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SEARCH STRATEGIES USED FOR EDUCATIONAL
DECISION MAKING BY VOCATIONAL TEACHERS

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

by

Wilma Beavers Gillespie, B.S.Ed., M.Ed.

* * * * * *

The Ohio State University

1973

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The investigator wishes to gratefully and humbly acknowledge the contributions of certain individuals whose wisdom and helpfulness have been essential to the conduct of this study:

To Dr. Robert E. Taylor, the investigator's major adviser, whose counsel and supportive efforts made the study a reality;

To Dr. Joel H. Magigos, the co-adviser for the study and the mentor for the candidate, whose continuous and wise direction and personal interest were invaluable in the development and completion of the study;

To Dr. J. Robert Warmbroad, the candidate's main professor, who provided excellent research courses and counsel, and advice which served to focus efforts and to maximize analysis methodology and operations;

To Dr. Roy A. Larmee, a member of the candidate's committee, who was always available for friendly and helpful consultation;

To the teachers in West Virginia who were the participants in this study;

To the teachers at Warren High School, Vincent, Ohio, who assisted in the pilot test of the instrument;

To Jean Laubenfels and Richard Miguel who served on the panel of judges;
To Roy Butler and other fellow graduate students at The Ohio State University whose cooperative endeavors were manifested through helpful criticism;

To Joanne Littell who typed the manuscript;

Of all the assistance, encouragement, and sustaining inspiration, the most enduring and valuable was that of the investigator's husband, William Thomas, and three sons, Thomas, Carter, and John Newton. The latter because they shared the pride and the sufferance of concomitant university enrollments with their mother and the former because, in his wisdom, he had the courage and fortitude to allow it to happen.
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CHAPTER I

THE PROBLEM AND ITS SETTING

Introduction

Social forces in contemporary society are lending an urgency to an emerging discipline of knowledge utilization.\(^1\) Increased public attention and support accompanied by progress in the refinement of the methodology of discovery have increased the output of scientific knowledge. The growing expectation on the part of government leaders, industrial executives and the general public that scientific knowledge should be useful\(^2\) has focused attention on the demand that the information pertaining to that knowledge should be organized in such a way that it can be provided, obtained, and utilized by policy makers in judging the alternatives for making decisions.\(^3\)


\(^2\)Ibid., p. 1-1.

To meet the information needs arising from developments in education and the lack of an organized and efficient dissemination system reporting these developments, The Educational Resources Information Center (ERIC) was established by the United States Office of Education.\(^4\) The ERIC Clearinghouse on Vocational and Technical Education at The Center for Vocational and Technical Education is linked to a national information system, The Educational Resources Information Center, and to state-level agencies which provide for dissemination to teachers.

The objectives of the information dissemination system are based on the needs arising from the significant problems of important user groups. The mission of the system is to serve identified groups which have common interests and common information needs. The primary role of the information dissemination system is to provide information for decision making.\(^5\)

---


Statement of the Problem

Target audiences for the information dissemination system for vocational and technical education have been identified. The major professional problem areas and the information-seeking practices used by state supervisors and teacher educators, state directors, and local administrators have been determined and described. Classroom teachers, who comprise the largest target audience, are important potential users of the information dissemination system.

One of the functional roles of an information system is to determine the degree of penetration of useful information through administrative


level gatekeepers\textsuperscript{10} to the user groups below them. When an educational
decision needs to be made, the teacher, who is often at the lower level of
the hierarchy, is at a decision point\textsuperscript{11} and will need to identify and examine
the alternatives.

White, in his research on the theory of decision, has reported
Ackoff as saying:

\begin{quote}
. . . There appears to exist in practice two
different types of problematic situations. In one,
the alternatives are given and the decision maker
is required to make a suitable choice. In the other,
part of the problem involves the search for
alternatives.\textsuperscript{12}
\end{quote}

Decision making as it relates to administrative leadership behavior has
been reported by Culbertson, Jacobson and Reller\textsuperscript{13} and by Andrew and

\footnotesize
\begin{itemize}
\item \textsuperscript{10}Boyd Fillmore Robinson, Jr., "Gatekeepers in Vocational
Education," Unpublished Master's Thesis (College Park, Maryland:
The University of Maryland, 1971).
\item \textsuperscript{11}H. B. Gelatt, Barbara Varenhorst and Richard Carey, Deciding:
A Leader's Guide (New York: College Entrance Examination Board, 1972),
p. 3.
\item \textsuperscript{12}Russell L. Ackoff, Scientific Method: Optimizing Applied Research
Decisions (New York: John Wiley and Sons, 1962), reported in D. J. White,
\item \textsuperscript{13}Jack A. Culbertson, Paul B. Jacobson and Theodore L. Reller,
Administrative Leadership: A Casebook (Englewood Cliffs, New Jersey:
\end{itemize}
Moir and for supervisory personnel by Rice and Meckley. However, there is a paucity of information about the classroom teacher who is increasingly being asked to make decisions and to meet role expectations as a teacher about ways of meeting educational needs, solving educational problems and seizing educational opportunities.

The teacher, as an educational practitioner in the 1970's, is provided alternatives and options in increasing numbers through educational products and research and development outputs. More options make the task of deciding among them more difficult. More values are in conflict, more variables influencing teachers in their decision making have to be considered and a greater amount of information is needed. The problems of choice are further intensified in the United States whose culture is typified by pluralistic values, many of which are paradoxical and some of which are contradictory.


This study, like prior research studies on the utilization of information by vocational and technical educators, used the problem-solving phase model of diffusion and change as described by Havelock. However, this study sought to identify the characteristics of micro-component behavior rather than focusing on the efforts of receivers in solving their own needs for information. Through analysis of questions directed to a client system, it attempted to pinpoint the "diagnosis which precedes solution identification" and hovered over the point between the stages of decision-making between "awareness" and "design" (between the point at which the decision maker was aware that an educational decision needed to be made and the stage of designing the decision situation). Further, it attempted to capture a point in time between the hesitancy and knowledge phases of decision.

The general purpose of this study was to describe the relationship between the strategy used by vocational teachers for determining action

---

alternatives and the (1) classification of the educational decisions,
(2) kind of educational decisions, (3) type of educational decisions,
and (4) teachers' perceptions of six selected variables.

Need for the Study

The quantity of information which is available to users in many
fields is exceeding the capacities of individuals to evaluate its usefulness. 21 During recent years, major research developments have been
made in providing educational information services to continuously growing
user populations. Information about individuals and groups who use the
dissemination system for vocational and technical education was identified
by Maglso who recommended that:

Information products should be designed for the
intended users with special attention to the functional
role of the target audience and the intended use of
the product. 22

The utilization of information for problem-solving by selected
personnel in vocational and technical education has been reported.
McCranen investigated the factors influencing the utilization of information
for problem-solving by state supervisory and teacher education personnel.


One of the additional areas of research needed which was reported in this study was "...research of the same type to identify factors influencing the utilization of information by other target audiences in vocational and technical education." 23

The critical problems of state directors of vocational and technical education and the information sources which they utilized were reported by McCracken. 24 Another target audience in vocational and technical education is the local administrator. A study which identified the critical problems of local administrators of vocational education and the information sources which they utilized has been reported by McCracken and Gillespie. In both of these studies the investigators suggested an additional area of research:

... To determine the critical information needs and factors influencing the utilization of information by teachers of vocational and technical education. 25

User studies in vocational and technical education are needed in order to determine how information services to target groups can be improved. Studies have shown that the largest segment of the target

---


audience of information systems is at the local level, that this audience is largely dependent upon local sources for information and that this audience is neither aware of nor using information products. One important target group in vocational education is the classroom teacher who must utilize information for making educational decisions.

Objectives of the Study

The following specific objectives were developed from the review of theory and related research. A matrix of objectives and variables is shown as Figure 1.

1. To describe the relationship between the frequency with which vocational teachers used the strategy of search or non-search for determining action alternatives and the frequency with which they made educational decisions which were classified as strategic and tactical.

2. For both classifications of decisions (strategic and tactical):

   2.1. To identify the relationship between the use of

---

the strategy of search or non-search for
determining action alternatives and the kind
of educational decisions made by vocational
teachers (qualitative, quantitative or action).

2.2. To identify the relationship between the use
of the search or non-search strategy for
determining action alternatives and the type
of educational decisions made by vocational
teachers (planning, implementing, structuring
or recycling).

2.3. To identify the relationship between the use
of strategy of search or non-search for
determining action alternatives and the
teachers' perceptions of six selected variables:
(1) amount of information grasp needed to
make the educational decisions; (2) degree
of change which the decision would precipitate;
(3) degree of conflict manifested in the decision;
(4) degree of ambiguity in the decision;
(5) degree of urgency of time; and (6) level
of satisfaction.
FIGURE 1
MATRIX OF OBJECTIVES AND VARIABLES

1. To describe the relationship between the frequency with which vocational teachers use the strategy of search or non-search for determining action alternatives and the frequency with which they make educational decisions which are classified (according to the perceived degree of risk) as strategic and tactical.

   | Dependent variable. Strategy of search or non-search for determining action alternatives. |
   | Independent variable. Classification of the degree of risk (strategic or tactical). |

2. For both classifications of the degree of risk—strategic and tactical:

   2.1 To identify the relationship between the use of the strategy of search or non-search for determining action alternatives and the kind of educational decisions made by vocational teachers (qualitative, quantitative and action).

   | Dependent variable. Strategy of search or non-search for determining action alternatives. |
   | Independent variable. Kind of educational decisions (qualitative, quantitative, and action). |

   2.2 To identify the relationship between the use of the strategy of search or non-search for determining action alternatives and the type of educational decisions made by vocational teachers (planning, implementing, structuring and recycling).

   | Dependent variable. Strategy of search or non-search for determining action alternatives. |
   | Independent variable. Type of educational decisions (planning, implementing, structuring, and recycling). |

   2.3 To identify the relationship between the use of the strategy of search or non-search for determining action alternatives and the teachers' perceptions of six selected variables: (1) amount of information grasp needed to make the educational decision; (2) degree of change which the decision will precipitate; (3) degree of conflict manifested in the decision; (4) degree of ambiguity in the decision; (5) level of urgency of time; and (6) level of satisfaction.

   | Dependent variable. Strategy of search or non-search for determining action alternatives. |
   | Independent variables: |
   | Amount of information grasp needed to make the educational decision. |
   | Degree of change which the decision will precipitate. |
   | Degree of conflict manifested in the decision. |
   | Degree of ambiguity in the decision. |
   | Degree of urgency of time. |
   | Level of satisfaction. |
Variables

The variables in this study were identified through review of theory and related research. The dependent variable was the use of the strategy for determining action alternatives by vocational teachers. It was quantified by obtaining a frequency count for each of the two categories: (1) for the strategy designated as non-search in which the alternatives or options were given and the decision maker made a choice; and (2) for the strategy designated as search in which the decision maker indicated a need to search for alternatives or options.

Nine independent variables were identified for the study. They were:

I. Classification of educational decisions which the vocational teachers made. Dettre has described educational decisions which are made by teachers as either tactical or strategic. The characteristics which describe a tactical decision were derived from this description. A tactical decision had immediate feedback of consequences; had proximity of consequences; produced consequences likely to involve the teachers; and was perceived as having a high amount of

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risks, conflicts, or controversies in relation to the self-concept in the role of the teacher or to the structure of the organization. The rationale for building the risk concept into the definition was that the decision maker could best judge the degree of risk, threat to self-concept, or threat to the structure of the system.

A strategic decision had future-time orientation for feedback from the decision; had consequences far removed from the immediate situation; produced consequences which would not involve the teacher directly; and was perceived as having a low amount of risk, conflict or controversy in relation to the self-concept in the role of the teacher or to the structure of the organization.

The characteristics for tactical and strategic decisions were listed at opposite ends of a continuum and the decision maker was asked to rate (at designated places on the continuum) the characteristics as they related to the decision which must be made. These characteristics were: (1) accomplishment of goals, (2) closeness of consequences to the immediate situation, (3) feedback from consequences, (4) likelihood that consequences would involve the teacher directly, and
(5) amount of risk, conflict or controversy in relation to the self-concept in the role of the teacher or to the organizational structure of the school. The designated places along the continuum had arbitrary values assigned to them. These characteristic ratings were used for applying decision rules and computing a sum for the classification of educational decisions (strategic or tactical).

II. Three kinds of educational decisions. Descriptions of these were listed as qualitative (those which involve a determination of the worth of a given state of affairs), action (those which involve selection from two or more courses of action that are open), and quantitative (those which involve time, numbers, or other measures of quantity).

III. Four types of educational decisions. Descriptions of these were listed for planning (specify changes that are needed; arise from a lack of agreement between what the program is intended to be and what it actually is), structuring (specify means to achieve the ends established as a result of planning decisions; involve such variables as method, content, organization, personnel, schedule,
facilities, and budget, implementing (involve carrying out an action plan; arise from the initial and continuing knowledge of the procedural specifications and the actual procedure), and recycling (involve determining relationship between attainments and objectives and whether to continue, terminate, evolve, or modify an activity).

The three foregoing independent variables were quantified by obtaining a frequency count. The other independent variables were the decision makers’ perceptions of:

IV. The amount of information grasp\textsuperscript{28} needed to make the educational decision.

The amount of information grasp variable by implication required the decision maker to indicate the usefulness of the information and the intellectual capacity to use that information.

V. The degree of ambiguity\textsuperscript{29} in the educational decision.

VI. The degree of change which was precipitated by the educational decision.\textsuperscript{30}

\textsuperscript{28} Stufflebeam et al., Op. Cit., p. 66.


\textsuperscript{30} Stufflebeam et al., Op. Cit., p. 65.
The degree of change, by definition, had the decision maker identify (a) whether or not the decision involved variables considered to be important, and (b) whether or not these variables were manipulated in important ways.

VII. The degree of manifest conflict (of interests, roles, expectations) in the educational decision. 31

VIII. The degree of urgency of time in relation to the educational decision. 32

IX. The level of satisfaction with the educational decision. 33

These six variables were quantified by ratings on a Likert-type scale ranging from "high" to "low." Arbitrary values were assigned to each point on the continuum. A schematic of the variables is presented as Figure 2.

**Definition of Terms**

In order to provide clarification of certain terminology used in this study, the following definitions were formulated:

- **Action alternatives** were defined as two or more different actions

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FIGURE 2
A SCHEMATIC OF STUDY VARIABLES
that may be taken in response to some situation requiring action.

Ambivalence of search was defined as the perceptions by the
decision maker of the advocate and resistive factors which serve to
focus selection action during the processing of information as the decision
maker interacts with the decision setting.

Classification of decisions was defined as the classes used to
distinguish tactical and strategic decisions according to the characteristics
of accomplishment of goals, closeness of consequences, feedback from
consequences, likelihood that the consequences of the decision would involve
the teacher directly, and the amount of risk, conflict, or controversy in the
role of the teacher or to the organizational structure of the school.

Decision was the act of deciding or of choosing an alternative.

A decision moment was defined as the processing of input informa-
tion by the decision maker during interaction with the decision setting at
a particular point in time between the awareness and design stages of the
process of decision making and the hesitancy and knowledges phases of
decision. The outcome of this process results in search behaviors.

Decision setting was defined as the set of environmental circum-
stances governing analysis and choice including the ways alternatives
and/or criteria are generated, the predictability of consequences for
different options and the costs and risks associated with various action
alternatives.
Dissemination was viewed as a transfer of messages by various media between resource systems and users.

Kinds of decision referred to the term used to describe choice when the decision maker determines the worth of a given state of affairs (qualitative decision), selects from two or more courses of action that are open (action decision) or chooses an alternative involving time, numbers or other measures of quantity.

Information was defined as interpretative and descriptive data about entities and their relationships in terms of some purpose; to be used as a means of reducing uncertainty.

Input information was defined as the decision maker's internal resources (home-grown and home-stored knowledge), factors influencing the acceptance of useful information, and the psychological, cognitive and experiential awareness which is used to filter empirical data, subjective judgment, and perceptions of situational events.

Linkage was a series of two-way interaction processes of media or messages which connect user systems with various resource systems including basic and applied research, development, and practice.

Strategic decisions referred to the classification of decisions which: had future-time orientation for feedback from the decision; had consequences which were far removed from the immediate situation; produced consequences which would not involve the teacher directly; and were perceived
as having a low amount of risk, conflict or controversy in relation to the self-concept in the role of the teacher or to the structure of the organizations.

**Strategy** was defined as the technique of integrating the interpretation of information input, the valuing process, uncertainty, and decidability by the decision maker which terminated in a preference or choice in the process of deciding.

**Suboptimization** was defined as a process occurring during the interaction of input information with the decision setting that results in the decision maker delimiting the problem for coping.

**Tactical decisions** referred to that classification of decisions which had immediate feedback of consequences of the decisions; had proximity of consequences; produced consequences likely to directly involve the teacher; and were perceived as having a high amount of risk, conflict, or controversy in relation to the self-concept in the role of the teacher or to the structure of the organization.

**Type of decision** referred to the term used to describe choice by the decision-maker which could be planning (specifies changes that are needed), structuring (specifies means to achieve the ends established as a result of planning decisions), implementing (involves carrying out an action plan), and recycling (involves evaluating results and determining whether to
User groups were identified as relatively homogeneous professional audiences who utilize information sources to resolve problems common to the members of the group.

Useful information was descriptive or interpretative data which satisfy the scientific, practical and efficiency criteria and pertain to the judgmental criteria to be employed in choosing among action alternatives.

Values were defined as those guides to behavior which a person prizes, cherishes, esteems, chooses consistently and optimizes in choice patterns. The integration of values results in the process of valuing.

Value indicators are purposes, beliefs or other expressions that do not meet all the criteria of a value but indicate the presence of a value.

Assumptions, Limitations and Delimitations

Assumptions. Basic assumptions accepted by the investigator at the outset of the study were:

1. That the Research Utilization Problem-Solver Model by Lippett and reported by Havelock was valid.

2. That the Planning, Fact-Finding, and execution Model by Lewin and reported by Havelock was valid.

3. That the phases of decision as described by Dunlop and reported by White were valid.
4. That the process of decision making as described by Stuffiebeam et al was valid.

