals in departmental and divisional planning. Such behaviour can be explained by the principal's knowledge of human functioning and actions consistent with such knowledge. Highly effective principals appear to understand that school improvement goals will only direct the actions of staff, students and others to the extent that these people also adopt them as their own. Increases in principal effectiveness can be explained as increases in opportunities, provided by the principal, for all relevant others to agree upon and internalize approximately the same set of school improvement goals.

Factors

Goals have been conceived as long term professional aspirations held by principals for their work. Our own research, including reviews of the literature, suggest that realization of Goals depends, in substantial measure, on the ability of principals to identify those elements of the school, called Factors, which most account for what students learn. It also depends on determining those conditions within Factors which must pertain

if student learning is to improve. A previous review of literature (Leithwood and Montgomery, 1982, pp.322-325) and results of subsequent empirical inquiry point toward some 18 Factors which effective principals attempt to influence. Ten of these Factors affect students' classroom experiences: the match of teacher to student, program objectives, instructional behaviour, curriculum resources, content, student evaluation procedures, the use of time and its management, interpersonal relations, the physical environment and integration. Eight additional Factors help shape the students' non-classroom, school-wide experiences: human resources, material and physical resources, relationships with the community, extra-curricular and intramural activities, relationships with in-school and board staff, student behaviour in school and relationships among teachers and students.[11]

Variations in effectiveness within this dimension of behaviour are a function of the Factors the principal selects for attention, and both the source and nature of expectations held for these Factors. As indicated earlier, Factors can be understood in information processing terms as knowledge schema in the long term memory. Recent research on human problem solving (Chi, Glaser & Rees, 1982) attaches considerable importance to both the amount of knowledge and its hierarchical organization in

distinguishing problem-solving effectiveness. As compared with novices, experts possess extensive problem-relevant information organized in larger chunks or networks.

Factors of most concern. As principals increase in effectiveness, the Factors they attempt to influence increase in number and change in focus. To a predominant concern for Factors bearing on school appearance and the day-to-day operations of the school, especially outside the classroom (e.g., student behaviour, material and physical resources) is added, a concern for interpersonal Factors. These, in turn, are subsumed by attention to program-related Factors (e.g., program objectives, use of time and its management) and, at the most effective level, attention to all Factors. This pattern of growth toward attention to all Factors can be explained as a function, in part, of the principal's internalized Goals; the more closely linked to school improvement such Goals become, the greater the likelihood that Factors selected for attention will bear on school improvement - all other things being equal. But, it seems unlikely that all other things do remain equal. As principals become more effective, their behaviour suggests that the superordinate knowledge schema stored in long term memory for identifying school variables effecting student achievement encompasses more "valid" knowledge. In contrast with their less effective colleagues, highly

effective principals seem to possess a more comprehensive and more complex understanding of such causality.

Nature of expectations. As principals become more effective, the expectations they hold (the conditions they aspire to) within Factors also become more valid; there is increased likelihood that such expectations, when met, will actually result in school improvement or Goal achievement. This can be explained in terms of the sophistication of the subordinate schema representing each Factor. Additionally, expectations become increasingly detailed or concrete with increased principal effectiveness, presumably reflecting greater schematic elaboration and differentiation. Effective principals, for example, are better able to see which special characteristics of their schools must be accounted for in formulating expectations they hold for Factors and, specifically, how such characteristics influence those expectations in practice.

Sources of expectations. Information used in formulating expectations also varies with principal effectiveness. Although knowledge schema relevant to Factors are formed by all principals from many sources of information, increased effectiveness is associated with systematic as opposed to incidental or whimsical attention to non-personal sources. Least effective principals

base expectations on personal experiences, however formed. As principals become more effective, knowledge possessed by respected colleagues, and eventually research-based knowledge is actively sought out and accommodated in formulating expectations. Accommodation of these additional sources of information increases the sophistication or validity of principals' knowledge schema hence the nature of their expectations.

