Improving Principals' Performance Through Training in the Decision Sciences

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Research identifies decision-making approaches that can help principals be more effective.

Recently there has been renewed interest in the decision, or cognitive, style construct in explaining individual differences in decision-making behavior. Carl Jung's Theory of Psychological Types has provided the basis for the most enduring conception of decision style (Read and others, 1970). According to Jung, individuals differ in perception and judgment. Perception is the process of becoming aware of things, people, or ideas. Judgment is the process of reaching conclusions about what has been perceived. People are equipped with two distinct ways of perceiving. In sensing, we become aware of things directly through our five senses. *Sensing* individuals prefer to tackle well-defined problems, have the patience for routine work, prefer concrete facts, are present oriented, and are extremely good with details. Perception outside of the five senses is labeled intuition. *Intuitive* individuals see problems as a gestalt, prefer to tackle ill-defined problems, are creative, dislike routine, and are future oriented (Mitroff, Barabba, and Kilmann, 1977).

People are also equipped with two distinct ways of judging: thinking and feeling. *Thinking* individuals evaluate on the basis of logical processes aimed at impersonal findings, are deliberate, and are more interested in projects than in their effect on people. *Feeling* individ-

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uals evaluate on the basis of feelings and values, relate well to subordinates, and are good listeners.

Since, according to Jung, perception and judgment are independent dimensions, four decision styles emerge—sensing/thinking, sensing/feeling, intuition/thinking, and intuition/feeling. According to Jung, there is no one best decision style, each has its own strengths and weaknesses.

Jung's decision style typology was assessed by the Myers-Briggs Type Indicator (1967). I chose the Myers-Briggs Indicator because it is a reliable instrument (Lake and others, 1973) and because the perception and evaluation dimensions of Jung's typology are directly related to Mintzberg's (1973) decisional and non-decisional roles, which were used in this study. Finally, the Myers-Briggs Indicator has a well-developed theoretical base and is well documented. (See also the article by Carolyn Mamchur on Pages 76–83 of this issue.)

Classifying Leader Behavior

Mintzberg's ten managerial roles (see Figure 1) were used to classify principals' behavior on the job. An advantage of Mintzberg's roles is that the informational and decisional roles are similar to Jung's perception and judgment dimensions. Also Mintzberg's roles were empirically derived from observing senior executives on the job and have been used in previous research on school administrators (Sullivan, 1982; Willis, 1980).

Job effectiveness was measured by asking the school superintendent and his two assistants to independently rank order the principals along a two-level, unidimensional job effectiveness scale. Any differences (and these were minimal) in rank orderings were resolved in face-to-face discussions between the evaluators, after which a consensus was reached. I chose the superintendent's office to do the evaluation as they would be more likely to use consistent rating criteria than would teachers from over 20 different schools within the district.

The Study

Thirty-nine principals and assistant principals of a suburban school district participated in the study. The research paradigm for this study was based on

"Mintzberg's roles were derived from observing senior executives on the job and have been used in previous research on school administrators."

Figure 1. Mintzberg's Leader Roles

Roles	Descriptions
Interpersonal	
Figurehead	Obliged to perform routine duties of a legal, ceremonial, or social nature.
Leader	Train and motivate subordinates to perform up to their potential.
Liaison	Maintain network of outside contacts who provide information that cannot be obtained from traditional sources such as the school's management information system.
Informational	
Monitor	Seeks both written and oral information to understand his internal organization and the external environment.
Disseminator	Transmits information, facts, and values from outsiders or subordinates to other members of the organization.
Spokesman	Transmits internal information, facts, and values to outsiders. Speaks on behalf of his organization or discipline.
Decisional	
Entrepreneur	Searches for opportunities to initiate "improvement projects". Is a proactive manager.
Disturbance Handler	Solves crisis problems—problems that are characterized as deviations from expectations. Is a reactive manager.
Resource Allocator	Makes (or approves of) significant decisions and allocates necessary resources to accomplish improvement projects.
Negotiator	Represents organization at major negotiations within and outside the organization.