Limitations. This study was conducted during the early part of May. The decisions which teachers made during this month may not necessarily reflect those made throughout the year or any other specific time period.

Delimitations. The study was delimited to the population of the vocational and technical teachers in West Virginia who teach in programs administered by the State Department of Education and to those educational decisions which they made within the thirty working days during the time span of the study.

The study did not attempt to analyze the cognitive processes that go on when an action was being selected through preference ordering, when input information was converted into probabilities for determining risk, or when the process of valuing was being utilized. Additionally, the study did not identify causation factors for ambiguity, change, manifest conflict, or level of satisfaction. No attempt was made to query the participants on the valuing process which influenced their perceptions of the "important" variables or the manipulation of the variables in an "important" manner when the variable of "degree of change" was identified. Similarly, no questions were directed to the participants on the availability or utility of information or the intellectual capacity to use the information when the variable "amount of information grasp needed" was identified.
CHAPTER II

REVIEW OF RELATED LITERATURE

The review of related literature is covered in three sections:
(1) utilization of knowledge and information; (2) concepts of decision theory; and (3) process of decision making.

Utilization of Knowledge and Information

Jung and Lippett, as reported by Havelock, have described techniques which are employed in linking expert resources to the client systems and which are designed to ensure the utilization of scientific knowledge.\(^\text{34}\)

This utilization of knowledge for planned change in education involves three roles—educational practitioners, researchers, and linkers between the first two. This relationship is shown in Figure 3. The problem-solver model stresses five points: (1) the user is the starting place, (2) diagnosis precedes solution identification, (3) the outside helping role is non-directive, (4) the importance of internal resources, and (5) user-initiated change is the strongest. This study focused on points (2) and (4).

**FIGURE 3**

**RESEARCH UTILIZING PROBLEM SOLVING MODEL**

**SCIENTIFIC KNOWLEDGE**

- Identification of a Concern
- Diagnosis of the Situation
- Formulating Action Alternatives
- Feasibility Testing of Selected Alternatives, Including Training and Evaluation
- Adoption and Diffusion of Good Alternatives

**Methodology**

- Theory
- Research Findings

**Retrieving Knowledge**

- Priority of Needs
- Resources
- Existing Innovations

**May Result in New Scientific Knowledge**

**May Result in New Knowledge of the Setting**

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The second point mentioned above is that diagnosis precedes solution identification. Diagnosis is generally proposed before action steps are to be taken. Defining a problem provides a connection between the unsatisfactory situation and possible causes. According to Havelock, "this link must be made before a solution can be found."\(^{35}\)

Some authors describe a type of cyclical pattern of action stages (such as search for solutions, establishment of priorities, and determination of feasibility) as all being interdependent. The iterative (repeated recycling) procedures of carrying out action steps is probably best depicted by Lewin who describes social change as a series of recurrent action steps followed by reconnaissance of results and decisions which lead to the next action steps. Lewin's planning, fact-finding model as described by Havelock is shown as Figure 4.

The fourth point in the problem-solver model which was important to this study is the one called the importance of internal resources. In discussing this point Havelock states:

\[
\ldots \text{We tend to forget the fact that most users are already making very poor use of what they already know and have within easy reach. This home-grown and home-stored knowledge is probably going to be more relevant and more}
\]

\(^{35}\text{Ibid., p. 10-65.}\)
FIGURE 4

PLANNING, FACT-FINDING, AND EXECUTION*

*Figure copied from Lewin, Kurt as reported in Havelock, Op. Cit., p. 10-68.
suitable for the solution of the problem at hand than the imported knowledge will be. Moreover, even if the import is relevant and valuable, the user will have to mobilize internal resources of skill and experience to the task of adaptation of the outside knowledge to the inside need.36

One dimension of this point is what has been called the force field analysis. Havelock described it as:

. . . The force field analysis . . . a technique which was originally developed by Lewin, has the purpose of taking into account all the forces which act on the client system, forces which might inhibit or facilitate adoption of an innovation, and forces which the innovation itself may exert on the system. In taking a look at the client system as a whole, both roles and structures are generally considered. Not only must individuals adapt to and be trained to adjust to new roles resulting from change, but the structure of the system itself must be able to accommodate and maintain the change.37

Havelock states:

. . A potential receiver's reactions to a proposed innovation are a function of matters such as the amount of control he has over his own destiny, how ambiguous he sees the situation to be, and how much trust he places in local authority figures. The user then engages in search behavior to assess the likely net consequences of adopting the innovation. A good

36 Ibid., p. 10-67.

37 Havelock, Loc. Cit.
deal of ambivalence can be expected: this serves as personal and organizational defense.38

Ely has described the myths of information needs. One of these is that given sufficient information decisions can be made. It is explained in this manner.

. . . There is a wide range among users in the quantity of information needed or consumed. This variability is related to motivations, capacity, the nature of tasks and other factors. Sufficiency does not seem to be the single critical factor in acceptance of information. The variables of quantity, communicator credibility, format, perceived need, and timing interact simultaneously to confound the issue.39

In a study to be published soon, Gillespie and McCracken summarized the findings from four prior research studies which had identified the critical problems of and sources and methods of information utilization by state directors, local administrators, teacher educators and state supervisors of vocational and technical education. The findings were summarized along an eight dimension matrix and the matrix was used to formulate guidelines for dissemination of information. One of the dimensions of the matrix was called by the investigators the "decision-making mode." During the investigation the state and local directors were asked

38Ibid., p. 10-25.

to identify the problems they needed to solve during fifteen telephone interviews which were conducted at two-week intervals. They were also asked if they needed information in "order to solve the problems."

... Three hundred and forty-one problems were identified by the state directors. Of these problems, the respondents reported that they needed information for solving 300 (87.9%). They reported that they needed no information for solving 41 (12.0%) of the problems which they had identified.

... The local administrators identified 611 major professional problem areas in the study. They needed information in order to solve 133 (21.87%); they needed no information in order to solve 475 (78.13%) of the problems which they had reported.40

Concepts of Theory of Decision

Logical decision, according to White, requires the existence of a well-defined state of ambiguity and hence a well defined set of alternatives. He states:

... Thus in a problem $Q = \left[ \frac{A}{B} \right]$, the ambiguity can be stated in the form "which act shall we take?" The choice of say, a, is said to resolve this ambiguity. We may only wish to resolve some of the ambiguity. Thus if the truth values of certain informational propositions

40 J. David McCracken, and Wilma B. Gillespie, Information Utilization by Vocational Educators (Columbus, Ohio: The Ohio State University, The Center for Vocational and Technical Education), March 1973, forthcoming.
are not known, we may still wish to select an . . . opportunity without removing the informational ambiguities. We may not know the operating cost and yet still choose. 41

The interdependence of decisions has been pointed out by White. In analyzing primary decisions, one has to make secondary decisions, which are equivalent to selecting certain statements as being true. The truth or falsity of these statements can have a significant bearing on the appropriateness of any decision based on them and hence their analysis is just as important as the analysis of the primary decision.

**Alternative Decisions/Alternative Actions.** White makes this differentiation:

. . . One noticeable occurrence is the use of decision as being synonymous with action or alternatives. The use of the set of alternative decisions is quite common when the set of alternative actions is meant. The set of alternative actions identified the ambiguity and the resolution of this ambiguity constitutes the decision process and culminates in the decision. 42

**Decision/Choice.** Another noticeable occurrence is the use of the term "decision" when the term "choice" is meant. Dunlop, who is quoted by White, writes:


42 Ibid., p. 1.
There can be choice without decision, but there cannot be decision without choice. Throughout economics, that miserable puppet, the economic man, is allowed to choose but seldom if ever to decide. His choice, or choosing, is determined by his preference; just like choice of a strategy is like collusion, determined by rules, frequency-ratio probabilities and self interest in the Theory of Games. If auxiliaries are to be necessary for both decision and proof, the appropriate infinitive is to "arrive."  

**Decision Analysis.** The purpose of decision analysis, according to White, is to see how much selective action can be made decidable. It requires a complete decomposition of an activity into its various components, including the identification of each ambiguity and its form.  

**Selection Action.** This term, as described by White, was important to the concepts for this study. White states:

... This term refers to situations in which a selection mechanism takes some action (mechanism output) when presented with information (mechanism input) of a variety of kinds. The input contains a specified set of alternative actions, but in general a mechanism may act, in the face of an input, without "recognizing" the alternatives available.

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Four Phases of Decision. Dunlop says there are, to the extent of present knowledge, four phases of decision. These have been described by White as (1) hesitance, (2) knowledge, (3) striving, and (4) willing. Hesitance signals that a problem or ambiguous state exists; knowledge would contain information on the specification of the ambiguity as well as information relevant to the ambiguity resolution; striving would correspond to an attempt to decide between the alternatives; willing would correspond to use of any alternative chosen. Striving would have to include a decision process itself, since it would involve information activities. 46

Concept of Consequences. The decision operation, according to White, consists of preference, consequences, and decidability. The concept of consequence had the most significance to this study. It has been described by White as:

A common difficulty occurring throughout the field of practical decision-making is the problem of determination of consequences. It is clearly tied up with the preference aspect of choice, since when someone is presented with a commodity vector, parts of it may not, in themselves, constitute an ultimate consequence and the ultimate consequence may or may not be decidable. . . . There is nothing to prevent the decision maker from putting some preference

46 Ibid., p. 11.
ordering on (the decision) but this does not mean that he is informed about the consequences. 47

Process of Decision Making

Decision making has been defined as a process in which a person selects from two or more possible choices, 48 as the act of making up one's mind, 49 resolution of conflict, 50 the resolution of ambiguity 51 and choice among alternatives. 52 Stufflebeam and the PDK committee on evaluation have described decision making as a complex process which includes four stages: (1) becoming aware that a decision is needed, (2) designing the decision situation, (3) choosing among alternatives, and (4) action upon the chosen alternatives. 53 These four stages are shown in Figure 5. None of these stages is devoted explicitly to the provision of information. Information is needed at each stage. In making a choice,


53 Ibid., p. 50.
FIGURE 5

THE PROCESS OF DECISION MAKING

1. AWARENESS
   a. Identify programmed decision situations.
   b. Identify unmet needs and unsolved problems.
   c. Identify opportunities which could be used.

2. DESIGN
   a. State the decision situation in question form.
   b. Specify authority and responsibility for making the decision.
   c. Formulate decision alternatives.
   d. Specify criteria which will be employed in assessing alternatives.
   e. Determine decision rules for use in selecting an alternative.
   f. Estimate the timing of the decision.

3. CHOICE
   a. Obtain and assess criterion information related to each decision alternative.
   b. Apply the decision rules.
   c. Reflect on the efficacy of the indicated choice.
   d. Confirm the indicated choice, or reject it and recycle.

4. ACTION
   a. Fix responsibility for implementing the chosen alternative.
   b. Operationalize the selected alternative.
   c. Reflect on the face validity of the operationalized alternative.
   d. Execute the operationalized alternative, or recycle.

information is needed about the different costs, benefits, and success probabilities of the alternatives.

**Awareness Stage.** This has been described by Stufflebeam *et al* as becoming aware that a decision is needed and is the first element of the structure of decision making:

... Awareness may be psychological, cognitive or experiential. It may emanate from empirical data, subjective judgment, or situational events. Ideally, awareness of the need for decisions is precipitated systematically rather than by change. This would require an evaluation system that would systematically monitor the institution's operation for both congruence and contingency. Another systematic way of becoming aware that a decision is needed is through devices such as constitutions and by-laws which contain programmed decisions; examples include promotion of students, scheduling of classes, and allocation of staff and budget.

Programmed decisions include decision situations identified and assigned as a responsibility of a decision-making agent long before a choice is to be made. 54

The identification of unmet needs and unsolved problems provides another major source of awareness. Needs and problems "if they are critical, explosive or costly cause even the most passive decision maker to make some choice, if only to ignore the problems or to delegate responsibility for their solutions to other decision makers" point out

54 Ibid., p. 52.
the PDK committee. 55

Opportunities provide another major source of awareness. These, according to Stufflebeam, et al., "reflect a discrepancy between a probable state in the present program design and a better state that could be achieved by introducing change." 56 The essential question that a decision maker must answer in deciding to use an opportunity is whether the advantage outweighs the costs involved. In this study, delegation was added to the awareness stage of the process of decision making.

The second stage described is that of design. Once a decision maker is aware of the need to make a decision, he must design the situation to be processed. This is a complex undertaking involving six steps as described by Stufflebeam et al.

. . (1) state the decision situation in question form, (2) specify authority and responsibility for making the decision, (3) formulate decision alternatives, (4) specify criteria which will be employed in assessing alternatives, (5) determine decision rules for use in selecting an alternative, and (6) estimate the timing of the decision. 57

The intent of this study was to attempt to direct the decision makers' (classroom teachers') attention to the point in time between the awareness

55 Ibid., p. 54.
56 Ibid., p. 54.
57 Ibid., p. 55.
and the design stages of decision making and between the hesitancy and knowledge phases of decision (as described by Dunlop). The decision maker was requested to respond to queries at the particular point where he decided to use a search or a non-search strategy for action alternatives. The questions were fashioned into a penetration technique focused on decision makers in the client system.

Classification of Educational Decisions. This was an important variable in this study. Dettre, who sees decision making for the teacher transcending the classroom and reaching well into the total educative schema, has divided the areas of decision making for the teacher into the roles as described by Burrup: (1) director of learning, (2) guide and counselor, (3) mediator of the culture, (4) member of a school-community, (5) liaison between school and home, and (6) member of a profession. He states that for the teacher there appears to be two broad classifications of decisions based on the "proximity of the consequences of the decision to the situation within which it was made."

... Tactical decisions for the teacher are those related to the immediate situation for which there will be immediate feedback from the consequences produced by the decision. For example, a decision to switch from open to

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closed questions during the conduct of a lesson is a tactical decision, for it is made within the context of a given class with a given group with the intent to produce an immediate kind of feedback from the class. A decision to give a "pop quiz" as a result of a poor recitation constitutes a tactical decision by the teacher for it is intended to achieve some limited objective related to the immediate conduct of the class. 59

In addition to the proximity of the consequences produced by the decision and the notion of immediacy, tactical decisions have one other distinguishing characteristic that tends to separate them from strategic decisions. Dettre has described this in this way:

... Tactical decisions account for the purely personal and selfish variables inherent in every decision. If the teacher sees the decision as one likely to produce consequences directly involving him—that is, consequences with certain amounts of risk, conflict, or controversy—his decision will be made in part with an eye toward protecting himself. The greater the risk, conflict, or controversy perceived by the teacher the greater the chance that the decisions made are tactical with the intent to keep the individual teacher from becoming vulnerable to attack. 60

The other classification of decisions made by classroom teachers was the one called by Dettre "strategic." Dettre explains:

59 Ibid., p. 12.

60 Loc. Cit.
A strategic decision by a teacher is one growing out of an immediate situation but related to some future-time orientation. Strategic decisions are decisions related to the accomplishment of long-range goals for which there is no immediate indication of consequences produced and very little if any indication of the extent to which the decision may have contributed to the eventual attainment of the long-range goal. Similarly, because the proximity of consequences is so far removed from the immediate situation, the teacher need not be concerned with making himself vulnerable, and reaches his decisions with either reduced or nonexistent consideration of self as a major variable in need of protection. So, for example, a decision to ignore a particular kind of behavior by a learner in a classroom might be tactical if the teacher's intent is to avoid producing negative consequences in the immediate future—say within the time span of a given class; however, if the decision was made with an eye toward a change in the eventual behavior of the student—say by the end of the year—then the decision was a strategic decision. 61

This study attempted to build the probability-risk factor of decidability into this classification. The investigator recognized that some decisions by classroom teachers were not as "clean" as was implied in this classification. As Dettre has pointed out:

... Obviously some decisions may be double-edged. A teacher may wish to create a climate for immediate feedback as well as work toward long-range goals at the same time. There is nothing unacceptable or

61 ibid., p. 13.
unusual about such decisions. What is important
is that the teacher be consciously aware of the
kind of decision being made. 62

**Types of Decisions.** Another variable in this study was the type
of educational decision which the vocational and technical classroom teacher
made. The description of this variable was obtained from Stufflebeam and
the PDK Committee on Evaluation. The types of decisions are shown in
Figure 6:

... Decisions should be classified as a function
of whether they pertain to ends or means. All
educational decisions may thus be exhaustively
and unambiguously classified by (1) intended ends
(goals), (2) intended means (procedural design),
(3) actual means (procedures in use), or (4) actual
ends (attainments). Thus there are four types of
educational decisions: (1) planning decisions to
determine objectives, (2) structuring decisions
to design procedures, (3) implementing decisions
to utilize, control, and refine procedures, and
(4) recycling decisions to judge and react to
attainments. 63

**Planning decisions** specify major changes that are needed in a
program. The need for planning decisions arises from an awareness of
a lack of agreement between what the program is intended to be and what
actually is, or awareness of a lack of agreement between what the program

62 Ibid., p. 15.

could become and what it is likely to become. The authority for planning
decisions usually, but not always resides with policy groups. Teachers
make planning decisions with regard to behavioral outcomes.