We are not aware of alternative theoretical explanations for what has been described within this dimension of principal behaviour. There is, however, a popular orientation to research in educational administration quite antithetical to the concept of effectiveness that we have described. This orientation focuses on lists of tasks for which principals are assumed to be responsible (budget, personnel, plant maintenance and the like). Data are collected from principals and others associated with the role about the proportion of time actually and ideally spent on each task (e.g., Pentacost, 1971; Lyon, 1981; Ogilvie, 1977; Ambramowitz et al, 1978; Krajewski, 1977). Inevitably, principals are found to be engaged in all such tasks and are rarely able, as a result, to apportion more than 15 to 25 percent of their time to the technical core of schooling - "instructional leadership". When defined as narrowly as the time spent in classroom observation and teacher supervision (e.g., Morris et al, 1981), principals' provision of such leadership is often considered to be

mythical (Johnston 1983) and the principal's role more accurately conceptualized as that of building administrator. Dismissing instructional leadership as a reasonable conception of the effective principal on this basis is unwarranted, however. First, such a restricted definition of instructional leadership is quite inconsistent with the meaning awarded the function by practicing principals and, as a consequence, a source of misunderstanding. Second, we are unaware of any evidence suggesting that even if such behaviour was possible that it would be effective in improving schools (it seems to be a straw man). To be certain, we are not suggesting that teacher classroom supervision involving observation of instruction is an unimportant aspect of principal behaviour. We are suggesting, rather, that effective principals do not avoid those other tasks (Factors) not directly linked to such supervision. They attend to them all as means for influencing the quality of student's school experiences (Dwyer et al, 1983). To do this requires principals to have a view of appropriate student experiences in school which transcends subject matter and classroom activity. It also requires principals to know how decisions can be made about such diverse matters as budget and discipline (conditions within Factors) so that they contribute toward school improvement.

Strategies

Having identified Factors associated with the achievement of valued goals, principals still must do something to influence selected Factors in directions they consider most likely to facilitate goal achievement. These actions or interventions we refer to as Strategies. The empirical research of others, as well as our own suggests that principals employ a repertoire of both "general purpose" (Leithwood and Mongomery, 1982, pp.325-331) and "Factor specific" strategies (Leithwood and Stanley, 1983, pp.25-36).

General purpose Strategies, as the label implies, may be useful in influencing the condition of almost any Factor, depending very much on circumstances in the school at the time action is taken. Such Strategies establish an appropriate background and climate within which more Factor-specific action must still be initiated if goal achievement is to be ensured. Among the seven general purpose Strategies that have been identified, four focus on keeping those involved in decision-making well informed and willing to participate: building and maintaining interpersonal relationships and motivating staff, providing staff with knowledge and skill, facilitating within-school communication, and facilitating communication between school and community. Two additional Strategies concern the

provision of adequate organizational resources for staff work: finding nonteaching time for staff and establishing procedures to handle routine matters. The final Strategy is using vested authority, and the purpose for its use varies significantly from ineffective to effective principals.

Factor-specific Strategies exercise a potentially significant influence on selected Factors given the establishment of appropriate background and climate. They include: program monitoring; goal setting, program planning and development; program implementation; staff supervision; providing support resources.

The cognitive bases for Strategies used by principals can be thought of as procedural schema contained in long term memory; they guide principals' actions and provide verbal and/or visual representations of what the principal believes to be skillful performance. As compared with novices, the procedural schema of expert problem solvers are relatively more explicit and detailed (Chi, Glaser & Rees, 1982). Differences in stragegic effectiveness can be explained by principals' criteria for choice of Strategies, the quality of Strategies used and their skill in use of Strategies.

Criteria for choice of Strategies. As the strategic effectiveness of principals increases, the number of Strategies

used over extended periods of time also increases. This is symptomatic of the shift in Factors of concern to the principal already described, a shift ultimately traced back to changes in Goals (from personal needs through interpersonal relations to the school program and finally to student achievement). Achieving Goals increasingly linked to school improvement eventually demands attention to all Factors. Effectively influencing all Factors requires the use of virtually all general purpose and Factor-specific Strategies. More to the point, however, Factors of concern to the principal are the criteria for choosing Strategies. Increased effectiveness in the criteria used by principals, therefore, can be explained, in part, by the number and nature of Factors the principal is attempting to influence - a function of the sophistication of relevant knowledge schema. In addition, effectiveness depends on principals' ability to identify Strategies that will impact on those aspects of background or climate and specific Factors in need of influence in their school circumstances. Knowledge schema also determine the levels of such ability.

Quality of Strategies. Principals may choose Strategies well matched to Factors in need of influence and still fail to exercise much influence. One source of such failure is the "quality" of Strategies used. Having decided, for example, that

it is important to improve communication between school and community, a principal may still do this poorly or well. The effect of his actions is partially a function of the specific procedures associated with this Strategy. Principals become more effective as their procedures better meet increasingly higher standards for the quality of procedural knowledge (Leithwood, 1982). That is, they are relatively cost effective in influencing Factors as desired by the principal, they are readily usable by others (many principal initiated strategies depend on other members of staff to complete), they are readily adaptable to changing school conditions, and they have an underlying structure that may be applied to other sets of actions (for example, a general problem solving process).