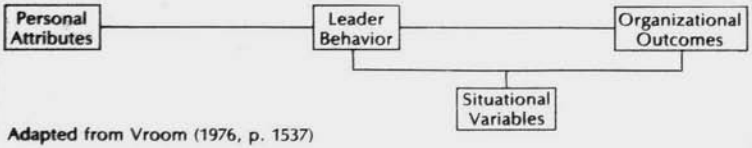
Adapted from Mintzberg (1973, pp. 92–94)

Vroom's (1976) model of leadership behavior (see Figure 2). After the principals had completed the Myers-Briggs Type Indicator, I led a 90-minute discussion on Mintzberg's ten managerial subroles to familiarize the principals with the specific activities that constituted each role and how these might apply to their jobs. They were then asked to complete a work activity sampling questionnaire. First, the principals were asked to rank the amount of time they spent in the interpersonal, informational, and decisional roles (see Figure 1) in the previous academic semester. Then, the principals distributed a total of 100 points, which represented the proportion of time spent in each of three major roles. The same ordering and point distribution procedures were then used for the subcategories of the three major roles.

Because self-reporting procedures are often suspect, assistant principals and principals who had worked closely with each other were asked to complete a second questionnaire on each other's leader behaviors. This provided a method to validate the data.

I chose the self-reporting questionnaire because it was efficient and because observation for 39 principals was not practical. The diary approach was eliminated because once the principals left the workshop, they might be unable or unwilling to participate in the study.

Figure 2. Research Model for Leadership Studies



Adapted from Vroom (1976, p. 1537)

Figure 3. Percentage Average Time Spent in the Three Major Roles (N = 27) Pairs)

	Interpersonal	Informational	Decisional
Self-Evaluation of Time Distribution of Activities	22.96%	27.59%	49.45%
Peers' Evaluation of Time Distribution of Activities	31.00%	27.33%	41.67%

Figure 4. Breakdown of Administrators' Decision Styles

Decision Style	Frequency
Sensing/Thinking	17
Sensing/Feeling	13
Intuition/Thinking	3
Intuition/Feeling	1

Decision Styles of the Principals Studied

Figure 3 provides a summary of the principals' evaluation of their own activities and their colleagues' evaluations. The intercorrelation in the time spent in the three major roles for the 27 pairs of subjects who had worked together was .56.

Although 39 principals participated in the study, I obtained complete data on only 34 subjects. The distribution of decision styles is reported in Figure 4. The data indicate that the school administrators tended to be mostly *sensing managers*. This is not surprising since administrators either self-select themselves into roles based upon their preference for the job's characteristics or are selected because their personality profiles are similar to those of senior management. Further, S-type (sensing) individuals tend to gravitate to administrative jobs, especially at the middle management levels, in bureaucratic organizations (Myers and Briggs, 1967). Finally, since no meaningful inferences could be made on the small sample of the N-type (intuitive) managers, they were eliminated from further analysis.

Eight of the 17 ST-principals (sensing/thinking) and eight of the 13 SF-principals (sensing/feeling) were rated as highly effective. The difference in percentages is not statistically meaningful given the small sample sizes involved. Even though both ST and SF principals can be effective, will the time they allocate to Mintzberg's roles differ, and will it have any effect on their job performance?

Decision Styles: Implications for Training

The findings of the study indicate that ST (but not SF) school administrators who allocate more time for the decisional roles were rated as more effective.

Further, both ST and SF administrators who allocate more time to the entrepreneurial subrole (a proactive manager) were rated as more effective. The study suggests that inservice training programs ought to focus on improving the ability of administrators to perform Mintzberg's entrepreneurial and disturbance handler subroles.

As the content of the two subroles differ dramatically, training programs must be uniquely designed to improve the performance of the administrator in each role.