The formulation of planning decisions has consequences that are both
internal and external to the program of interest. Those internal to the
program usually take the form of directives sent from policy figures to
subordinates. External consequences usually are in the form of proposals
to funding agencies or to other external groups which might have the capacity
to aid or contrain the programs that seek funds, sanction, and/or endorse­
ment. 64

Structuring Decisions specify the means to achieve the ends
established as a result of planning decisions. They must consider such
variables as method, content, organization, personnel, schedule, facilities
and budget. The three sources for structuring an action plan to achieve the
desired objectives are (1) planning decisions which specify what the program
is to achieve, (2) the existence of alternative means available to achieve the
specified outcomes, and (3) the relative strengths and weaknesses to the
available alternatives. Stufflebeam et al point out:

. . . An action plan based upon structuring
decisions is a comprehensive statement of

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64 Ibid., p. 81.
FIGURE 6
TYPES OF DECISIONS

<table>
<thead>
<tr>
<th>INTENDED</th>
<th>ACTUAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENDS</td>
<td></td>
</tr>
<tr>
<td>PLANNING DECISIONS</td>
<td>RECYCLING DECISIONS</td>
</tr>
<tr>
<td>to determine objectives</td>
<td>to judge and react to attainment</td>
</tr>
<tr>
<td>MEANS</td>
<td></td>
</tr>
<tr>
<td>STRUCTURING DECISIONS</td>
<td>IMPLEMENTING DECISIONS</td>
</tr>
<tr>
<td>to design procedures</td>
<td>to utilize, control and refine procedures</td>
</tr>
</tbody>
</table>

outcomes to be achieved, work to be performed, and resources and time to be used. 65

Implementing Decisions are those involved in carrying through the action plan. These arise from two sources: (1) knowledge of the procedural specifications, and (2) continuing knowledge of the procedural specifications and the actual procedures. These two kinds of information aid in process control. Implementing decisions involve many choices regarding changes in procedures in process. Authority for implementing decisions is vested primarily in operations managers and their delegated representatives.

Persons responsible to the operations managers, such as teachers as part of their role, hold delegated powers to make certain decisions. Stufflebeam et al. state:

... Implementing decisions have varied consequences. A role functionary performs his work differently; in-service education sessions are conducted; staff obtains a better understanding of their individual and collective roles; specialists external to programs are consulted; newspapers publicize certain aspects of the program; new personnel are added to the staff; personnel work overtime; the PERT schedule is updated; new materials are obtained; and facilities are adapted to emergent program needs. 66

65 Loc. Cit.
66 Ibid., p. 83.
Recycling Decisions are decisions used in determining the relationship of attainments to objectives and whether to continue, terminate, evolve, or drastically modify the activity. The essential type of awareness precipitating these decisions is knowledge of the nature of timing of specified attainments. Recycling decisions involve product control choice and are concerned with attainments at any point in a program as opposed to outcomes following a full cycle of a program. Authority for recycling decisions usually resides with the operations managers during the implementation of an activity cycle and with the responsible fiscal agent at the conclusion of an activity cycle. Stufflebeam and the PDK committee note this about consequences:

... Recycling decisions have very tangible consequences. Project activities may be continued at the same level of funding under the same product specifications, they may be changed, or they may be discontinued. Some of the consequences may be: present staff may be reassigned or discharged; diffuse or install product into a broader context; activity cycle that produced the product may be debugged or recycled.67

Kinds of Educational Decisions. The description of the kinds of educational decisions which the teachers made was the one by Dettre, 68

67 Ibid., p. 83.

who notes that within both classifications of decisions (strategic and tactical) there are three distinct kinds of decisions: (1) qualitative decisions, (2) action decisions, and (3) quantitative decisions. In addition, the teacher may make decisions involving any two or three of the above in some combination.

Qualitative decisions involved a determination of the worth of a given state of affairs; action decisions involved selecting from two or more courses of action that were open to the teacher; and quantitative decisions involved that set involving time, numbers, or other measures of quantity.

Level of Satisfaction. This variable was described from two standpoints: (1) Gelatt, Varenhorst, and Carey have pointed out the difference between the process of deciding and problem-solving:

... A decision does not exist unless there is more than one course of action, alternative, or possibility to consider. If a choice exists, the process of decision may be utilized. The potential value of the process lies in the fact that its practitioner is more likely to be satisfied with his decisions. The process requires skills that can be learned, applied, and evaluated. At first, in learning the process, the process involves thinking about both personal and group values. Considering values removes the implication of "right" answers or outcomes, emphasizing rather an effective use of process that results in satisfying consequences. This emphasis distinguishes decision making from problem-solving. Problem-solving usually involves one best or right solution for everyone. When
decision making is skillfully utilized, it is more likely that the outcomes will be satisfying.  

(2) Level of satisfaction was also treated by White:

... Using Von Neumann's Theory of Value, we may measure the value of customer satisfaction, without determining how this value was mentally arrived at... If we make a person aware of certain probabilities and values of specific elements of a complex problem then he may very well select a different action to the one he would otherwise have chosen. This, in itself, does not make the changed selection any better than the original one. The principle that we need to invoke to establish this is that the characteristics of micro-component behavior are to be accepted as reliable and that characteristics based on choice in a complex problem are less reliable.  

The processing of information by the decision maker was also treated by White:

... Consider an investment expert. He may be able to give probabilities to the outcomes of individual shares and he may be very poor in giving probabilities to the outcomes of combinations of these investments. The information content is essentially the same initially, but the processing differs. The theory is thus a theory of invariant behavior, centering on the isolatable


components of the decision problem faced, and dependent on the input information specified. This is an important point because we cannot compare alternative actions selected under different information inputs.\textsuperscript{71}

Gelatt, Varenhorst, and Carey have stated that the three major requirements of skillful decision making are (1) examination and recognition of personal and group values, (2) knowledge and use of adequate, relevant information, and (3) knowledge and use of an effective strategy for converting this information into action.\textsuperscript{72} Stufflebeam et al have incorporated the valuing process into their decision making schema.\textsuperscript{73} This is included as Figure 7. In addition to the level of satisfaction variable, this study attempted to incorporate the valuing process into three other independent variables: (1) degree of change precipitated by the educational decision, (2) the amount of information grasp, and (3) degree of conflict manifested in the decision. Like the level of satisfaction, these variables were quantified by the perceptions of the decision maker who rated them on a "high" to "low" Likert-like scale.

\textsuperscript{71}White, \textit{Loc. Cit.}


FIGURE 7
A SCHEMATIC OF THE DECISION-MAKING RATIONALE
AS A BASIS FOR EVALUATION

All of these variables were used as value indicators in the study and all of them relate to the decision setting. Stufflebeam and the PDK committee describe a decision setting as:

. . . The total set of environmental circumstances governing both analysis and choice. These include the degree of change which might result from a choice, the urgency required, the ways alternatives and/or criteria are generated, the predictability of consequences for different decision options, the costs and risks associated with various decision options.\(^7\)

**Small Versus Large Change.** Change is becoming an important issue in education. The PDK committee used the Braybrooke and Lindblom description of change:

. . . Whether a change is called "large" or "small" depends on the value attached to it; and this value can vary from person to person. But the notion of "small" is not so subjective and personal as this conclusion implies, for in any society there develops a strong tendency toward convergence in estimates of what changes are important or unimportant. The convergence is of a particular kind that gives the judgment of "importance" on a quality. Convergence develops for two reasons: because while people favor (or disfavor) contrary things, they make issues of the same topics and because they tend to agree on which factors are important for theoretical explanations of change. We imagine a continuum between, at one extreme, quite trivial changes (either because no important variables are

\(^7\)Ibid., p. 61.
altered or because the change of important
variables is of trivial magnitude) and, at the
other extreme, large changes in variables. 75

Stufflebeam et al continue the description by saying that potential
changes could be classified in terms of two conditions: (1) does society
view the variables to be altered as important? and (2) does society view
the magnitude of the proposed changes as trivial or important? "If no
important variables are involved, the change is small. If important
variables are involved but manipulated in unimportant ways, the change
is small. However, if important variables are manipulated in important
ways the change is large." 76 The PDK committee view small changes
within education as those related to relatively uncontroversial issues and
minor changes of unimportant variables, and those which are insignificant
in their potential impact on variables which are considered important by
society. Small changes are also usually serial in nature; they result in
small, stepwise shifts rather than large ones.

High Versus Low Information Grasp. Stufflebeam et al also use the
Braybrooke and Lindbloom description of this variable:

75 Ibid., p. 62.

76 Ibid., p. 65.
The degree to which the decision makers can be supposed to understand all the features of the problem with which they are faced. Near one extreme, information is generally lacking; values (goals, objectives, constraints, side conditions) are neither well understood nor well reconciled, and intellectual capacity generally falls short of grasping and thinking through the problem. Near the other extreme, all aspects of the problem are quite well grasped in the decision maker's mind.

Information grasp, then, is composed of two elements: (1) relevant information and (2) the decision maker's intellectual capacity to use that information to solve practical problems. If information is to be adequate two requirements must be met: (1) a validated theoretical structure and (2) adequate, practical data about the particular decision problem. It depends upon the decision maker's ability to understand both the theoretical and practical information which is available. Information that is considered to have utility or usefulness should satisfy the scientific criteria of (1) internal and external validity, (2) reliability, and (3) objectivity, the practical criteria of (4) relevance, (5) importance, (6) scope, (7) credibility, (8) timeliness, and (9) pervasiveness, and the prudential criterion of efficiency. Additionally, the information must pertain to the values of the

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Ibid., p. 66.
decision maker. The processing of the input information (home-stored and home-grown knowledge, acceptance of these criteria for judging the utility of information and the psychological, cognitive and experiential awareness which focus empirical data, subjective judgment and perceptions of situation events) by the decision maker during the interaction with the decision setting results in the decision moment which results in search behavior.

**Decision Making as Conflict Resolution.** This definition provided another variable for the study and was explained by Culbertson, Jacobson and Reller. From the teacher's perspective, conflict can stem from any one of two sources or these two general sources in combination: (1) differences between his own values and those of another individual or group, and (2) differences in values as reflected in what different individuals or groups expect from the teacher. This study did not attempt to identify the causation of the conflict. Culbertson and his co-authors report that conflict is especially prevalent in decisions related to controversial issues, to proposed change, to personal satisfaction, and to threat from changes within or outside the organization.

78 Stufflebeam et al, Loc. Cit.

The Time Variable. Two dimensions of this variable were identified in this study and are related to two problems. The first one was concerned with the problem of "nesting." Stufflebeam et al discuss this problem from two respects: (1) more than one decision maker is typically related to (makes contributions to) any given decision, and (2) decisions often stand in a contingency relationship to other decisions. "Nesting" is related to those problems arising from multiple decision makers relating to the same decision--personnel who will participate in or influence decisions or who could provide useful information to support the decision maker. This brings up the problem of consensus and differing degrees of awareness about the characteristics of the decision situation. The PDK committee describes this:

... Consensus poses the problem of group communication and the resultant problems associated with conflicting value positions. ... Since different personnel involved probably have differing degrees of awareness about the characteristics of the decision situation, misunderstanding can result which will thwart decision processes and attempts to reach rational group decisions.80

The problems arising from the interdependency of decisions was described by Stufflebeam et al as the suboptimization problem which

pertains essentially to the hierarchy of decision making and is the second problem pertaining to time. According to these authors, decisions do not stand alone; they occur in contingent series, both horizontally and vertically. Previous decisions have a bearing on future decisions—the horizontal or time dimension; higher order decisions influence and/or constrain lower order decisions and vice versa—the vertical dimension. The participants answered four questions relating to contingency relationships and responded to a question about whether the decision was made as an individual or in a group.

The PDK committee state:

. . . Higher level decision makers decide what must be done, intermediate level decision makers determine how the given means is to be put in effect. Yet, in most cases, a particular decision maker's choice meets conditions in his limited sphere but creates negative side effects for other decisions in the total hierarchy of decision making. A given decision maker often is not able to predict all of the negative side effects or know which are the most critical. To get on with the job, he suboptimizes, or delimits his problem to only that sphere that he wishes to and/or can cope with. He then attempts to reach an optimum solution within that sphere without regard for the good of the total relevant system.81

The contingency relationship was one dimension of the time variable. The second aspect of the time variable was the one described by Toffler as

81Ibid., p. 92.
resulting from acceleration. He explains it in terms of "future shock," a term he used to describe the "shattering stress and disorientation that is induced in individuals in too short a time."

. . . Social forces inherent in acceleration (economic, social and psychological) introduce higher level of uncertainty in daily life and affect decision making. When you increase options... you slow down decision time. The complexity of environment, increase in options, and increase in decisions affect ability to cope.82

The investigator recognized that the timing factor in decision making was a minimum condition if the decision-maker was to have the information he needed in time to apply it to the decision problem and that this had broad implications for information dissemination. The time variable appeared in two places in the study (1) contingency relationships and (2) as a variable, "degree of urgency of time."

A schematic on the processing of information is presented as Figure 8. This figure represents an attempt to conceptualize the cyclical processing of input information during the interaction with the decision setting. It is at this particular moment when the decision maker determines the search behavior to be used.

A SCHEMATIC OF THE PROCESSING OF INFORMATION OVER TIME

Awareness Stage of Decision Making
Hesitancy Phase of Decision

Design Stage of Decision Making
Knowledge Phase of Decision
Permission was obtained from the Assistant Superintendent of Vocational, Technical and Adult Education, West Virginia Department of Education to use the vocational and technical teachers in West Virginia as the population for the study. The frame for the population was obtained from the State Director. Permission to mail the survey instruments and a list of vocational teachers was obtained from each county director of vocational education. (Sixteen counties and 349 teachers were excluded from the frame due to the following reasons: (1) non-response to request for permission; and (2) permission not granted within the time specified.)

Simple random sampling was utilized through the use of a table of random numbers. The sample size was calculated based on (1) the percentage of the population that fell within the category of interest, (2) degree of precision desired in the estimate of accurateness, and (3) the risk that

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the actual error of estimate was larger than the degree of precision specified. Decision rules were developed and from a frame of 998 teachers a total of 300 sampling units was randomly selected. The study was delimited to the population of vocational teachers in West Virginia.

**Design.** The study utilized survey research for the purpose of describing relationships. The dependent variable for the study was the use of the strategies of determining action alternatives by vocational teachers when an educational decision needed to be made. It had two categories: (1) a non-search strategy in which the alternatives were given and the decision maker chose from them; and (2) a search strategy in which the decision maker needed to search for alternatives or options.

The nine independent variables in the study were concerned with the educational decisions which the vocational teachers made. They were: (1) classification of the decisions (tactical or strategic), (2) kinds (qualitative, action, and quantitative), (3) types (planning, structuring, implementing, and recycling), and the teachers' perceptions of (4) amount of information grasp needed, (5) degree of change precipitated, (6) degree of ambiguity, (7) degree of manifest conflict, (8) degree of urgency of time,

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and (9) level of satisfaction.

A special effort was made to minimize non-sampling errors frequently encountered in survey research: (1) lists obtained from the county directors were compared with the frame obtained from the state department in order to guard against frame error; (2) the lists were checked carefully to spot multiple entries which would precipitate selection error; (3) efforts were made to monitor non-contacts and refusals in order to minimize non-response error; and (4) during the pilot test of the survey instrument, efforts were made to query those teachers about the understandability of the questions in order to minimize measurement error.85

Data and Instrumentation. Attention was given to the development of the survey instrument in order to attempt to increase the response rate: (1) an awareness letter was sent along with the solicitation of the county directors' support of the study; (2) early pilots during the development of the instrument indicated that it could be completed in less than ten minutes; (3) a different color of paper for each mailing of the instrument was used; (4) first-class mail was used (both to and from the investigator); (5) postage was affixed to the forms which were to be returned; (6) special effort was

used to make the questions as clear, simple, and as short as possible.
(This was monitored during the pilot test.); (7) a cover letter for each
mailing was used for explanation, directions, and to establish the boundaries
for anonymity; (8) two follow-up questionnaires were used; and (9) a random
sample of non-respondents was telephoned.

Each teacher in the frame was assigned a number which was used
as the assigned respondent number. The date of response (the date of the
return of the first response was assigned number one) in consecutive
numbers from 1 to 30, was written on each questionnaire by the investigator.
These dates were used to designate early, middle, and late respondents.

Four specific objectives were developed. The survey instrument
was analyzed to make certain that these objectives were represented in the
questions. A selected amount of demographic data was collected and used
for descriptive purposes.

Special consideration was given to the possible "testing effect" of
the questionnaire, (...to what extent would the survey instrument influence
the teachers to indicate a search or non-search strategy?). This factor
was discussed with advisors and attempts to monitor it were made when
the questionnaire was pilot tested.

The cover letter which accompanied the first questionnaire explained
the purpose of the study, the approximate time that it would take to respond
to the questions and outlined operational procedures for returning the form. Additionally, it contained the following: "Even though on any particular day you may make numerous decisions pertaining to your role as a teacher and those decisions may have varying degrees of importance involving the many phases of teaching, please respond about the very first decision which you must make after you receive this letter. There are no right or wrong answers; the intent is to focus on this specific decision."

Besides the investigator, two judges were asked to code the decision problems which the teachers wrote in the space provided on the instruments.

The following description by Burrups served as a guide for the judges. The roles involved the teacher as a: (1) director of learning (planning, implementation, evaluation); (2) guide and counselor (referrals to specialists, extent to which the teacher wished to allow himself to become involved in the active performance of the role, and voluntary versus involuntary involvement for the teacher); (3) mediator of the culture (deals with values and belief systems common to a general definition of democracy as a way of life and in the other task area the teacher may be expected to set a desirable model for imitation by students); (4) member of a school community (maintaining teacher-teacher relationships, maintaining teacher-administrator relationships, maintaining teacher-board of education relationships, and teacher-policy relationships); (5) liaison between school and home (public relations role—decisions related to the creation and projection of images
and part of a communications system maintained by the school); and
(6) member of a profession (the role itself has to do with those actions
taken by teachers that relate to improving the quality of the total
performance as a teacher and ameliorating the conditions within which
the teacher may be expected to work).  

**Analysis.** This study collected nominal and ordinal data which
influenced the type of analysis utilized. The dependent variable and all
of the independent variables were quantified by a frequency count. In
addition, the following independent variables were rated on a scale con­
tinuum from "high" to "low" to which nine arbitrary values had been assigned:
(1) amount of information grasp; (2) degree of change; (3) degree of ambiguity;
(4) degree of manifest conflict; (5) degree of urgency of time; and (6) level
of satisfaction.

The independent variable, the classification of the decision (strategic
or tactical) required the decision maker to rate each of five criteria at
designated places along a continuum. These designated spots had an
arbitrary value assigned to them which was used to establish decision rules
for the classification of the decision. The numerical values assigned to the
criteria were totaled. Those decisions which had a total numerical value

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86Percy E. Burrup, The Teacher and the Public School System (New
of 1 to 25 were classified as tactical; those from 26 to 45 were classified as strategic.