Procedures guiding Strategies employed by principals can be explained as the rules for skilled action in principals' procedural schema. Although frequently difficult to articulate, it is primarily these rules that are the subject of conscious attention during early stages of skill acquisition, during instruction or coaching and when performance is judged to be wanting. Variations in the effectiveness of principals' Stragegies can be explained by the adequacy with which rules embodied in the principals' procedural schema approximate highly skilled action, in terms of the (superordinate) general actions they suggest and highly refined in the distinctions they make

regarding associated specific (subordinate) actions. In the principal profile, differences in the quality of Strategies is particularly evident in Factor-specific Strategies such as program implementation. Very effective principals have a strategy for program implementation which has a sound overall direction as well as well-refined, detailed steps which are applicable to many programs. Ineffective principals either do not deal with implementation or have no systematic approach to the process.

Skill in use of Strategies. It is still possible, however, for a principal to select a Strategy potentially able to influence the Factor(s) of concern, possess high quality procedural knowledge about this Strategy and still not exercise much real influence on the Factor(s). This is the case when the principal's actual performance of the Strategy is significantly descrepant with the procedural schema guiding such performance; the principal lacks skill in use of the procedure. Effective principals are highly skilled in most of the General Purpose and Factor-Specific Strategies. As principals become highly skilled in their performance of a Strategy, less conscious effort is required of them. Performance, by becoming increasingly automatic, places smaller demands on the limited processing space of short term memory. This reduces the time required for principals to respond to some matters demanding their immediate

attention (e.g., a report of drug use in the boy's washroom), and allows them to simultaneously attend to other problems for which solutions are less well known (e.g., increasing collaborative curriculum planning across Departments in the school).

Decision-Making

Principals, we found, make decisions about Goals, Factors and Strategies. In practice, decision-making processes always depend upon and are inseparable from one or other of these contexts. There are, however, important similarities in the principal's approach to decision-making, independent of context. Such similarities can be explained in terms of the principal's "executive strategy" for making choices. In order to better explain characteristics we found among principals in our study, we draw on several concepts from decision theory, a specialized category of information processing theory. The decision-making of principals is described using six sub-dimensions of such behaviour. Three of these six sub-dimensions are used to outline how principals handle the relatively technical aspects of decision-making Components of decision-process. Three sub-dimensions are concerned with what principals do toward establishing a context which will support those technical aspects of their decision-making behaviour; Background to the decision process.

Behaviours described within the six sub-dimensions are based directly on empirical research - our own and others.

Decision process. Three aspects of the decision process have been identified to describe and differentiate principals' decision-making behaviours: degining and clarifying the decision problem; criteria used in decision-making; and, usé of information.

1. Defining and clarifying the decision problem: virtually all problems are defined in the context of the goals held by the principal. Increased effectiveness, in this respect is accounted for by changes in the goals internalized by the principal and residing in the Executive. All principals will interpret problems from their own personal perspective, a perspective shaped by their goals. When goals focus on students, decision problems will also be defined from the point of view of such goals. Problems are also defined by effective principals so that they are solvable (e.g., "too little time" is a problem for which there is no solution; "determining priorities for the use of time" permits a solution). Decreasingly effective principals experience greater difficulty in defining problems in ways that are solvable.

2. Criteria used in decision-making: criteria are derived from the principals' goals. Increased effectiveness depends on changes in goals and on knowing in some detail the characteristics of educational environments conducive to goal achievement; it also depends on being able to determine the implications of decisions not obviously about instruction or curriculum (e.g., budget, building maintenance) for educational goal achievement.

3. Use of information: the extent to which information relevant to decisions is systematically collected, used in decision-making and made readily available to staff determines the effectiveness of a principal in this sub-dimension. Effective principals collect such information routinely, using procedures which result in information meeting conventional standards of reliability and validity. This information is of two sorts: context-independent information derived, for example, from research; and, information about relevant features of the particular school context. Effective principals work toward ensuring that these features of their decision-making are eventually approximated by school staff, as well.

Increased effectiveness in these three sub-dimensions is accounted for by changes in principals' goals an in terms of the sophistication of the principals' knowledge schema relevant to Factors. Increasingly differentiated schema permit readier

identification of goal-supporting decision criteria. Such differentiation is stimulated by the need to make sense of newly collected information.