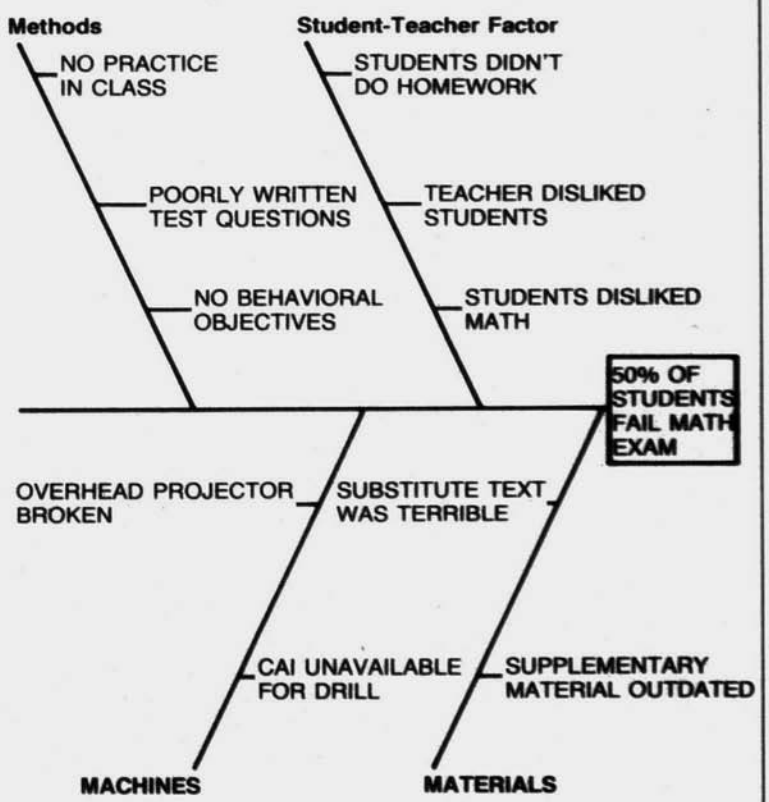
Administrator-as-Disturbance Handler. The major challenge facing the administrator-as-disturbance handler is in dealing with crisis-operating problems that arise almost daily. The principal must quickly size up the situation and solve the problem. While most principals use intuitive processes, the Decision Sciences' field offers several structural approaches that complement an administrator's intuition. These include the *Fishbone Diagram* and the *Kepner and Tregoe technique*.

Fishbone diagrams help develop a picture of the potential causes of a problem. The principal begins with a definition of the problem and then generates a set of potential causes for it. The technique takes its name from the fact that the causes are shown as the small and large bones in the diagram (see Figure 5).

Any number of major causes is permissible although three or four are quite common. Once major causes have been specified through individual or group brainstorming, three to six potential subcauses, or subbones, can be generated. A principal should draw upon his own experience and those of his subordinates in generating the subcause categories. Next the principal should evaluate each of the subcauses to determine whether it is the cause of the problem. There is no magic in the fishbone diagram; it merely identifies causes and effects, thereby increasing the chance of solving a problem.

A major difficulty with solving never-before-seen operating problems is that we often confuse symptoms for causes and take corrective action that doesn't work. When that happens it is necessary to diagnose the problem explicitly to

Figure 5. Fishbone Diagram



Adopted from Chase (p. 20, 1983)

determine the problem (not its cause, for at this point we have not yet diagnosed the problem), where it occurred, when it occurred, the scope of the problem, and who was involved. This is the essence of the Kepner and Tregoe method (see Figure 6). The first two columns of the worksheet are used to diagnose the problem, and the last two columns are used to solve the problem. The following rules are helpful in using the worksheet:

1. Avoid the use of adjectives in the first two columns of the worksheet. The goal of diagnosis is clarity, and clarity cannot be achieved through the use of adjectives in a problem diagnosis.

2. Avoid words that are ambiguous or may convey double meaning.

3. Place as much emphasis on completing the *is not* column as on the *is* column. The success of the solution phase depends on finding distinctions and changes that could account for the *is* and *is not* entries. If there are no *is not* entries, you will not be able to complete columns three and four and will not solve the problem.

4. Postpone working on the last two columns until you have completed the first two columns. The major reason why we fail to solve unfamiliar operating problems is that we jump to solutions without first understanding the true nature of the problem (diagnosis). Don't be solution-minded; be problem-minded!

The key to improving the administrator in the disturbance handler role is in changing his or her problem-solving tactics. "Shooting from the hip" works well when the problem encountered are familiar. When that is not the case you need to augment your intuition. The educational leadership field is just beginning to recognize the value of structural approaches in augmenting a principal's intuitive problem-solving abilities (Chase, 1983).