The objectives were concerned with relationships, so the statistic which was used was Chi square. The measure of relationship (association) which was used when the dependent and the independent variables were both measured on a nominal scale was the Phi Coefficient. The degree of association is shown as Cramer's V.

**Time Schedule.** A PERT chart was developed. The sampling units were asked to return the first questionnaires by May 9, 1973. The cut-off date following the third mailing was June 11, 1973.

**Analysis of Non-Response Bias.** From the frame of 998 vocational and technical teachers in West Virginia, a random sample of 300 sampling units was selected and assigned respondent numbers. Three hundred questionnaires were mailed on May 1, 1973, 219 follow-up questionnaires

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were mailed on May 14, and 75 follow-up questionnaires were mailed on
May 25, 1973. In each mailing to each teacher, an explanatory cover letter
accompanied the questionnaire. The date of return of the instruments was
monitored and the respondents were classified as early, middle, and late.
On June 4, a random sample of 30 of the non-respondents was telephoned
and reminded of the questionnaires. Those respondents who returned the
questionnaire following the telephone calls were classified as late-late.

A total of 193 (64.3 percent of the 300) instruments were returned.
Sixty percent of the 300 instruments (180) were usable and reported in the
study. All of the respondents did not answer each question. This is
reflected in the tables in the study as varying number of responses.

Seventy-five or 41.7 percent of the 180 respondents were classified
as early, 59 (32.8 percent) as middle, 25 (13.9 percent) as late, and 21
(11.6 percent) as late-late. These data are given in Table 1.

TABLE 1
CLASSIFICATION OF RESPONDENTS BY DATE OF RESPONSE

<table>
<thead>
<tr>
<th>Classification</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early</td>
<td>75</td>
<td>41.7</td>
</tr>
<tr>
<td>Middle</td>
<td>59</td>
<td>32.8</td>
</tr>
<tr>
<td>Late</td>
<td>25</td>
<td>13.9</td>
</tr>
<tr>
<td>Late-Late</td>
<td>21</td>
<td>11.6</td>
</tr>
<tr>
<td>TOTAL</td>
<td>180</td>
<td>100.0</td>
</tr>
</tbody>
</table>
The early, middle, late, and late-late respondents were compared on the dependent variable (search strategy used) and three of the independent variables (classification, kind, and type of decisions). The reason for this procedure was to investigate whether non-respondents would be likely to make responses similar to the respondents. Research hypotheses were stated for each question. The test of significance which was used was Chi-square. For the statistically significant findings, Cramer's V was used to determine the degree of association between the two variables. The data on the search strategies used and the date of response for decisions which were classified as tactical are shown in Table 2.

**Table 2**

SEARCH STRATEGY USED AND DATE OF RESPONSE FOR DECISIONS: TACTICAL

<table>
<thead>
<tr>
<th>Search Strategy Used</th>
<th>Date of Response</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Early</td>
<td>Middle</td>
<td>Late</td>
<td>Late-Late</td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
<td>f</td>
</tr>
<tr>
<td>Non-Search Strategy</td>
<td>25</td>
<td>48.1</td>
<td>21</td>
<td>50.0</td>
<td>9</td>
<td>45.0</td>
<td>5</td>
<td>31.3</td>
<td>60</td>
</tr>
<tr>
<td>Search Strategy</td>
<td>27</td>
<td>51.9</td>
<td>21</td>
<td>50.0</td>
<td>11</td>
<td>55.0</td>
<td>11</td>
<td>68.8</td>
<td>70</td>
</tr>
<tr>
<td>TOTAL</td>
<td>52</td>
<td>40.0</td>
<td>42</td>
<td>32.3</td>
<td>20</td>
<td>15.4</td>
<td>16</td>
<td>12.3</td>
<td>130</td>
</tr>
</tbody>
</table>

Chi Square = 1.769; df = 3; p > .05
The null hypothesis was accepted. For teachers who made educational decisions which were classified as tactical, there was not a significant relationship between the use of a search or non-search strategy and date of response.

Data on the search strategies used and decisions which were classified as strategic are shown in Table 3.

### TABLE 3

SEARCH STRATEGY USED AND DATE OF RESPONSE FOR DECISIONS: STRATEGIC

<table>
<thead>
<tr>
<th>Search Strategy Used</th>
<th>Early</th>
<th>Middle</th>
<th>Late</th>
<th>Late-Late</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Search Strategy</td>
<td>11</td>
<td>8</td>
<td>47.1</td>
<td>40.0</td>
<td>80.0</td>
</tr>
<tr>
<td>Search Strategy</td>
<td>12</td>
<td>9</td>
<td>52.9</td>
<td>60.0</td>
<td>20.0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>23</td>
<td>17</td>
<td>34.0</td>
<td>10.0</td>
<td>10.0</td>
</tr>
</tbody>
</table>

Chi Square = 2.10; df = 3; p > .05

The null hypothesis was accepted. For teachers who made educational decisions which were classified as strategic, there was not a significant relationship between the use of a search or a non-search strategy and date of response.
Data on the variables search strategies used and date of response for qualitative decisions are shown in Table 4. The null hypothesis was rejected indicating a statistically significant relationship between the use of a search or a non-search strategy and the date of response. Both early and late-late respondents tended to use search strategies in higher proportion than middle or late respondents. If the sample of late-late respondents reporting qualitative decisions is representative of non-respondents, the data suggest that non-respondents may tend to be teachers who frequently use a search strategy when making qualitative decisions.

**Table 4**

<table>
<thead>
<tr>
<th>Search Strategy Used</th>
<th>Date of Response</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Early f</td>
<td>%</td>
<td>Middle f</td>
<td>%</td>
<td>Late f</td>
<td>%</td>
</tr>
<tr>
<td>Non-Search Strategy</td>
<td>3 20.0</td>
<td>10 52.6</td>
<td>4 44.4</td>
<td>0 0.0</td>
<td>17 34.7</td>
<td></td>
</tr>
<tr>
<td>Search Strategy</td>
<td>12 80.0</td>
<td>9 47.4</td>
<td>5 55.6</td>
<td>6 100.0</td>
<td>32 65.3</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>15 100.0</td>
<td>19 38.8</td>
<td>9 18.4</td>
<td>6 12.2</td>
<td>49 100.0</td>
<td></td>
</tr>
</tbody>
</table>

Chi Square = 7.69; 3 df; p < .05; Cramer's V = 0.396.
Similar analyses were made on the variables of search strategies used and action, quantitative, planning, structuring, implementing and recycling decisions. In each instance the null hypothesis was accepted. For teachers who made action, quantitative, planning, structuring, implementing, and recycling decisions, there was not a significant relationship between the use of a search or non-search strategy and date of response.

In summary, if the assumption is valid that the sample of late-late respondents is representative of the non-respondents, the preceding analyses indicate that (for measures on the dependent variable) teachers responding to the questionnaires may be considered representative of the group to whom questionnaires were mailed.
CHAPTER IV

FINDINGS

Background Information: The Decision Moment

The general purpose of this study was to describe the relationship between the search strategies used for determining action alternatives and the making of educational decisions by vocational teachers. Recognizing the cyclical nature of the process of decision making, the investigator attempted to capture a point in time between the awareness stage of the decision making process (when the teacher became aware that a decision needed to be made) and the design stage (when the teacher designed the decision situation by specifying the authority and responsibility for making the decision, formulating alternatives, specifying criteria to be employed in assessing the alternatives, determining the decision rules for use in selecting an alternative, and estimating the timing of the decision).

Additionally, the study attempted to hover over a point between the hesitance phase of decision (when the decision maker had received a signal that a problem or ambiguous state existed) and the knowledge phase of decision (which pertained to the information on the specification of the ambiguity as well as information relevant to the ambiguity resolution).
The findings, then, are presented in two sections; the first provides the background information for the presentation of the objectives. It provides selected information for the particular moment when the decision maker processed input information during the interaction with the decision setting (just prior to the decision concerning the knowledge phase of decision and the design stage of the process of decision making). This point in time involved the decision to search or not to search and was described as a decision moment. The findings will be presented as (1) description of selected demographic data, (2) coding of the decision problem statements, (3) awareness stage of the decision making process, (4) contingency relationships and group process used, (5) description of the teachers' perceptions of six selected variables, (6) coding of the decision problem statements with these perceptions, (7) kind of decision, (8) type of decision, and (9) consequences of the decision. At the end of the section, findings will be presented relative to the classifications of the decisions according to the degree of risk perceived in the decisions (tactical for those having a high amount of risk and strategic for those having a low amount); and the search strategy used and the intent of the search.

The second section of the findings deals with the relationship of the variables and is presented as an analysis of the data according to the objectives of the study.
Demographic Data

A limited amount of demographic data were collected and are reported in the following tables.

**Subject Areas Taught**

Sixty-two (35.0 percent) of the 177 respondents taught Business and Office education; forty-four (24.9 percent) taught Trade and Industrial courses; twenty-three (13.0 percent) taught Home Economics; and 17 (9.6 percent) taught Technical education. Agriculture, with 13 (7.3 percent) and Health Occupations with 10 (5.6 percent) were the subject areas with the next highest frequencies. This information is given in Table 5.

**TABLE 5**

SUBJECT AREAS TAUGHT

<table>
<thead>
<tr>
<th>Subject Area</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>13</td>
<td>7.3</td>
</tr>
<tr>
<td>Business and Office</td>
<td>62</td>
<td>35.0</td>
</tr>
<tr>
<td>Distributive</td>
<td>5</td>
<td>2.8</td>
</tr>
<tr>
<td>Health Occupations</td>
<td>10</td>
<td>5.6</td>
</tr>
<tr>
<td>Home Economics</td>
<td>23</td>
<td>13.0</td>
</tr>
<tr>
<td>Industrial Arts</td>
<td>1</td>
<td>0.6</td>
</tr>
<tr>
<td>Technical</td>
<td>17</td>
<td>9.6</td>
</tr>
<tr>
<td>Trade and Industrial</td>
<td>44</td>
<td>24.9</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>1.1</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>177</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
Program Level Students Taught

Table 6 shows that the majority (123 or 69.1 percent) of the 178 respondents who answered this question taught in Senior High Schools and only 6 (3.4 percent) of the teachers reported teaching in Junior High Schools. Teachers who reported teaching in Post-Secondary and Adult programs were approximately the same (25 or 14.0 percent for the former and 24 or 13.5 percent for the latter).

**TABLE 6**

**PROGRAM LEVEL STUDENTS TAUGHT**

<table>
<thead>
<tr>
<th>Program Level</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Junior High</td>
<td>6</td>
<td>3.4</td>
</tr>
<tr>
<td>Senior High</td>
<td>123</td>
<td>69.1</td>
</tr>
<tr>
<td>Post-Secondary</td>
<td>25</td>
<td>14.0</td>
</tr>
<tr>
<td>Adult</td>
<td>24</td>
<td>13.5</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>178</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Number of Years in Current Teaching Position

The participants were asked to indicate the number of years that they had been in the current teaching position. The responses to this question are shown in Table 7. Of the 178 teachers who responded, over 53.9 percent (96) of them reported being in the current teaching position.
less than 5 years. Thirty-nine (21.9 percent) reported the 6 to 10 years
category and 9 (5.1 percent) reported 16 to 20 years. An equal number
(17 or 9.6 percent) reported 11 to 15 years and over 20 years.

TABLE 7
NUMBER OF YEARS IN TEACHING POSITION

<table>
<thead>
<tr>
<th>Years</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 5 years</td>
<td>96</td>
<td>53.9</td>
</tr>
<tr>
<td>6 to 10 years</td>
<td>39</td>
<td>21.9</td>
</tr>
<tr>
<td>11 to 15 years</td>
<td>17</td>
<td>9.6</td>
</tr>
<tr>
<td>16 to 20 years</td>
<td>9</td>
<td>5.1</td>
</tr>
<tr>
<td>Over 20 years</td>
<td>17</td>
<td>9.6</td>
</tr>
<tr>
<td>TOTAL</td>
<td>178</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Coding of Decisions by Roles of Teachers

The teachers were requested to write the decision problems in
designated spaces on the instruments. The decision problems were coded
according to the roles of teachers by a panel of judges. Clearly, the
majority of the decisions reported by the 180 teachers, were concerned
with the role of the teacher as a director of learning (119 decisions or
66.1 percent were in this category). Table 8 also shows that 34 (18.9 per-
cent) of the decisions related to the role of the teacher as a member of a
school community; 14 (7.8 percent) as a member of a profession; and 7
(3.9 percent) as a liaison between school and home. The roles of the teacher as a guide and counselor and as a mediator of the culture were reported with the same frequency (3 or 1.7 percent).

TABLE 8
CODING OF DECISIONS BY ROLES OF TEACHERS

<table>
<thead>
<tr>
<th>Coding</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Director of Learning</td>
<td>119</td>
<td>66.1</td>
</tr>
<tr>
<td>Guide and Counselor</td>
<td>3</td>
<td>1.7</td>
</tr>
<tr>
<td>Mediator of the Culture</td>
<td>3</td>
<td>1.7</td>
</tr>
<tr>
<td>Member of a School-Community</td>
<td>34</td>
<td>18.9</td>
</tr>
<tr>
<td>Liaison Between School and Home</td>
<td>7</td>
<td>3.9</td>
</tr>
<tr>
<td>Member of a Profession</td>
<td>14</td>
<td>7.8</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>180</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Awareness Stage of Decision Process

The questions in this research instrument were directed at a point in time between the awareness and design stages of the process of decision making and between the hesitancy and knowledge phases of decision.

Table 9 shows that 83 (46.1 percent) of the teachers reported that the decisions were in response to unmet needs and/or unsolved problems. Forty-six (25.6 percent) of the decisions resulted from delegation to the teachers; while 31 (17.2 percent) decisions were in response to an
opportunity for introducing change. The smallest number (20 or 11.1 percent) of the decisions were in response to authority identified in school policies and guidelines.

TABLE 9

AWARENESS STAGE OF DECISION PROCESS

<table>
<thead>
<tr>
<th>Stage</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delegation</td>
<td>46</td>
<td>25.6</td>
</tr>
<tr>
<td>Response to Unmet Needs and/or Unsolved Problems</td>
<td>83</td>
<td>46.1</td>
</tr>
<tr>
<td>Response to Authority Identified in School Policies and Guidelines</td>
<td>20</td>
<td>11.1</td>
</tr>
<tr>
<td>Response to an Opportunity for Introducing Change</td>
<td>31</td>
<td>17.2</td>
</tr>
<tr>
<td>TOTAL</td>
<td>180</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Contingency Relationships and Group Process Used

The participants were asked to respond to queries about the vertical and horizontal relationships of the decisions to be made. Fifty-eight (33.0 percent) of the teachers reported that the decisions depended upon one made at a higher level in the school; 118 (67.0 percent) reported that the decisions did not depend upon one made at a higher level. One hundred and twenty-seven (72.2 percent) of the teachers reported that the decisions would not,
and 49 (27.8 percent) reported that the decisions would affect decisions at a lower level in the school. The responses to these two questions are shown under the vertical relationships of Table 10.

Table 10 also shows the horizontal relationships. One hundred and eight (60.3 percent) of the teachers reported that the making of the decision depended on knowing the consequences of a previous decision; while 71

<table>
<thead>
<tr>
<th>TABLE 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONTINGENCY RELATIONSHIPS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th></th>
<th></th>
<th></th>
<th>YES</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percent</td>
<td>Frequency</td>
<td>Percent</td>
<td>Frequency</td>
<td>Percent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VERTICAL (Hierarchial)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does the decision depend upon one made at a higher level in the school?</td>
<td>58</td>
<td>33.0</td>
<td>118</td>
<td>67.0</td>
<td>176</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Will this decision affect other decisions at a lower level in the school?</td>
<td>49</td>
<td>27.8</td>
<td>127</td>
<td>72.2</td>
<td>176</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HORIZONTAL (Time Dimension)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Will making this decision depend on knowing the consequences of a previous decision?</td>
<td>108</td>
<td>60.3</td>
<td>71</td>
<td>39.7</td>
<td>179</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Will the decision be affected by time available to collect data, use information resources, and/or meet deadlines?</td>
<td>107</td>
<td>60.5</td>
<td>70</td>
<td>39.5</td>
<td>177</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
(39.7 percent) responded negatively to this question. Of the 177 teachers who responded, 107 (60.5 percent) reported that the decision to be made would be affected by time; however, 70 or 39.5 percent of the teachers reported "no" in response to this question.

Each participant was asked whether the decision to be made would be made by the decision-maker as an individual or in a group. As is shown in Table 11, approximately three-fourths (133 or 73.9 percent) of the 180 teachers reported that the decision would be made individually and 47 (26.1 percent) indicated that the decision would be made in a group.

**TABLE 11**

**GROUP PROCESS**

<table>
<thead>
<tr>
<th>Group Process</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Decision Maker</td>
<td>133</td>
<td>73.9</td>
</tr>
<tr>
<td>Group of Decision Makers</td>
<td>47</td>
<td>26.1</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>180</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Teachers' Perceptions of Six Independent Variables

The respondents were asked to rate perceptions of six independent variables in relation to the decisions which must be made. Four of these (amount of information grasp needed, degree of change, amount of conflict,
and level of satisfaction) were identified as value indicators in the study.

**Amount of Information Grasp Needed**

Of the 177 teachers who responded to the question about the amount of information grasp needed to make the educational decisions, as shown in Table 12, 75 teachers (42.4 percent) reported decisions that were perceived as needing a medium amount of information grasp; seventy-one (40.1 percent) a high amount; and thirty-one (17.5 percent) were perceived as needing a low amount.

**TABLE 12**

<table>
<thead>
<tr>
<th>Amount</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>31</td>
<td>17.5</td>
</tr>
<tr>
<td>Medium</td>
<td>75</td>
<td>42.4</td>
</tr>
<tr>
<td>High</td>
<td>71</td>
<td>40.1</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>177</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

**Degree of Change Precipitated by the Decision**

The teachers also reported perceptions of the degree of change which would be precipitated by the decisions and these data are reported in Table 13. Seventy-nine (45.1 percent) of the decisions were perceived as
precipitating a high degree of change; sixty-eight (38.9 percent) a medium
degree; and 28 (16.0 percent) a low degree.