Background to decision process. Principal behaviours concerning the establishment of an appropriate context for decision-making are summed up as follows:

4. forms of decision-making: increased effectiveness involves the principal knowing and being skilled in the use of an increased range of different forms of decision-making and choosing the form best suited to the school setting and decision to be made. Increased effectiveness also means increasingly striving to create, if they do not exist, conditions within the school conducive to relatively decentralized, participatory forms of decision-making. Effective principals establish procedures for clarifying the values on which decisional criteria are based, the views of all stakeholders in the decision and the relative weight to be given such views. Value conflicts among stakeholders are addressed before decisions are made. Such issues go unrecognized by the least effective principal.

5. Stance toward decision-making: this sub-dimension describes the extent to which a principal sees decision problems as "opportunities" and the extent to which the principal anticipates decisions to be made. Increased effectiveness can be generally described as becoming more proactive, positive and systematic toward decision-making.

6. Monitoring decision-making: as principals more systematically collect information about the effectiveness of decision-making processes used in the school, they become more effective. Such information begins to include, for example, stakeholders' satisfaction; costs and progress toward goal achievement. Increased effectiveness also involves gradual refinement, as needed, of decision-making processes.

Behaviours within these three sub-dimensions can be accounted for by the sophistication of the principal's procedural schema (Forms), the motivational strength associated with their goals (Stance) and the development of increased skill in response to feedback about performance (Monitoring).

Propositions derived from theories of leadership and administration (about situational sensitivity, decisional participation and administration as a moral enterprise) offer alternative explanations for some of these decision behaviours. They also provide additional support for claims about their effectiveness. Contingency theories of leadership suggest that there are forms of leader intervention, the effectiveness of which depends primarily on the situation: characteristics (ability, personal traits, etc.) of those who are the object of the intervention; characteristics of the task to be performed

(e.g., routine or ambiguous, satisfying or tedious); and, characteristics of the organization (e.g., hierarchical relationships, degree of flexibility). As a consequence, most such theories propose that leaders ought to match their styles or behaviours to relevant characteristics of the situation (e.g., Vroom & Jago, 1978; House, 1971). Fiedler (1967), on the other hand, proposes that leaders change the situation to match their own styles or behaviours. Studies of elementary school principals and staff groups (Martin, Isherwood & Lavery, 1976; Williams & Hoy, 1971) have reported support for Fiedler's major propositions, although Crehan (1983) notes relatively weak overall support for the theory as tested in school settings. While not formally testing such theory, detailed case studies of effective principals report substantial variation in what they do presumably as a response, in part, to unique features of their schools (Dwyer, Lee, Rowan & Bossert, 1983; Blumberg & Greenfield, 1980; Hall, Rutherford & Griffin, 1980). Lipham, Dunstan and Rankin (1981) report changed teacher job satisfaction when principals are able to adapt their leadership behaviour, conceptualized as participative, supportive, facilitative and structural, to the situational demands of the school.

Contingency theory does not deny, however, that some forms of leader intervention are effective across almost all situations. One such form is associated with the involvement of staff in decisions which they consider to be important and to effect them.

High levels of staff participation in decision-making have been associated with high levels of curriculum implementation (Common, 1979) and teacher morale (Devlin, 1980-81; Chase, 1952; Blocker & Richardson, 1962-63; Belasco & Alluto, 1972; Stallings, 1982). Such participation has also been associated with positive teacher perceptions of effective principal leadership (Meyer & Van Hoose, 1981; Caldwell & Lutz, 1978), desirable student social behaviour (Stallings, 1982; Rutter, et al, 1979), high student achievement (Rutter et al, 1978; Stallings, 1982; Edmonds, 1981; Little, 1981) and student satisfaction with school (Cullers et al, 1973). Although some situation are not initially conducive to such participation, the effective principal gradually modifies the context in appropriate directions (e.g., altering the locus of responsiblity, improving staff communication skills).

A second, situation-independent aspect of effective principals' behaviour is explained by propositions concerning the role of values in administration (e.g., Hodgkinson, 1978; Greenfield, undated). Schools are designed for the achievement and expression of broadly held, though by no means uncontentious, social values. As leaders of such institutions, effective principals help ensure that their schools self consciously strive toward achieveing such values using means consistent with those values. In doing so, they are confronted with persistent ethical dilemmas concerning the values on which are based views of what

is desirable (Warwick and Kelman, 1976): How are such values to be determined? Whose values should be given what weight? How can value conflicts be resolved? While there is very little direct empirical evidence on this matter, effective principals, as a minimum, appear to be aware of these dilemmas and their importance. They attempt to reflect the values of legitimate stakeholders in the decisions that are made about both school goals and means for their achievement.