Figure 6. Kepner and Tregoe Worksheet

	IS	IS NOT	CHANGES	DISTINCTIONS
WHAT	50% of 8th graders failed common final	other academic and or behavioral problems normal 10% failure level	revised common final in spring	
WHEN	final exam June 1983	before June 1983	new math text tried dropped behavioral objectives in math	in March 1983 book selection discretion policy initiated
WHERE	at our school	other schools in county or system	new principal	significant percentage transfers into 8th grade
SCOPE	all four 8th grade	one or two of the 8th grade sections		common outline used by all 8th graders
WHO	8th grade students	other grades in the school		behavioral objectives eliminated in grade eight instruction

Administrator-as-Entrepreneur. As entrepreneur, the principal focuses his or her effort in planning, designing, and implementing curricular or administrative "improvement projects" for the school and not in fighting forest fires (the disturbance handler role). The problem-solving techniques discussed earlier simply will not work. However, the field of Decision Science offers some planning tools. Among these are the *Situation Audit* and the *Nominal Group* procedure.

A WOTS UP analysis is one easy way to get a Situation Audit started. WOTS UP is an acronym for the weaknesses, opportunities, threats, and strengths facing the organization. A principal and his or her staff are organized into teams and asked to complete a WOTS UP planning form (see Figure 7).

How does one determine whether or not a school possesses a strength or a weakness, or is facing a threat? Comparisons can be made against other schools within the district or against other school districts. Personal opinion or normative judgments can also be used. Achieving a consensus is not easy. Nevertheless, planning is crucial because the primary benefit is often the process itself and not a plan. Planning is more a way of thinking than it is a set of procedures.

The WOTS UP procedure often utilizes groups. The most commonly used group structure available to the principal is the *interacting group*. In an interacting group there is normally a prepared agenda, but the group members interact with each other in an unstructured manner. Members speak when

they have something to say or the opportunity to say it; otherwise they remain quiet. Often the discussion is monopolized by one or two individuals, and the number of different ideas generated may be limited. Groups need not operate this way.

The *Nominal Group Technique*, developed by Andrew Van De Ven and Andre Delbecq (1974), can overcome most of the shortcomings of the interacting group structure. In its simplest form, a nominal group operates in the following manner:

1. Each person *independently* and *silently* generates weaknesses, threats, and so on, as called for in the Situation Audit. This can even be done before the meeting.
2. Each member then presents his or her ideas along with a defense. No critical comments are allowed at this time. The round-robin presentations continue until all members have presented their ideas in the form of an opening argument.
3. The members now discuss the threats and opportunities presented by the group members. Criticism is permitted as the group now operates as an interacting group.
4. If agreement cannot be reached, each member *silently* and *independently* votes on the importance of each of the issues that was generated within the Situation Audit.

Why are nominal groups more effective than interacting groups? In a recent study on group structures, I observed a number of interacting and nominal groups as they attempted to arrive at a judgment involving probability estimation (Brightman and others, 1983). In interacting groups, one dominant member would suggest an estimate and this would be in turn discussed by the other members. Even if they disagreed and forced a change in the estimate, the new estimate didn't vary appreciably from the original estimate. It was as if the original estimate acted as an anchor from which little movement was possible.

In the nominal groups (about four people per group), four different estimates were placed on the table. In all the nominal groups the estimates varied dramatically. This then led to a discussion of each person's reasons for his or her estimates. Further, it seemed that some members were shocked that others in their group could independently arrive at a significantly different initial estimate from their own. The discussions were lively and very much problem centered—evaluating the logic and worth of each other's round-robin arguments. Interacting groups were reactive and dominant-person centered—one estimate and three reactions. Nominal groups were proactive and task centered—four estimates and problem-centered argumentation. If the nominal groups are so much more effective in a relatively simple probability estimation task, they should be, and are, extremely effective within a planning process environment (Mason and Mitroff, 1981).

Figure 7. WOTS UP Planning Form

Opportunity _____ _____ **Strengths**
Threat _____ _____ **Weaknesses**

Statement of Planning Issue (*WOTS*) Identified:

The Observation Is Based Upon What Evidence:

The Action We Should Take Is:

More Research Needed

The above techniques are only a small sample of what the field of Decision Sciences has to offer the principal as disturbance handler and entrepreneur. The present research study has demonstrated the importance of these two roles in distinguishing effective and ineffective principals. Additional training in the Decision Sciences should prove to be productive. □

Recommended Reading List

General Readings:

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Administrator-as-Disturbance Handler

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