**TABLE 13**

PERCEIVED DEGREE OF CHANGE
PRECIPITATED

<table>
<thead>
<tr>
<th>Degree</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>28</td>
<td>16.0</td>
</tr>
<tr>
<td>Medium</td>
<td>68</td>
<td>38.9</td>
</tr>
<tr>
<td>High</td>
<td>79</td>
<td>45.1</td>
</tr>
<tr>
<td>TOTAL</td>
<td>175</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**Degree of Conflict**

Another independent variable in this group was the degree of conflict
perceived in the decisions. Table 14 shows that 131 (75.7 percent) of the
173 decisions reported were perceived as having low or medium amounts of

**TABLE 14**

PERCEIVED DEGREE OF CONFLICT

<table>
<thead>
<tr>
<th>Degree</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>59</td>
<td>34.1</td>
</tr>
<tr>
<td>Medium</td>
<td>72</td>
<td>41.6</td>
</tr>
<tr>
<td>High</td>
<td>42</td>
<td>24.3</td>
</tr>
<tr>
<td>TOTAL</td>
<td>173</td>
<td>100.0</td>
</tr>
</tbody>
</table>
conflict. Forty-two (24.3 percent) of the decisions were perceived as having a high degree of conflict.

**Level of Satisfaction**

Perceptions of the level of satisfaction experienced in making the decision was another independent variable in this study. Of the 175 responses to this question, as reported in Table 15, 93 (53.1 percent) of the decisions were perceived as having a high level of satisfaction; 58 (33.1 percent) a medium level; and 24 (13.7 percent) a low level.

**TABLE 15**

PERCEIVED LEVEL OF SATISFACTION

<table>
<thead>
<tr>
<th>Level</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>24</td>
<td>13.7</td>
</tr>
<tr>
<td>Medium</td>
<td>58</td>
<td>33.1</td>
</tr>
<tr>
<td>High</td>
<td>93</td>
<td>53.1</td>
</tr>
<tr>
<td>TOTAL</td>
<td>175</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**Degree of Ambiguity**

Perceptions of the degree of ambiguity was also a variable in the study and these data are shown in Table 16. One hundred and forty-six (88.0 percent) of the decisions were perceived to have a medium or low degree of ambiguity. Twenty (12.0 percent) were perceived as having a
high amount. Fourteen or 7.8 percent of the teachers in this study did not respond to this item.

TABLE 16

PERCEIVED DEGREE OF AMBIGUITY

<table>
<thead>
<tr>
<th>Degree</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>72</td>
<td>43.4</td>
</tr>
<tr>
<td>Medium</td>
<td>74</td>
<td>44.6</td>
</tr>
<tr>
<td>High</td>
<td>20</td>
<td>12.0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>166</td>
<td>100.0</td>
</tr>
</tbody>
</table>

No response = 14 or 7.8 %

Degree of Urgency of Time

The time dimension of decision making was investigated from two respects; the first was a question on the horizontal relationships (reported in Table 10). For the second, the teachers were queried about the degree of urgency of time perceived in the decisions and 176 responded to this question. Of the reported decisions, 104 (59.1 percent) were perceived as having a high degree of urgency of time; 47 (26.7 percent) a medium degree; and 25 (14.2 percent) a low degree. These data are reported in Table 17.
TABLE 17

PERCEIVED DEGREE OF URGENCY OF TIME

<table>
<thead>
<tr>
<th>Degree</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>25</td>
<td>14.2</td>
</tr>
<tr>
<td>Medium</td>
<td>47</td>
<td>26.7</td>
</tr>
<tr>
<td>High</td>
<td>104</td>
<td>59.1</td>
</tr>
<tr>
<td>TOTAL</td>
<td>176</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Coding of Decision Problem Statements and Teachers' Perceptions of Six Variables

Data on the teachers' perceptions of the foregoing six variables and the coding of the decision problem statements according to the roles of teachers are presented in the next six tables. The first four tables present data on value indicators and the coding of the decisions.

Coding of Decision Problem Statements and Amount of Information Grasp

Table 18 presents data on the amount of information grasp needed to make the decisions and the decision problem statements reported by the teachers. Thirty-one of the decision problem statements reported by the teachers were perceived as needing a low amount of information grasp, 75 a medium amount, and 71 a high amount.
The teacher role as director of learning was coded for 116 or 65.5 percent of the problem statements. Fifty-one (68.0 percent) of the teachers perceived the decisions as needing a medium amount of information grasp, 48 (67.7 percent) a high amount, and 17 (54.8 percent) a high amount.

All of the teachers who reported decisions coded for the role of the teacher as guide and counselor perceived them to need a high amount of information grasp.

Three teachers reported decision problem statements that were coded for the mediator of the culture and perceived the amount of information grasp needed as follows: one low, one medium, and one high.

Seven teachers reported statements which were coded for the role

<table>
<thead>
<tr>
<th>Coding</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Director of Learning</td>
<td>17</td>
<td>54.8</td>
<td>51</td>
<td>68.0</td>
</tr>
<tr>
<td>Guide and Counselor</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Mediator of the Culture</td>
<td>1</td>
<td>3.2</td>
<td>1</td>
<td>1.3</td>
</tr>
<tr>
<td>Member of a School Community</td>
<td>7</td>
<td>22.6</td>
<td>14</td>
<td>18.7</td>
</tr>
<tr>
<td>Liaison Between Home and School</td>
<td>3</td>
<td>9.7</td>
<td>2</td>
<td>2.7</td>
</tr>
<tr>
<td>Member of a Profession</td>
<td>3</td>
<td>9.7</td>
<td>7</td>
<td>9.3</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>31</td>
<td>100.0</td>
<td>75</td>
<td>100.0</td>
</tr>
</tbody>
</table>
of the teacher as liaison between home and school (3 or 9.7 percent indicated that a low amount of information grasp was needed, 2 or 2.7 percent a medium amount, and 2 or 2.8 percent a high amount).

Fourteen of the decision problem statements were coded for the teacher role as member of a profession (7 teachers or 9.3 percent perceived the decisions as needing a medium amount of information grasp; 4, or 5.6 percent, a high amount; and 3 teachers or 9.7 percent, a low amount.

Table 19 indicates that 79 teachers perceived the decision as precipitating a high degree of change, 68 a medium degree, and 28 a low degree of change.
degree. One hundred and sixteen of the teachers who rated this variable, reported decision problem statements that were coded for the role of the teacher as director of learning (52, or 65.7 percent, reported that the decision would precipitate a high degree of change; 46, or 67.6 percent, a medium degree; and 18 teachers, or 64.3 percent, reported a low degree).

Three teachers reported decision problem statements that were coded for the role of the teacher as guide and counselor (2 teachers, or 2.9 percent, reported that the decision would precipitate a medium degree of change and 1, or 3.6 percent, a low degree of change).

Three teachers reported decision problem statements that were coded for the role of the teacher as mediator of the culture (one teacher rated the degree of change variable as low; 1 teacher, a medium degree, and 1 teacher, a high degree).

Thirty-two teachers rated the degree of change variable and reported decision problem statements that were coded for the role of the teacher as member of a school community (15 teachers, or 19.0 percent, perceived the decision as precipitating a high degree of change; 11, or 16.2 percent, a medium degree; and 6 teachers, or 21.4 percent, a low degree).

The teacher role as liaison between school and home was coded for 7, or 4.0 percent of the decision problem statements (4 teachers perceived the decision as precipitating a high degree of change; 1 teacher, or 1.5 percent, a medium degree, and 2 teachers, or 7.1 percent, a low degree.)
Fourteen teachers reported decision problem statements that were coded for the role of the teacher as member of a profession (seven teachers, or 8.9 percent, perceived the decision as precipitating a high degree of change, and 7, or 10.3 percent, a medium degree of change).

Fifty-nine of the decisions were perceived by the teachers as manifesting a low degree of conflict, 72 a medium degree, and 42 a high degree. Forty-seven teachers, who reported decision problem statements that were coded for the teacher role as director of learning, perceived them as manifesting a low degree of conflict. Forty-six, or 63.9 percent, perceived a medium degree; and 20 teachers or 47.6 percent, perceived the decisions as manifesting a high degree of conflict.

The three decision problem statements that were coded for the role of the teacher as guide and counselor were perceived by the teachers as manifesting a medium (reported by 2 teachers, or 2.8 percent) or a high (reported by 1 teacher, or 2.4 percent) degree of conflict.

Three teachers reported decision problem statements that were coded for the teacher role as member of a school community; 14, or 33.3 percent, were perceived by the teachers as manifesting a high degree of conflict, 16, or 22.2 percent, a medium degree, and 3, or 5.1 percent, a low degree.

Seven teachers reported decision problem statements that were coded for the teacher role as liaison between school and home (four
teachers, or 6.8 percent, perceived the decision as manifesting a low degree of conflict, 2, or 2.8 percent, a medium degree, and one teacher, or 2.4 percent, a high degree).

Of the fourteen problem statements that were coded for the role of the teacher for member of a profession (5, or 11.9 percent, were perceived as manifesting a high degree of conflict, 5, or 6.9 percent, a medium degree, and 4, or 6.8 percent, a low degree). These data are presented in Table 20.

<table>
<thead>
<tr>
<th>Coding</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Director of Learning</td>
<td>47</td>
<td>79.6</td>
<td>46</td>
<td>61.9</td>
</tr>
<tr>
<td>Guide and Counselor</td>
<td>0</td>
<td>0.0</td>
<td>2</td>
<td>2.8</td>
</tr>
<tr>
<td>Mediator of the Culture</td>
<td>1</td>
<td>1.7</td>
<td>1</td>
<td>1.4</td>
</tr>
<tr>
<td>Member of a School Community</td>
<td>3</td>
<td>5.1</td>
<td>16</td>
<td>22.2</td>
</tr>
<tr>
<td>Liaison Between School and Home</td>
<td>4</td>
<td>6.8</td>
<td>2</td>
<td>2.8</td>
</tr>
<tr>
<td>Member of a Profession</td>
<td>4</td>
<td>6.8</td>
<td>5</td>
<td>6.9</td>
</tr>
<tr>
<td>TOTAL</td>
<td>59</td>
<td>100.0</td>
<td>72</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Table 21 indicates that 93 of the teachers reported a high level of satisfaction for the decisions, 58 a medium level, and 24 a low level. Of the 116 teachers who reported decision problem statements that were coded for the role of the teacher as director of learning, 65, or 69.8 percent, reported a high level, 37, or 63.8 percent, a medium level, and 14, or 58.3 percent, a low level of satisfaction.

The teachers reported three decision problem statements that were coded for the role of the teacher as mediator of the culture (2 of these teachers, or 2.2 percent, reported a high, and 1, or 1.7 percent, a low level of satisfaction).

Thirty-two of the decision problem statements were coded for the teacher role as member of a school community (eleven of these teachers, or 11.8 percent reporting these decisions, perceived a high level of satisfaction, 15, or 25.9 percent, a medium level, and 6 or 25.0 percent a low level).

Seven teachers reported decision problem statements that were coded for the teacher role of liaison between school and home (two teachers, or 2.2 percent, indicated a low level of satisfaction, 4 or 6.9 percent, a medium, and one teacher, a low level).

The role of the teacher as member of a profession was reported by fourteen teachers who rated the variable; twelve (12.9 percent) reported a high level of satisfaction and 2, or 8.3 percent, a low level.
### TABLE 21
CODING OF DECISION PROBLEM STATEMENTS AND THE PERCEIVED LEVEL OF SATISFACTION IN MAKING THE DECISIONS

<table>
<thead>
<tr>
<th>Coding</th>
<th>Level of Satisfaction</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>Medium</td>
<td>High</td>
<td>Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
</tr>
<tr>
<td>Director of Learning</td>
<td>14</td>
<td>58.3</td>
<td>37</td>
<td>63.8</td>
<td>65</td>
<td>69.8</td>
</tr>
<tr>
<td>Guide and Counselor</td>
<td>1</td>
<td>4.2</td>
<td>1</td>
<td>1.7</td>
<td>1</td>
<td>1.1</td>
</tr>
<tr>
<td>Mediator of the Culture</td>
<td>0</td>
<td>0.0</td>
<td>1</td>
<td>1.7</td>
<td>2</td>
<td>2.2</td>
</tr>
<tr>
<td>Member of a School Community</td>
<td>6</td>
<td>25.0</td>
<td>15</td>
<td>25.9</td>
<td>11</td>
<td>11.8</td>
</tr>
<tr>
<td>Liaison Between School and Home</td>
<td>1</td>
<td>4.2</td>
<td>4</td>
<td>6.9</td>
<td>2</td>
<td>2.2</td>
</tr>
<tr>
<td>Member of a Profession</td>
<td>2</td>
<td>8.3</td>
<td>0</td>
<td>0.0</td>
<td>12</td>
<td>12.9</td>
</tr>
<tr>
<td>TOTAL</td>
<td>24</td>
<td>100.0</td>
<td>58</td>
<td>100.0</td>
<td>93</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Seventy-two of the decisions were perceived as having a low degree of ambiguity, 74 a medium, and 20 a high degree. Of the decision problem statements that were coded for the role of the teacher as director of learning, 53 (73.5 percent) were perceived by the teachers as having a low degree of ambiguity, 47 (63.4 percent) a medium degree, and 10 (50.0 percent) a high degree.

The decision problem statements coded for the role of the teacher as guide and counselor were perceived as having a medium (reported by 2 teachers or 2.7 percent) or a high (reported by 1, or 5.0 percent) degree of ambiguity.

Teachers reporting problem statements coded for member of a school community perceived a low (reported by 10, or 13.9 percent), a medium
(reported by 15, or 20.3 percent) or a high (reported by 6, or 30.0 percent) degree of ambiguity.

Six of the decision problem statements were coded for the role of the teacher as liaison between school and home; (3 or 4.2 percent) were perceived as having a low degree, and 3, or 4.1 percent, a medium degree of ambiguity.

Thirteen of the teachers who rated this variable reported decision problem statements that were coded for the teacher role as member of a profession (four, or 5.6 percent, of the decisions were perceived as having a low degree, 7, or 9.5 percent, a medium degree, and 2, or 10.0 percent, a high degree of ambiguity). These data are given in Table 22.

<table>
<thead>
<tr>
<th>Coding</th>
<th>Degree of Ambiguity</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>Medium</td>
<td>High</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
<td>f</td>
</tr>
<tr>
<td>Director of Learning</td>
<td>53</td>
<td>73.5</td>
<td>47</td>
<td>63.4</td>
<td>10</td>
</tr>
<tr>
<td>Guide and Counselor</td>
<td>0</td>
<td>0.0</td>
<td>2</td>
<td>2.7</td>
<td>1</td>
</tr>
<tr>
<td>Mediator of the Culture</td>
<td>2</td>
<td>2.8</td>
<td>0</td>
<td>0.0</td>
<td>1</td>
</tr>
<tr>
<td>Member of a School Community</td>
<td>10</td>
<td>13.9</td>
<td>15</td>
<td>20.3</td>
<td>6</td>
</tr>
<tr>
<td>Liaison Between School and Home</td>
<td>3</td>
<td>4.2</td>
<td>3</td>
<td>4.1</td>
<td>0</td>
</tr>
<tr>
<td>Member of a Profession</td>
<td>4</td>
<td>5.6</td>
<td>7</td>
<td>9.5</td>
<td>2</td>
</tr>
<tr>
<td>TOTAL</td>
<td>72</td>
<td>100.0</td>
<td>74</td>
<td>100.0</td>
<td>20</td>
</tr>
</tbody>
</table>
As indicated in Table 23, one hundred and seventy-six teachers rated the degree of urgency of time variable and reported decision problem statements. Twenty-five of the decisions were perceived as having a low degree of urgency of time, 47 a medium degree, and 104 a high degree. Of the 115 decision problem statements that were coded for the role of the teacher as director of learning, 60, or 57.6 percent, were perceived as having a high urgency of time; 32, or 68.1 percent, a medium, and 23, or 92.0 percent, a low urgency.

All of the decision problem statements (3, or 2.9 percent) that were coded for the teacher role as guide and counselor were perceived as having a high urgency of time. The three coded for mediator of the culture were perceived as having a medium (1, or 2.1 percent) or a high (2, or 1.9 percent) urgency of time.

Of the thirty-four decision problem statements that were coded for the teacher role as a member of a school community, 26, or 25.1 percent, were perceived as having a high urgency of time and 7, or 14.9 percent, a medium, and 1, or 4.0 percent, a low urgency.

The problem statements coded for the teacher role of liaison between school and home were perceived as having a high (5, or 4.8 percent) or a medium (2, or 4.3 percent) urgency of time. The fourteen problem statements coded for the role of the teacher as member of a profession were perceived as having a high (8, or 7.7 percent) or a medium (5, or 10.6 percent) or a low (1, or 4.0 percent) urgency of time.
### TABLE 23
CODING OF DECISION PROBLEM STATEMENTS AND THE PERCEIVED DEGREE OF URGENCY OF TIME FOR MAKING DECISIONS

<table>
<thead>
<tr>
<th>Coding</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
</tr>
<tr>
<td>Director of Learning</td>
<td>23</td>
<td>92.0</td>
<td>32</td>
<td>68.1</td>
</tr>
<tr>
<td>Guide and Counselor</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Mediator of the Culture</td>
<td>0</td>
<td>0.0</td>
<td>1</td>
<td>2.1</td>
</tr>
<tr>
<td>Member of a School Community</td>
<td>1</td>
<td>4.0</td>
<td>7</td>
<td>14.9</td>
</tr>
<tr>
<td>Liaison Between School and Home</td>
<td>0</td>
<td>0.0</td>
<td>2</td>
<td>4.3</td>
</tr>
<tr>
<td>Member of a Profession</td>
<td>1</td>
<td>4.0</td>
<td>5</td>
<td>10.6</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>25</td>
<td>100.0</td>
<td>47</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**Kind of Decision Variable**

One of the nine independent variables in this study was the kind of decisions made by teachers. Over 50 percent of the 180 decisions reported were action decisions (involved selection from two or more courses of action that were open). Forty-nine (27.2 percent) of the decisions involved a determination of the worth of a given state of affairs (qualitative decisions) and 35 (19.4 percent) involved time numbers, or other measures of quantity (quantitative decisions). These data are presented in Table 24.
TABLE 24

KINDS OF DECISIONS

<table>
<thead>
<tr>
<th>Kind</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qualitative (involves a determination of the worth of a given state of affairs)</td>
<td>49</td>
<td>27.2</td>
</tr>
<tr>
<td>Action (involves selection from two or more courses of action that are open)</td>
<td>96</td>
<td>53.4</td>
</tr>
<tr>
<td>Quantitative (involves time, numbers, or other measures of quantity)</td>
<td>35</td>
<td>19.4</td>
</tr>
</tbody>
</table>

TOTAL 180 100.0

Type of Decision Variable

The type of decisions was another independent variable treated in this study. Table 25 shows that most of the decisions which the teachers made involved evaluating results and determining whether to continue, terminate, evolve, or modify an activity (recycling decisions). Seventy-five (42.6 percent) of the 176 decisions that were reported were of this type. Forty-eight (27.3 percent) were structuring decisions (which specified means to achieve the ends established as a result of planning decisions and involved such variables as method, content, organization, personnel, schedule, facilities and budget). Nineteen (10.8 percent) of the decisions reported were implementing decisions which involved carrying out an
action plan; and 34 (19.3 percent) were planning decisions (specified changes which were needed).