SUMMARY AND CONCLUSION

Describing what effective principals do and providing a coherent explanation of such behaviour has been the central purpose of this Chapter. The nature of this description and explanation has been formulated, in part, as a response to concerns about the validity, utility and comprehensiveness of alternate accounts based on leadership theory and recent research on the principal's role. Our description and explanation, as a whole, was grounded in empirical data, tried to be sensitive to the full array of outcomes for which principals are responsible, and the school contexts in which they work. The description incorporated data reflecting research using multiple designs. Additionally, we have tried to paint not only a meaningful picture of principals' behaviour but one which focuses on aspects of that behaviour which are amenable to change.

Goals, Factors, Strategies and Decision-Making were identified as dimensions of behaviour central to an account of principal effectiveness and differences in effectiveness. The importance of these dimensions and an explanation of behaviour within each were explained through the use of information processing theory; each dimension was linked to the functions of cognitive structures considered central to an explanation of how people think. Other plausible theoretical accounts of principal behaviour were also discussed as a way of helping link our research to the relevant research of others and to demonstrate the relative merits of information processing theory for our purposes.

The behaviours of exceptionally effective principals were highlighted by contrasting them with the behaviours of their less effective peers. However, such bipolar distinctions are inadequate. Effectiveness is, in reality, and therefore, is better described as a continuum with at least several distinctive stages between the effective and ineffective extremes. For this reason, the major product of our own research has been a four staged profile of growth in effectiveness within each of the four dimensions of behaviour that have been discussed - Goals, Factors, Strategies and Decision-Making.

The highest level in the profile captures behaviour of principals which we have referred to throughout the Chapter as

"systematic problem solvers". As Figure 1 indicates, however, our research suggested three identifiable stages of growth (or levels of effectiveness) leading up to the systematic problem-solver - the Administrator, the Humanitarian and the Program Manager. The "Administrator" stage, while describing the behaviour of many practising principals, is furthest from what has been described as effective throughout the Chapter. Principals at this level are preoccupied with "running a smooth ship" as an end in its own right. The "Humanitarian" retains a concern for running a smooth ship but strongly believes that developing effective interpersonal relations in the school, particularly among staff, is his or her most important Goal. Program Managers, on the other hand, see interpersonal relationships as one important means to achieving student outcomes which they value. Implementing district or commercial programs and guidelines effectively is a central procedure for goal achievement. Systematic problem solvers, as we have seen, begin with a legitimate, comprehensive set of goals for students, and seek out the most effective means for their achievement. This sometimes means coming into conflict with district administrators if the principal believes that he or she must seriously explore better program alternatives than the one being proposed by such people, in order to appropriately address the needs of students in their school.

The profile summarized in Figure 1 has a useful role to play in three areas of practice. It serves as a framework for identifying the in-service training needs of principals and for planning such in-service. The profile, in addition, addresses two components perhaps most critical to the validity of principal performance appraisal systems and yet traditionally poorly addressed: the dimensions and sub-dimensions in the profile serve as a core set of criteria for judging merit; the levels provide explicit standards against which behaviours in each dimension may be judged. Finally, the profile seems to offer promise in helping select and hire principals for the same reasons it is useful in their performance appraisal.

Use of an information processing theory to explain principal behaviour alerted us to the paucity of data available about how principals think about their jobs and decide what to do. Only two empirical studies could be located which attended to this issue; both were concerned about the basis for principal decision-making (Leithwood & Montgomery 1983(b); Isherwood & Tallboy, 1979). This paucity is in sharp contrast with the growth in research on how teachers think (see, for example, Shavelson & Stern, 1982). Indeed, this area of research, virtually untouched 12 years ago, has already taken its place beside the more conventional process-product orientation to research on teaching as a highly productive way to understand instruction, how it is planned, implemented and

changed. We suggest that a comparable investment in research about principals' thought processes represents a promising avenue for further inquiry.