<table>
<thead>
<tr>
<th>TYPE OF DECISIONS</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning (specifies changes that are needed)</td>
<td>34</td>
<td>19.3</td>
</tr>
<tr>
<td>Structuring (specifies means to achieve the ends established as a result of planning decisions. Involves such variables as method, content, organization, personnel, schedule, facilities, and budget)</td>
<td>48</td>
<td>27.3</td>
</tr>
<tr>
<td>Implementing (involves carrying out an action plan)</td>
<td>19</td>
<td>10.8</td>
</tr>
<tr>
<td>Recycling (involves evaluating results and determining whether to continue, terminate, evolve, or modify an activity)</td>
<td>75</td>
<td>42.6</td>
</tr>
</tbody>
</table>

**TOTAL** | 176 | 100.0 |

**Consequences of the Decisions**

The instrument for this study included a taxonomy of educational decisions (see Appendix A). The participants were asked to indicate the item in the list which would be primarily affected by the consequences of
the decision. As is shown in Table 26, teachers reported that ends (goals, purposes, objectives, clients, or a client) would be primarily affected by the decisions (reported with 78 frequencies or 43.3 percent of the total). The next largest number (37 or 20.6 percent) was reported for functions (duties, expectations, actions, performances). Means (programs, strategies, format specifications) were reported with 14 frequencies (8.0 percent of the total). Agents (offices, roles, statuses, linkages) were reported with 3 frequencies (1.7 percent of the total). Norms (laws, standards, policies, rules, regulations) were reported with 12 frequencies (6.8 percent of the total). Allocation (budget, staffing) was reported with 4 frequencies (2.3 percent of the total). Orders (priority, timing, scheduling) were reported with 12 frequencies (6.8 percent of the total). Locale (site) was reported with 2 frequencies (1.1 percent of the total). Affirmation (support, consent, confirmation, cooperation) was reported with 14 frequencies (8.0 percent of the total).

<table>
<thead>
<tr>
<th>Consequence</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ends (goals, purposes, objectives, clients or a client)</td>
<td>78</td>
<td>44.3</td>
</tr>
<tr>
<td>Means (programs, strategies, format specifications)</td>
<td>14</td>
<td>8.0</td>
</tr>
<tr>
<td>Agents (offices, roles, statuses, linkages)</td>
<td>3</td>
<td>1.7</td>
</tr>
<tr>
<td>Functions (duties, expectations, actions, performances)</td>
<td>37</td>
<td>21.0</td>
</tr>
<tr>
<td>Norms (laws, standards, policies, rules, regulations)</td>
<td>12</td>
<td>6.8</td>
</tr>
<tr>
<td>Allocation (budget, staffing)</td>
<td>4</td>
<td>2.3</td>
</tr>
<tr>
<td>Orders (priority, timing, scheduling)</td>
<td>12</td>
<td>6.8</td>
</tr>
<tr>
<td>Locale (site)</td>
<td>2</td>
<td>1.1</td>
</tr>
<tr>
<td>Affirmation (support, consent, confirmation, cooperation)</td>
<td>14</td>
<td>8.0</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>176</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
strategies, format specifications) and affirmation (support, consent, confirmation, cooperation) were reported with equal frequencies (14 or 7.8 percent). Norms (laws, standards, policies, rules, regulations) and orders (priority, timing, scheduling) were reported by 12 teachers or 6.7 percent of the total. Two of the teachers, 1.1 percent, reported that locale (site) would be primarily affected by the decision; 3 or 1.7 percent indicated that agents (offices, roles, statuses and linkages) would be primarily affected; and 4 teachers or 2.3 percent reported decisions which would affect allocation (budget and staffing).

Classification of Decisions

The participants were requested to rate five characteristics at designated places along five continuums. These designated places were assigned arbitrary values from 1 to 9 (although these values did not appear on the continuum in the instruments). Decision rules for calculating the values for the five characteristics were established. (If the sum of the values of the five characteristics was from 1 to 25, the decision would be classified as tactical; if the sum was from 26 to 45, the decision would be classified as strategic.) Three of the teachers rated the continuum on the midpoint. These frequencies were not included in the calculations for data presented on Table 27.
The first characteristic was accomplishment of goals. As is shown in Table 27, 109 (61.2 percent) of the teachers reported that the decision would have accomplishment of goals that would be toward the "immediate" end of the continuum while 69 (38.8 percent) would be toward the "long-range" end.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Immediate</td>
</tr>
<tr>
<td>Accomplishment of goals</td>
<td>109</td>
</tr>
<tr>
<td>Closeness of consequences to the immediate situation</td>
<td>145</td>
</tr>
<tr>
<td>Feedback from consequences</td>
<td>88</td>
</tr>
<tr>
<td>Likelihood that consequences would involve the teacher directly</td>
<td>134</td>
</tr>
<tr>
<td>Amount of risk, conflict or controversy in relation to the self-concept in the role of the teacher or to the organizational structure of the school</td>
<td>78</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Near</td>
</tr>
<tr>
<td>Accomplishment of goals</td>
<td>61.2</td>
</tr>
<tr>
<td>Closeness of consequences to the immediate situation</td>
<td>82.9</td>
</tr>
<tr>
<td>Feedback from consequences</td>
<td>49.7</td>
</tr>
<tr>
<td>Likelihood that consequences would involve the teacher directly</td>
<td>76.6</td>
</tr>
<tr>
<td>Amount of risk, conflict or controversy in relation to the self-concept in the role of the teacher or to the organizational structure of the school</td>
<td>45.3</td>
</tr>
</tbody>
</table>
The second characteristic for the classification of the decisions was closeness of consequences with "near" and "far" as the ends of the continuum. Table 27 shows that 145 (82.9 percent) of the decisions were rated on the "near" side of the midpoint of this characteristic while 30 (17.1 percent) rated the characteristic on the "far" side of the midpoint.

The third characteristic used in the classification of the decisions was feedback from consequences with "immediate" and "future-time" as the extremes of the continuum. As is shown in Table 27, 88 (49.7 percent) of the decisions were rated for the "immediate" side of the midpoint for the characteristic. Of the 178 teachers who rated decisions on this characteristic, 89 (50.3 percent) rated the decisions on the "future-time" side of the midpoint.

The decisions were also rated on a fourth characteristic—the likelihood that the consequences of the decision would involve the teachers directly. At opposite extremes of the continuum were "likely" and "unlikely." Five of the respondents did not rate this characteristic. The teachers rated 134 (76.6 percent) of the decisions on the "likely" side of the midpoint; forty-one (23.4 percent) rated the characteristic on the "unlikely" side.

The fifth characteristic used in the classification of the decisions was concerned with the teachers' perceptions of the amount of risk, conflict or controversy in relation to the role of the teacher or to the organizational structure of the school. "High" and "low" were the qualifiers at the extreme ends of the continuum for this characteristic. Seventy-eight (45.3 percent)
of the teachers rated the decisions on the "high" side of the midpoint showing that the teachers perceived the decisions as having a high amount of risk, conflict or controversy. Ninety-four or 54.7 percent of the teachers perceived the decisions as having a "low" amount of risk, conflict, or controversy. Data on the five characteristics are summarized in Table 27.

These five characteristics (accomplishment of goals, closeness of consequences to the immediate situation, feedback from consequences, likelihood that the consequences would involve the teacher directly, and the amount of risk, conflict or controversy in relation to the self-concept in the teacher role or to the organization structure served as criteria for the classification of the decisions. The cumulative ratings of the values assigned along the continuaums for these characteristics were calculated. Of the 180 decisions which were reported, Table 28 shows that the teachers in this study reported 130 (72.2 percent) tactical decisions and 50 (27.8 percent) strategic decisions.

<table>
<thead>
<tr>
<th>Classification</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tactical</td>
<td>130</td>
<td>72.2</td>
</tr>
<tr>
<td>Strategic</td>
<td>50</td>
<td>27.8</td>
</tr>
<tr>
<td>TOTAL</td>
<td>180</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Dependent Variable and Intent of Search Behavior

The dependent variable in this study was the search strategy used for determining action alternatives. It had two categories: (1) a non-search strategy; and (2) a search strategy. Table 29 shows that ninety-five teachers (52.8 percent) reported the use of a search strategy and 85 or 47.2 percent a non-search strategy.

<table>
<thead>
<tr>
<th>Strategy Used</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Search</td>
<td>85</td>
<td>47.2</td>
</tr>
<tr>
<td>Search</td>
<td>95</td>
<td>52.8</td>
</tr>
<tr>
<td>TOTAL</td>
<td>180</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The participants were asked to indicate the intent of the search behavior. Fifty-seven teachers indicated that the intent of the search strategy used was for content (32, or 56.1 percent, reported using a non-search strategy and 25, or 43.9 percent, reported using a search strategy). One hundred and twenty-one of the teachers indicated that the intent of the search strategy used was for methods (52 teachers, or 43.0 percent, reported that a non-search strategy would be used; and 69, or 57.0 percent,
reported the use of a search strategy. These data are shown in Table 30.

### TABLE 30

SEARCH STRATEGY USED AND INTENT OF SEARCH BEHAVIOR

<table>
<thead>
<tr>
<th>Search Strategies Used</th>
<th>Intent</th>
<th>Content</th>
<th>%</th>
<th>Methods</th>
<th>%</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>f</td>
<td></td>
<td>f</td>
<td></td>
<td>f</td>
<td></td>
</tr>
<tr>
<td>Non-Search</td>
<td></td>
<td>32</td>
<td>56.1</td>
<td>52</td>
<td>43.0</td>
<td>84</td>
<td>47.2</td>
</tr>
<tr>
<td>Search</td>
<td></td>
<td>25</td>
<td>43.9</td>
<td>69</td>
<td>57.0</td>
<td>94</td>
<td>52.8</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>57</td>
<td>100.0</td>
<td>121</td>
<td>100.0</td>
<td>178</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Summary of the Background Information for the Decision Moment

**Demographic Data**

The majority of the teachers in this study taught either Business and Office or Trade and Industrial courses in secondary schools, and had been in the current teaching position less than ten years.

**Coding of Decision Problem Statements**

The majority of the decision problem statements reported by the teachers were coded for the role of the teacher as director of learning or member of a school community.
Awareness Stage of Decision Making

Over half of the 180 teachers in the study reported that the decision was delegated or in response to an unmet need or an unsolved problem; the others reported that the decisions were in response to either an opportunity for introducing change or to authority identified in school policies and guidelines.

Contingency Relationships

The majority of the teachers reported that the decision: (1) did not depend on one made at a higher level in the school; (2) would not affect decisions at a lower level in the school; (3) would depend on knowing the consequences of a previous decision; (4) would be affected by the time available to collect data, use information sources, and/or meet deadlines; and (5) would be made with the teacher as an individual decision maker rather than as a member of a group.

Teachers' Perceptions of Six Variables

Four of the independent variables in the study were used as value indicators: Eighty-two percent of the teachers reported a medium or high degree of information grasp needed to make the decision with seventeen percent reporting a low degree; eighty-three percent reported that the decision would precipitate a high degree of change and sixteen percent a
low degree; almost sixty-six percent of the teachers reported a medium or a high degree of conflict manifested in the decision while thirty-four percent reported a low degree; eighty-eight percent reported a high or medium level of satisfaction in making the decision while almost fourteen percent reported a low level of satisfaction.

Almost fifty-seven percent of the teachers in the study indicated perceptions of a medium or high degree of ambiguity perceived in the decision and forty-three percent reported a low degree.

In addition to the time dimension which was reported in the contingency relationships (where sixty percent of the respondents reported that making the decision depended on the time available to collect data, use information sources, and/or meet deadlines), the study directed a question to the teachers on the time variable. Almost eighty-six percent of the teachers reported a high or a medium degree of urgency of time, with fourteen percent reporting a low degree.

**Coding of the Decision Problem Statements and Ratings on These Six Variables**

The one hundred and nineteen decision problem statements which were coded for the role of the teacher as director of learning were perceived by the teachers as: (1) needing a medium to high amount of information grasp; (2) precipitating a medium to high degree of change; (3) manifesting
a low to medium degree of conflict; (4) having a low to medium degree of ambiguity; (5) having a medium to high degree of urgency of time; and (6) giving the teachers a medium to high level of satisfaction.

The three decision problem statements which were coded for the role of the teacher as guide and counselor were perceived as: (1) needing a high amount of information grasp; (2) precipitating a low to medium degree of change; (4) having a medium to high degree of ambiguity; (5) having a high degree of urgency of time, and (6) giving the teachers a low or medium or high level of satisfaction (one teacher reported for each group).

The three problem statements which were coded for the role of the teacher as mediator of the culture were perceived by the teachers as: (1) needing a low, medium, or high amount of information grasp; (2) precipitating a low, medium, or high degree of change; (3) manifesting a low, medium, or high degree of conflict; having low (for 2 teachers) or a high degree of ambiguity (reported by one teacher); (5) having a medium or high degree of urgency of time; and (6) giving the teacher a medium to high level of satisfaction.

The thirty-four problem statements which were coded for the role of the teacher as member of a school community were perceived by the teachers as: (1) needing a medium to high amount of information grasp; (2) precipitating a medium to high degree of change; (3) manifesting a
medium to high degree of conflict, (4) having a low to medium degree of ambiguity; (5) having a high degree of urgency of time; and (6) giving the teachers a medium to high level of satisfaction.

The seven problem statements which were coded for the role of the teacher as liaison between the home and the school were perceived by the teachers as: (1) needing a low to medium amount of information grasp; (2) precipitating a medium to high degree of change; (3) manifesting a low degree of conflict; (4) having a low to medium degree of conflict; (5) having a high degree of urgency of time; and (6) giving the teachers a medium level of satisfaction.

The fourteen problem statements which were coded for the role of the teacher as a member of a profession were perceived by the teachers as: (1) needing a medium amount of information grasp; (2) precipitating a medium or a high degree of change; (3) manifesting a medium to high degree of conflict; (4) having a low to medium degree of urgency of time; and (6) giving the teachers a high level of satisfaction.

**Kind of Decision**

Over half of the 180 decisions reported involved selection from two or more courses of action that were open (action decisions); over 27 percent involved a determination of the worth of a given state of affairs; and 35 involved time, numbers, or other measures of quantity.
**Type of Decision**

Almost seventy percent of the teachers reported recycling or structuring decisions. Ten percent of the teachers reported implementing decisions, and nineteen percent reported planning decisions.

**Consequences of the Decisions**

Over sixty-five percent of the teachers reported that ends or functions would be primarily affected by the decisions. Sixteen percent reported that the consequences of the decision would primarily affect means or affirmation. The teachers reported only 2 decisions that would affect locale, 3 for agents, and four for allocation.

**Classification of Decision**

The accumulative ratings on five characteristics and the decision rules which were applied were the bases for the classification of the decisions (tactical and strategic). The degree of risk factor in decision making was built into this classification. The teachers reported a total of 180 decisions; 130 of these were classified as tactical (perceived as having a high amount of risk, and 50 were classified as strategic (perceived as having a low degree of risk).

**Search Strategy Used and Intent of Search Behavior**

The teachers reported using a non-search strategy for 47.2 percent
of the decisions and a search strategy for 52.8 percent. One hundred and twenty-one teachers indicated that the intent of the search behavior was for methods and 57 for content. Of those teachers who reported methods as the intent of search behavior, fifty-seven percent indicated the use of a search strategy and forty-three percent a non-search strategy. Of the 57 teachers who indicated that the intent of the search was for content, 56.1 percent reported a non-search strategy and 43.9 percent a search strategy.

Analysis of the Data: Relationships of Variables

This section of the findings will be reported according to the two objectives which were developed for the study. The findings will be presented with the hypotheses stated in the null form. The level of significance in each case was accepted at .05. The statistical test of significance which was used was Chi square. Nie et al report:

... The Chi square test of association tests the independence (or lack of statistical association) between two variables. It indicates the likelihood of having a distribution as different from statistical independence by chance alone as the observed distribution. The formula for Chi square is:

\[ \chi^2 = \sum \frac{\left(f_o^i - f_e^i\right)^2}{f_e^i} \]

with \((r-1)(c-1)\) degrees of freedom, where \(f_o^i\) equals the observed frequency in each cell, \(f_e^i\) equals the expected frequency, \(c\) equals the number of columns in the table, and \(r\) equals the number of
The expected frequency $f_{e}^{i}$ is calculated as:

$$f_{e}^{i} = \frac{(c_{i} \cdot r_{i})}{N}$$

In this formula $c_{i}$ is the frequency in a respective column marginal, $r_{i}$ is the frequency in a respective row marginal, and $N$ stands for total number of valid cases.

The probability figures given in the table indicates on what level the difference between the observed distribution and the expected distribution can be thought as significant. It shows the probability of having as much difference between the sample distribution and the expected distribution if in fact, the population were independent. 90

In some instances, the observed frequency was less than five per cell, however, the minimum expected frequency per cell was more than 5.

The teachers reported 50 strategic decisions which affected the expected frequencies of the cells in the contingency tables. Therefore, tables showing the data on perceptions of the teachers of six selected variables were collapsed by recoding the responses into "high" and "low" groups. Siegel reports:

When $K$ is larger than 2 (and thus $df > 2$), the $x^2$ may be used if fewer than 20 percent of the cells have an expected frequency of less than 5 and if no cells have an expected frequency of less than 1. If these requirements are not met by the data in the form ... originally collected, the

---

researcher must combine adjacent categories in order to increase the expected frequencies in the various cells. 91

For the foregoing data, a corrected Chi square is reported. Guilford states:

When Chi square is applied to a problem with 1 df and when any expected frequency is less than 10, a modification known as Yate's Correction for Continuity is applied. This correction consists of reducing by .5 each obtained frequency that is greater than expected and in increasing by the same amount each frequency that is less than expected. This has the effect of reducing the amount of each difference between obtained and expected frequency to the extent of .5. The result is reduction of the size of Chi square. 92

For the statistically significant findings, the data were submitted to the Phi which makes a correction for the fact that the value of Chi square is directly proportional to that of N by adjusting the \( x^2 \) value. Nie et al give the formula for Phi as: 93

\[
\Phi (\beta) = \sqrt{\frac{x^2}{N}}
\]

The values of Phi range from 0, where there is no relationship


93 Ibid., p. 275.
between the two variables, to 1, when the relationship between the two variables is perfect. 94

When the degrees of freedom were greater than 1, the degree of association was reported with Cramér’s V. Nie et al report:

When Phi is calculated for a table which was not 2x2 (it has no upper limit), Cramér’s V is used to adjust Phi for either the number of rows or the number of columns in the table depending on which of the two is smaller. The formula for Cramér’s V is:

\[ V = \left( \frac{\phi^2}{\min (r-1), (c-1)} \right)^{1/2} \]

The values for Cramér’s V range from 0 to 1, regardless of the size of the table being tested. When the table being tested is actually 2x2, the value of Cramér’s V will be equal to that of Phi. 95

Objective 1 of this study was to describe the relationships between the frequency with which vocational teachers use the strategy of search or non-search for determining action alternatives and the frequency with which they make educational decisions which are classified (according to five criteria) as strategic and tactical.

The dependent variable was the search strategy used for determining action alternatives for making educational decisions. The main independent

94 Ibid., p. 276.

95 Nie, et al, Loc. Cit.
variable was the classification of the educational decisions. The respondents reported 130 decisions which were classified as tactical and 50 which were classified as strategic. The teachers reported the use of a search strategy for 95 (52.8 percent) of the decisions and a non-search strategy for 85 (47.2 percent) of the decisions.

The hypothesis was stated in the null form:

\( H_0: \) The variables "classification of decisions" and "search strategy used" are independent (not associated).

The alternative hypothesis was stated:

\( H_1: \) The variables "classification of decisions" and "search strategy used" are dependent (associated).

These data are reported in Table 31. The null hypothesis was accepted. In educational decision making by teachers, the classification

<table>
<thead>
<tr>
<th>Search Strategy Used</th>
<th>Classification of Decisions</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tactical</td>
<td>Strategic</td>
</tr>
<tr>
<td></td>
<td>( f )  %</td>
<td>( f )  %</td>
</tr>
<tr>
<td>Non-Search</td>
<td>60  46.2</td>
<td>25  50.0</td>
</tr>
<tr>
<td>Search</td>
<td>70  53.8</td>
<td>25  50.0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>130 100.0</td>
<td>50 100.0</td>
</tr>
</tbody>
</table>

Chi Square = 0.088; 1 df; p > .05.
of decisions is not related to the search strategy used.

Objective 2 had three parts for both classifications of decisions—strategic and tactical. The first of these related to the kind of decisions which teachers make and the search strategy used for determining action alternatives. The objective stated: to identify the relationship between the use of the strategy of search or non-search for determining action alternatives and the kinds of educational decisions made by vocational teachers (qualitative, quantitative, and action). Table 32 shows that, of the 180 decisions reported, 49 were qualitative, 96 were action, and 35 were quantitative. Eighty-five teachers (47.2 percent) reported using a non-search strategy for action alternatives and 95 teachers (52.8 percent) a search strategy. Of the teachers who reported using a non-search strategy, 17 (34.7 percent) reported qualitative decisions, 57 (59.4 percent) reported action decisions, and 11 (31.4 percent) reported quantitative decisions.

The hypothesis was stated in the null form:

\[ H_0: \] The variables "search strategy used" and the "kind (qualitative, action, and quantitative) of decisions" are independent (not associated).
The alternative hypothesis was stated:

\[ H_1: \text{The variables "search strategy used" and the "kind of decisions" are dependent (associated).} \]

Chi square was calculated on these variables and reported as 12.28 which is significant at the .05 level. The null hypothesis was rejected indicating association between search strategy used and kind of decision. Cramer's V of .26 was reported. Teachers reporting action decisions tend to indicate a non-search strategy in a higher percentage of the cases than teachers reporting qualitative and quantitative decisions. Data in Table 32 show that 59.4 percent of the action decisions were accompanied by a non-search strategy; in contrast, 34.7 percent of the qualitative decisions and 31.4 percent of the quantitative decisions were accompanied by a non-search strategy.

### TABLE 32

<table>
<thead>
<tr>
<th>Search Strategy Used</th>
<th>Kind of Decision</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Qualitative</td>
<td>Action</td>
<td>Quantitative</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td></td>
<td>( f )</td>
<td>( % )</td>
<td>( f )</td>
<td>( % )</td>
<td>( f )</td>
</tr>
<tr>
<td>Non-Search</td>
<td>17</td>
<td>34.7</td>
<td>57</td>
<td>59.4</td>
<td>11</td>
</tr>
<tr>
<td>Search</td>
<td>32</td>
<td>65.3</td>
<td>39</td>
<td>40.6</td>
<td>24</td>
</tr>
<tr>
<td>TOTAL</td>
<td>49</td>
<td>100.0</td>
<td>96</td>
<td>100.0</td>
<td>35</td>
</tr>
</tbody>
</table>

Chi square = 12.28; 2 df; p < .05. Cramer's V = 0.26.
strategy. So, teachers reporting qualitative and quantitative decisions tend to indicate a search strategy in a higher percentage of the cases than teachers reporting action decisions.

This objective also asked that the relationship between the use of the search or non-search strategies for determining action alternatives and the kind of decisions be identified for both classifications of the decisions (tactical and strategic).

Of the one hundred and thirty decisions which were classified as tactical, 37 were qualitative, 67 were action, and 26 were quantitative. Teachers reported the non-search strategy for 60 (46.2 percent) of the decisions which were classified as tactical. Of these decisions, 13 (35.1 percent) were qualitative, 39 (58.2 percent) were action, and 8 (30.8 percent) were quantitative. Fifty-three and eight-tenths percent (70 in number) of the teachers who made decisions classified as tactical reported the use of a search strategy for action alternatives. Twenty-four (64.9 percent) of these decisions were qualitative, 28 (41.8 percent) were action, and 18 (69.2 percent) were quantitative.

The hypothesis was stated in the null form:

\( H_0: \) The variables "search strategy used" and "kind of decisions" for decisions classified as tactical are independent (not associated).
The alternative hypothesis was stated:

\[ H_1: \text{The variables "search strategy used" and the "kind of decisions" for decisions classified as tactical are dependent (associated).} \]

These data are reported in Table 33. Chi square was calculated on these variables and reported as 8.20 which was significant at the .05 level. The null hypothesis was rejected indicating association between search strategy used and the kind of decisions when the decisions were classified as having a high degree of risk--tactical decisions. The index of the association is shown with Cramer's V which was reported as 0.25. Teachers reporting decisions with a high degree of risk (tactical decisions) and reporting action decisions tend to indicate a non-search strategy in a higher percentage of cases than teachers reporting qualitative and quantitative decisions. Data in Table 33 show that 58.2 percent of the action

<table>
<thead>
<tr>
<th>Search Strategy Used</th>
<th>Kind of Decision</th>
<th>Qualitative</th>
<th></th>
<th></th>
<th></th>
<th>Quantitative</th>
<th></th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>f</td>
<td>%</td>
<td></td>
<td></td>
<td>f</td>
<td>%</td>
<td></td>
<td>f</td>
</tr>
<tr>
<td>Non-Search</td>
<td>Qualitative</td>
<td>13</td>
<td>35.1</td>
<td>39</td>
<td>58.2</td>
<td>8</td>
<td>30.8</td>
<td>60</td>
<td>66.2</td>
</tr>
<tr>
<td></td>
<td>Action</td>
<td>39</td>
<td>58.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Quantitative</td>
<td>8</td>
<td>30.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>37</td>
<td>100.0</td>
<td>67</td>
<td>100.0</td>
<td>25</td>
<td>100.0</td>
<td>130</td>
<td>100.0</td>
</tr>
<tr>
<td>Search</td>
<td>Qualitative</td>
<td>24</td>
<td>64.9</td>
<td>28</td>
<td>41.8</td>
<td>16</td>
<td>69.2</td>
<td>70</td>
<td>53.8</td>
</tr>
<tr>
<td></td>
<td>Action</td>
<td>28</td>
<td>41.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Quantitative</td>
<td>16</td>
<td>69.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>37</td>
<td>100.0</td>
<td>67</td>
<td>100.0</td>
<td>25</td>
<td>100.0</td>
<td>130</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Chi Square = 8.20; 2 df; p < .05. Cramer's V = 0.25.
decisions were accompanied by a non-search strategy; in contrast, 35.1 percent of the qualitative decisions and 30.8 percent of the quantitative decisions were accompanied by a non-search strategy. Teachers reporting qualitative and quantitative decisions, tend to indicate a search strategy in a higher percentage of cases than teachers reporting action decisions.

The relationship between the kind of decisions and the search strategy used was identified for those decisions classified as strategic. Fifty decisions which were classified as strategic were reported. Twelve of these were qualitative decisions, 29 were action, and 9 were quantitative. The two categories of the dependent variable were reported with equal frequencies for these decisions. Four teachers (33.3 percent) reported a non-search strategy for qualitative decisions, 18 (62.0 percent) for action decisions, and 3 (33.3 percent) for quantitative decisions. Eight teachers (66.7 percent) of the 25 who reported strategic decisions used a search strategy for qualitative decisions, 11 (38.0 percent) for action decisions, and 6 (66.7 percent) for qualitative decisions.

The hypothesis was stated in the null form:

\[ H_0: \text{The variables "search strategy used" and "kind of decisions" for decisions classified as strategic are independent (not associated).} \]
The alternative hypothesis was stated:

\( H_1: \) The variables "search strategy used" and "kind of decisions" for decisions classified as strategic are dependent (associated).

Table 34 which reports these data shows the Chi square of 4.02. The null hypothesis was accepted. In making educational decisions which are perceived by teachers as having a low degree of risk (strategic decisions), the kind of decision (qualitative, action, or quantitative) is not related to the search strategy used (search or non-search).

<table>
<thead>
<tr>
<th>Search Strategy Used</th>
<th>Kind of Decision</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Qualitative</td>
<td>Action</td>
</tr>
<tr>
<td>Non-Search</td>
<td>4 33.3</td>
<td>18 62.0</td>
</tr>
<tr>
<td>Search</td>
<td>8 66.7</td>
<td>11 38.0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>12 100.0</td>
<td>29 100.0</td>
</tr>
</tbody>
</table>

Chi square = 4.02; 2 df; p > .05.
The classification of decisions and the kind of decisions which teachers make were two independent variables identified and used in this study. A third was the type of decision which teachers make. This was another dimension of objective 2:

For both classifications of the decisions (strategic and tactical):

2.2 To identify the relationship between the use of the strategy of search or non-search for determining action alternatives and the type of educational decisions made by vocational teachers (planning, structuring, implementing, and recycling).

Discussion of this part of the objective will be directed to the data which are reported in Table 35. There were 176 responses to this question. Eighty-two or 46.6 percent of the teachers reported the use of a non-search strategy for determining action alternatives and 94 or 53.4 percent reported a search strategy. Thirty-four of the total number of decisions reported were planning decisions (those that specify changes to be made). Forty-eight were structuring decisions (which specify means to achieve the ends established as a result of planning decisions and involve such variables as method, content, organization, personnel, schedule, facilities, and budget). Nineteen of the decisions were implementing (which involve carrying out an action plan); and 75 were recycling (which involve evaluating results and determining whether to continue, terminate, evolve, or modify an activity).
Of the 82 decisions reported for the use of a non-search strategy for determining action alternatives, 13 (38.2 percent) were planning decisions, 26 (54.2 percent) were structuring, 9 (47.4 percent) were implementing, and 34 (45.3 percent) were recycling.

Ninety-four (53.4 percent) decisions were reported for which the search strategy for determining action alternatives was reported. Twenty-one (61.8 percent) were planning decisions, 22 (45.8 percent) were structuring, 10 (52.6 percent) were implementing, and 41 (54.7 percent) were recycling.

The hypothesis was stated in the null form:

\[ H_0: \text{The variables "search strategy used" and "type of decisions" are independent (not associated).} \]

The alternative hypothesis was stated as:

\[ H_1: \text{The variables "search strategy used" and "type of decisions" are dependent (associated).} \]

Table 35 shows the Chi square as 2.11. The null hypothesis was accepted. In educational decision making by teachers, the type of decisions (planning, structuring, implementing or recycling) is not related to the search strategy used (search or non-search).
TABLE 35
RELATIONSHIP BETWEEN SEARCH STRATEGY USED AND THE TYPE OF DECISIONS

<table>
<thead>
<tr>
<th>Search Strategy Used</th>
<th>Planning</th>
<th>Structuring</th>
<th>Implementing</th>
<th>Recycling</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
<td>f</td>
</tr>
<tr>
<td>Non-Search</td>
<td>13</td>
<td>38.2</td>
<td>26</td>
<td>54.2</td>
<td>9</td>
</tr>
<tr>
<td>Search</td>
<td>21</td>
<td>61.8</td>
<td>22</td>
<td>45.5</td>
<td>10</td>
</tr>
<tr>
<td>TOTAL</td>
<td>34</td>
<td>100.0</td>
<td>48</td>
<td>100.0</td>
<td>19</td>
</tr>
</tbody>
</table>

Chi square = 2.11; 3 df; p > .05.

This part of objective 2 asked that the relationship between the use of the search or non-search strategy for determining action alternatives and the type of decisions be identified for both classifications of the decisions--tactical and strategic.

Of the 176 teachers who responded to the question about the type of decisions, 128 reported decisions that were classified as tactical decisions; 22 were reported for planning, 34 for structuring, 12 for implementing, and 60 for recycling. Fifty-nine (46.1 percent) of the teachers reported the use of a non-search strategy (with 8 or 36.4 percent for planning, 19 or 55.9 percent for structuring, 4 or 33.3 percent for implementing, and 28 or 46.7 percent for recycling). A search strategy was reported by 69 (53.9 percent) of the teachers reporting decisions classified as tactical.
with 14 (63.6 percent) used for planning, 15 (44.1 percent) for structuring, 8 (66.7 percent) for implementing, and 32 (53.3 percent) for recycling decisions.

The hypothesis for the type of decisions which were classified as tactical was stated in the null form:

$$H_0: \text{The variables "search strategy used" and "type of decisions" for decisions classified as tactical are independent (not associated).}$$

The alternative hypothesis was stated as:

$$H_1: \text{The variables "search strategy used" and "type of decisions" for decisions classified as tactical are dependent (associated).}$$

These data are reported in Table 36. The null hypothesis was accepted. When making educational decisions which are perceived by teachers as having a high degree of risk (tactical decisions) the type of decision (planning, structuring, implementing and recycling) is not related to the search strategy used (search or non-search).

Of the 48 decisions which were classified as strategic, 12 were planning, 14 were structuring, 7 were implementing, and 15 were recycling. The teachers reported the use of a non-search strategy for 23 (47.9 percent) of these strategic decisions with 5 (41.7 percent) reported for planning, 7
The hypothesis was stated in the null form:

\[ H_0: \text{The variables "search strategy used" and "type of decisions" for decisions classified as strategic are independent (not associated).} \]

The alternative hypothesis was stated as:

\[ H_1: \text{The variables "search strategy used" and "type of decisions" for decisions classified as strategic are dependent (associated).} \]

The null hypothesis was accepted. When making educational decisions which are perceived by teachers as having a low degree of risk (strategic decisions) the type of decision (planning, structuring, implement-
menting or recycling) is not related to the search strategy used (non-search or search).

### Table 37

**RELATIONSHIP BETWEEN SEARCH STRATEGY USED AND TYPE OF DECISION: STRATEGIC**

<table>
<thead>
<tr>
<th>Search Strategy Used</th>
<th>Planning</th>
<th>Structuring</th>
<th>Implementing</th>
<th>Recycling</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
<td>f</td>
</tr>
<tr>
<td>Non-Search</td>
<td>5</td>
<td>41.7</td>
<td>7</td>
<td>50.0</td>
<td>5</td>
</tr>
<tr>
<td>Search</td>
<td>7</td>
<td>58.3</td>
<td>7</td>
<td>50.0</td>
<td>2</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>12</strong></td>
<td><strong>100.0</strong></td>
<td><strong>14</strong></td>
<td><strong>100.0</strong></td>
<td><strong>7</strong></td>
</tr>
</tbody>
</table>

Chi square = 2.14; 3 df; p > .05.

The third dimension of objective 2 was directed to the teachers' perceptions of six independent variables. It stated:

**Objective 2**

For both classifications of the decisions, strategic and tactical:

**2.2 To identify the relationship between the use of search or non-search strategies for determining action alternatives and the teachers' perceptions of six selected variables.**

(1) amount of information grasp needed to make the educational decisions;
(2) degree of change which the decision will precipitate;
(3) degree of conflict manifested in the decision;
(4) degree of ambiguity in the decision;
(5) degree of urgency of time;
(6) level of satisfaction.