	DIMENSIONS OF BEHAVIOUR			
	DECISION-MAKING	GOALS	FACTORS	STRATEGIES
	. skilled in use of multiple forms; matches form to setting and works toward high levels of participation . decision processes oriented toward goals of education, based on information from personal, prof. & Research sources . anticipates, initiates and monitors decision processes	. selected from multiple public sources . highly ambitious for all students . transformed into short term goals for planning . used to actively increase consistency among staff in directions they pursue	. attempts to influence all Factors bearing on achievement . expectations within Factors are specific . expectations derived from research and professional judgement	. uses a wide variety of strategies . criteria for choice include Goals, Factors, context and perceived obstacles . makes extensive use of Factor-Specific strategies to achieve goals.
	. skilled in use of several forms; selects form based on urgency and desire to involve staff . decision processes oritneted toward school's program based on information from personal and professional sources . anticipates most decisions and monitors decision process regularly	. selected from several sources, some of which are public . particular focus on exceptional students . encourages staff to use goals for planning . conveys goals when requested or as particular need arises	. attempts to influence Factors bearing on the school program . expectations within Factors are specific . expectations are derived from personal and staff experiences and occasionally from research	. relies on limited number of established, well tested strategies . choice based on student needs, (especially special students), desire to be fair and consistent, concern to manage time effectively . uses Factor Specific Strategies which are derived largely from personal experience and system direction
	. uses primarily participatory forms of decision-making based on a strong motivation to involve staff so they will be happy . tends to be proactive concerning decisions affecting school climate but largely reactive in all other areas unless required to act	. derived from belief in the importance of interpersonal relations to effective school = happy school . goals may be ambitious but be limited in focus . goals not systematically used for planning . conveys goals to others if requested	. attempts to influence Factors bearing on interpersonal relations . expectations within Factors ambitious but vague . expectations are mostly derived from personal experiences and beliefs	. chooses strategies which focus on interpersonal relationships . choice based on view of good school environment, view of own responsibilities and desire to make jobs of staff easier . makes little use of systematic Factor-Specific strategies
	. uses primarily autocratic forms of decision-making . decision processes oriented toward smooth school admin. based on personal sources of information . decision processes are reactive inconsistent and rarely monitored	. derived from personal needs . focus on school admin. rather than students . pursuit of instructional goals considered to be responsibility of staff not principal . conveys goals to others if requested	. attempts to influence Factors bearing on school appearance and day-to-day operations (mostly non-classroom Factors) . expectations within Factors are vague . expectations are derived from personal experiences	. chooses strategies based on personal need to maintain administrative control and remain uninvolved in classroom decisions . strategies mostly limited to use of vested authority and assist. staff with routine tasks . attends to Factor-Specific Strategies in a superficial way if required to do so

Figure 1 --- A summary of the profile of growth in principal effectiveness

NOTES

[1]The Ontario Institute for Studies in Education, Curriculum Department, 252 Bloor Street West, Toronto, Ontario, Canada.

[2]Rutherford et al (1983) point out that a very small proportion of leadership research has actually been conducted in school settings.

[3]In their methodological critique of studies of effective principals, Rowan, Dwyer and Bossert (1982) also note the failure to control for interactions between principal behaviour and school context, the abstract nature of behaviours captured by measures of what principals do and problems of validity and reliability in measures of school effectiveness.

[4]Rutherford et al's (1983) analysis of the relative unchangability of leader style is instructive on this point.

[5]That this is often the case is suggested in the work of Hord et al (1983) and in attempts to distinguish "substitutes for leadership" (Kerr and Jermier, 1978; Pitner, 1983) - organizational conditions which preclude the requirement of action by those with vested authority, such as principals.

[6]This image, part of the Ontario Ministry of Education's policies is specified in some detail in the Ministry's Issues and Directions (1980). Selected components of it appear in most curriculum guidelines published since that time.

[7]Space does not permit a report of data resulting from these profile validation studies. It has been reported separately (Leithwood & Montgomery, 1984). Each study did result in modest support for the pattern of growth in effectiveness outlined in the Profile.

[8]The term "behaviour", as is likely clear by this point, is used not only in reference to overt observable actions taken by principals ; it is also used to describe covert states and mental processes.

[9]Leithwood and Montgomery (1983) identify an array of such influences. They also present evidence suggesting that while some influences are attended to by all principals, others vary in their strength depending on the principal's level of effectiveness.

[10]The process of selecting goals from these sources is described by our later outline of the principal's decision-making behaviour.

[11]These Factors and effective conditions within each are discussed in some detail in Leithwood and Montgomery (1982, pp.322-325).

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