Tables showing the respondents' ratings on these six variables were collapsed into "high" and "low" columns. Data on the amount of information grasp needed to make the educational decisions and the search strategy used for determining action alternatives are reported in Table 38. Of the 177 responses to this question, 81 (46.6 percent) reported the use of the non-search strategy and 93 (53.4 percent) reported the use of search strategy for determining action alternatives. Of the teachers who reported using non-search strategies, 26 (46.4 percent) reported decisions which needed a low amount of information grasp and 55 (46.6 percent) reported decisions which needed a high amount of information grasp. Ninety-three teachers reported using a search strategy. Thirty of these teachers (53.6 percent) reported decisions which needed a low amount of information grasp, and 63 (53.4 percent) teachers reported decisions which needed a high amount of information grasp.

These data are reported on Table 38.
TABLE 38

RELATIONSHIP BETWEEN SEARCH STRATEGY USED AND PERCEIVED AMOUNT OF INFORMATION GRASP NEEDED

<table>
<thead>
<tr>
<th>Search Strategy Used</th>
<th>Amount of Information Grasp</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Low</td>
<td>High</td>
<td>Total</td>
</tr>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
</tr>
<tr>
<td>Non-Search</td>
<td>26</td>
<td>46.4</td>
<td>55</td>
<td>46.4</td>
</tr>
<tr>
<td>Search</td>
<td>30</td>
<td>53.6</td>
<td>63</td>
<td>53.4</td>
</tr>
<tr>
<td>TOTAL</td>
<td>56</td>
<td>100.0</td>
<td>118</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Corrected Chi Square = 0.02; 1 df; p > .05.

The hypothesis was stated in the null form:

H₀: The variables "search strategy used" and "amount of grasp needed" are independent (not associated).

The alternative hypothesis was stated as:

H₁: The variables "search strategy used" and "amount of information grasp needed" are dependent (associated).

The null hypothesis was accepted. In educational decision making by teachers, the amount of information grasp needed to make the decision is not related to the search strategy used (search or non-search).

The relationship between the amount of information grasp needed to make the decision and the search strategy used was identified for both classifications of the decisions—tactical and strategic. Teachers who
made educational decisions which were classified as tactical and indicated the use of a non-search strategy reported 22 (51.2 percent) decisions which needed a low amount of information grasp, and 34 (42.0 percent) decisions that needed a high amount of information grasp, or a total of 56 decisions for which a non-search strategy was used.

Sixty-eight teachers who made tactical decisions reported using a search strategy and rated the amount of information grasp variable. Twenty-one (48.8 percent) of these teachers reported needing a low amount of information grasp, and 47 (58.0 percent) reported decisions which needed a high amount.

The null hypothesis for the search strategy used and the amount of information grasp needed to make the decisions was stated in the null form:

\[ H_0: \text{The variables "search strategy used" and "amount of information grasp needed" for making educational decisions classified as tactical, are independent (not associated).} \]

The alternative hypothesis was stated as:

\[ H_1: \text{The variables "search strategies used" and "amount of information grasp needed" for making educational Decisions classified as tactical are dependent (associated).} \]

These data are given in Table 39.
The null hypothesis was accepted. When teachers make educational decisions which are perceived as having a high degree of risk (tactical decisions), the amount of information grasp needed to make the decision is not related to the search strategy used (search or non-search).

TABLE 39

RELATIONSHIP BETWEEN SEARCH STRATEGY USED AND PERCEIVED AMOUNT OF INFORMATION GRASP NEEDED: TACTICAL DECISIONS

<table>
<thead>
<tr>
<th>Search Strategy Used</th>
<th>Perceived Amount of Information Grasp</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
</tr>
<tr>
<td>Non-Search</td>
<td></td>
</tr>
<tr>
<td></td>
<td>f</td>
</tr>
<tr>
<td>22</td>
<td>51.2</td>
</tr>
<tr>
<td>Search</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>48.8</td>
</tr>
<tr>
<td>TOTAL</td>
<td>43</td>
</tr>
</tbody>
</table>

Corrected Chi Square = 0.62; df 1; p > .05.

The relationship between the search strategy used and the amount of information grasp needed was identified for strategic decisions. Of the fifty teachers who made decisions which were classified as strategic, 13 reported decisions which needed a low amount of information grasp, and 37 reported decisions which needed a high amount. Four of the teachers (30.8 percent) who reported a non-search strategy for determining action alternatives indicated the decisions needed a low amount of information grasp, and 21
(56.8 percent) teachers reported decisions which needed a high amount. Of the 25 teachers who made strategic decisions for which a search strategy was reported, 9 (69.2 percent) reported decisions which needed a low amount of information grasp, and 16 (43.2 percent) reported decisions which needed a high amount.

TABLE 40

RELATIONSHIP BETWEEN SEARCH STRATEGY USED AND PERCEIVED AMOUNT OF INFORMATION GRASP NEEDED: STRATEGIC DECISIONS

<table>
<thead>
<tr>
<th>Search Strategy Used</th>
<th>Perceived Amount of Information Grasp Needed</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>High</td>
<td>Total</td>
</tr>
<tr>
<td>Non-Search</td>
<td>4</td>
<td>21</td>
<td>25</td>
</tr>
<tr>
<td>Search</td>
<td>9</td>
<td>16</td>
<td>25</td>
</tr>
<tr>
<td>TOTAL</td>
<td>13</td>
<td>37</td>
<td>50</td>
</tr>
</tbody>
</table>

Corrected Chi Square = 1.66; 1 df; p > .05.

The hypothesis was stated in the null form:

$H_0$: The variables "search strategy used" and "amount of information grasp needed" for making educational decisions classified as strategic are independent (not associated).

The alternative hypothesis was stated as:
The variables "search strategy used" and "amount of information grasp needed" for making educational decisions classified as strategic are dependent (associated).

These data are presented in Table 40.

The null hypothesis was accepted. When teachers make educational decisions which are perceived to have a low degree of risk (strategic decisions), the amount of information grasp needed to make the decision is not related to the search strategy used (non-search or search).

This study had four variables which dealt with the valuing dimension of the decision-making process. One was the foregoing amount of information grasp needed to make the educational decision. Another was concerned with the degree of change which the decision would precipitate. Table 41 reports the data on the degree of change variable and the search strategy used for determining action alternatives. Of the 174 decisions reported, 51 were perceived as precipitating a low degree of change, and 123 were perceived as precipitating a high degree of change. Of the decisions for which a non-search strategy was reported, 27 (52.9 percent) were perceived as precipitating a low degree of change, and 56 (45.5 percent) were perceived by the teachers as precipitating a high degree of change. Of the 91 decisions for which a search strategy for determining action alternatives was reported, 24 (47.1 percent) were perceived as precipitating a low degree of change.
of change, and 67 (54.5 percent) a high degree.

The hypothesis was stated in the null form:

\[ H_0: \text{The variables "search strategy used" and "degree of change" are independent (not associated).} \]

The alternative hypothesis was stated as:

\[ H_1: \text{The variables "search strategy used" and "degree of change" are dependent (associated).} \]

The null hypothesis was accepted.

In educational decision making by teachers, perception of the degree of change which would be precipitated by the decision is not related to the search strategy used (non-search and search).

**TABLE 41**

RELATIONSHIP BETWEEN SEARCH STRATEGY USED AND PERCEIVED DEGREE OF CHANGE PRECIPITATED BY THE DECISION

<table>
<thead>
<tr>
<th>Search Strategy Used</th>
<th>Perceived Degree of Change Precipitated by Decision</th>
<th>( f )</th>
<th>%</th>
<th>( f )</th>
<th>%</th>
<th>( f )</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>High</td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Search</td>
<td>27</td>
<td>52.9</td>
<td>56</td>
<td>45.5</td>
<td>83</td>
<td>47.7</td>
<td></td>
</tr>
<tr>
<td>Search</td>
<td>24</td>
<td>47.1</td>
<td>67</td>
<td>54.5</td>
<td>91</td>
<td>52.3</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>51</td>
<td>100.0</td>
<td>123</td>
<td>100.0</td>
<td>174</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Corrected Chi Square = 0.52; 1 df; \( p > .05 \).
The relationship between the degree of change variable and the search strategy used was identified for decisions which were perceived as having a high (tactical decisions) and a low (strategic decisions) degree of risk. Data for tactical decisions are reported in Table 42. Of the 127 teachers who made decisions which were classified as tactical, and who rated the degree of change variable, 35 perceived the decisions as precipitating a low degree of change, and 91 perceived the decision as precipitating a high degree of change. Of the 68 teachers who used a search strategy, 15 (42.9 percent) perceived the decisions as precipitating a low degree of change, and 53 (58.2 percent) a high degree. Of the 58 teachers who made tactical decisions and reported the use of a non-search strategy for determining action alternatives, 20 or 57.1 percent perceived the decisions as precipitating a low degree of change, and 38 (41.8 percent) a high degree of change.

The hypothesis was stated in the null form:

\[ H_0: \text{The variables "search strategy used" and "degree of change" for decisions classified as tactical are independent (not associated).} \]

The alternative hypothesis was stated:

\[ H_1: \text{The variables "search strategy used" and "degree of change" for decisions classified as tactical are dependent (associated).} \]
TABLE 42
RELATIONSHIP BETWEEN SEARCH STRATEGY USED AND PERCEIVED DEGREE OF CHANGE PRECIPITATED: TACTICAL DECISIONS

<table>
<thead>
<tr>
<th>Search Strategy Used</th>
<th>Perceived Degree of Change</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>High</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>Non-Search</td>
<td>20</td>
<td>38</td>
<td>58</td>
<td>46.0</td>
</tr>
<tr>
<td>Search</td>
<td>15</td>
<td>53</td>
<td>68</td>
<td>54.0</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>35</td>
<td>91</td>
<td>126</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Corrected Chi Square = 1.83; 1 df; p > .05.

The null hypothesis was accepted.

When teachers make educational decisions which are perceived as having a high degree of risk (tactical decisions) the degree of change which would be precipitated by the decisions is not related to the search strategy used (search or non-search).

The relationship of the degree of change variable and the search strategy used was identified for strategic decisions. Forty-eight of the teachers who reported decisions which were classified as strategic rated the degree of change variable. Sixteen of these teachers perceived the decision as precipitating a low degree of change, and 32 perceived the decision as precipitating a high degree of change. Teachers reported using a non-search strategy for 25 of these decisions (7 or 43.8 percent perceived...
the decision as precipitating a low degree of change and 18 or 56.2 percent a high degree). Twenty-three teachers who reported decisions which were classified as strategic indicated the use of a search strategy. Nine teachers (56.2 percent) perceived the decisions as precipitating a low degree of change and 14 teachers (43.8 percent) a high degree. These data are reported in Table 43.

The hypothesis was stated in the null form:

$H_0$: The variables "search strategy used" and "degree of change" for decisions classified as strategic are independent (not associated).

**TABLE 43**

RELATIONSHIP BETWEEN SEARCH STRATEGY USED AND PERCEIVED DEGREE OF CHANGE PRECIPITATED: STRATEGIC DECISIONS

<table>
<thead>
<tr>
<th>Search Strategy Used</th>
<th>Perceived Degree of Change</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>High</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
</tr>
<tr>
<td>Non-Search</td>
<td>7</td>
<td>43.8</td>
<td>18</td>
<td>56.2</td>
</tr>
<tr>
<td>Search</td>
<td>9</td>
<td>56.2</td>
<td>14</td>
<td>43.8</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>16</td>
<td>100.0</td>
<td>32</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Corrected Chi Square = 0.26; 1 df; p > .05.
The alternative hypothesis was stated:

\[ H_1: \text{The variables "search strategy used" and "degree of change" for decisions classified as strategic are dependent (associated).} \]

Since the Chi square obtained was not significant at the .05 level the null hypothesis was accepted.

When teachers make educational decisions which are classified as strategic (low degree of risk), the degree of change which the decision would precipitate is not related to the search strategy used (non-search or search).

Another independent variable in the valuing dimension of decision making and in this group of perceptions by teachers, was the degree of conflict manifested in the decisions. One hundred and seventy-three teachers rated the variable. Of the 173 decisions reported, 97 teachers perceived the decisions as manifesting a low degree of conflict, and 74 a high degree of conflict. Of the 92 teachers who reported decisions for which a search strategy for determining action alternatives was used, 50 (51.5 percent) perceived the decision as manifesting a low degree of conflict, and 42 (56.8 percent) a high degree of conflict. The teachers who rated the variable reported 79 decisions for which a non-search strategy for determining action alternatives was used; 47 of these teachers
(48.5 percent) perceived the decision as manifesting a low degree of conflict, and 32 (43.2 percent) a high degree. Data on these variables are given on Table 44.

**TABLE 44**

RELATIONSHIP BETWEEN SEARCH STRATEGY USED AND PERCEIVED DEGREE OF CONFLICT MANIFESTED IN THE DECISIONS

<table>
<thead>
<tr>
<th>Search Strategy Used</th>
<th>Perceived Degree of Conflict Manifested in the Decisions</th>
<th>Low</th>
<th>High</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
</tr>
<tr>
<td>Non-Search</td>
<td></td>
<td>47</td>
<td>48.5</td>
<td>32</td>
</tr>
<tr>
<td>Search</td>
<td></td>
<td>50</td>
<td>51.5</td>
<td>42</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td>97</td>
<td>100.0</td>
<td>74</td>
</tr>
</tbody>
</table>

Corrected Chi Square = 0.27; 1 df; p > .05.

The hypothesis was stated in the null form:

\[ H_0 : \text{The variables "search strategy used" and "degree of conflict" are independent (not associated).} \]

The alternative hypothesis was stated as:

\[ H_1 : \text{The variables "search strategy used" and "degree of conflict" are dependent (associated).} \]

The null hypothesis was accepted and the research hypothesis was rejected.
In educational decision making by teachers, perception of the degree of conflict manifested in the decision is not related to the search strategy used (non-search and search).

The relationship between the degree of conflict manifested in the decision and the search strategy used was identified for both classifications of the decisions--tactical and strategic.

One hundred and twenty-five of the teachers who rated the variable, degree of conflict, reported decisions which were classified as tactical. Sixty-two of these teachers perceived the decision as manifesting a low degree of conflict and 61 perceived the decision as manifesting a high degree. Of the 55 teachers who reported tactical decisions and the use of a non-search strategy, 28 (45.2 percent) perceived the decisions as manifesting a low degree of conflict and 27 (44.3 percent) a high degree.

The search strategy was used for 68 of the tactical decisions. Thirty-four of the teachers (54.8 percent) perceived the decisions as manifesting a low degree of conflict and 34 (55.7 percent) a high degree.

The hypothesis was stated in the null form:

\[ H_0: \text{The variables "search strategy used" and "degree of conflict" for decisions classified as tactical, are independent (not associated).} \]

The alternative hypothesis was stated as:
$H_1$: The variables "search strategy used" and "degree of conflict" for decisions classified as tactical, are dependent (associated).

These data are given in Table 45.

**TABLE 45**

RELATIONSHIP BETWEEN SEARCH STRATEGY USED AND PERCEIVED DEGREE OF CONFLICT: TACTICAL DECISIONS

<table>
<thead>
<tr>
<th>Perceived Degree of Conflict</th>
<th>Search Strategy Used</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>f</td>
<td>%</td>
</tr>
<tr>
<td>Non-Search</td>
<td>28</td>
<td>45.2</td>
<td>27</td>
</tr>
<tr>
<td>Search</td>
<td>34</td>
<td>54.8</td>
<td>34</td>
</tr>
<tr>
<td>TOTAL</td>
<td>62</td>
<td>100.0</td>
<td>61</td>
</tr>
</tbody>
</table>

Corrected Chi Square = 0.01; 1 df; $p > .05$.

The null hypothesis was accepted.

When teachers make educational decisions which are classified as tactical, perception of the degree of conflict manifested in the decision is not related to the search strategy used (non-search or search).

Data on the relationship of perceptions of the teachers of the degree of conflict manifested in the decisions and the search strategies used for the decisions which were classified as strategic are reported in Table 46.
Forty-eight teachers who rated this variable reported decisions which were classified as strategic and both levels of the search strategies were used with an equal number of frequencies. Of the twenty-four teachers who reported that a non-search strategy was used, 19 (54.3 percent) perceived the decisions as manifesting a low degree of conflict and 5 (38.5 percent) a high degree. Of those teachers who made strategic decisions and reported that a search strategy was used, 16 (45.7 percent) perceived the decisions as manifesting a low degree of conflict and 8 (61.5 percent) a high degree.

The hypothesis was stated in the null form:

\[ H_0: \] The variables "search strategy used" and "degree of conflict" for decisions classified as strategic are independent (not associated).

The alternative hypothesis was stated:

\[ H_1: \] The variables "search strategy used" and "degree of conflict" for decisions classified as strategic are dependent (associated).

As was noted with decisions classified as tactical, the Chi square was not statistically significant on these two variables. The null hypothesis was accepted. When teachers make educational decisions which are
classified as strategic, perception of the degree of conflict manifested in
the decision is not related to the search strategy used (non-search or
search).

**TABLE 46**

RELATIONSHIP BETWEEN SEARCH STRATEGY USED AND PERCEIVED
DEGREE OF CONFLICT: STRATEGIC DECISIONS

<table>
<thead>
<tr>
<th>Search Strategy Used</th>
<th>Perceived Degree of Conflict</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low (f)</td>
<td>%</td>
<td>High (f)</td>
<td>%</td>
</tr>
<tr>
<td>Non-Search</td>
<td>19</td>
<td>54.3</td>
<td>5</td>
<td>38.5</td>
</tr>
<tr>
<td>Search</td>
<td>16</td>
<td>45.7</td>
<td>8</td>
<td>61.5</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>35</td>
<td>100.0</td>
<td>13</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Corrected Chi Square = 0.42; 1 df; p > .05.

The teachers in this study were asked to rate the degree of ambiguity
perceived in the decisions reported. The data for the search strategy used
and the variable of degree of ambiguity are reported in Table 47. One
hundred and twelve teachers (of the 166 who rated this variable) perceived
the decisions as having a low degree of ambiguity, and 51 a high degree.
Seventy-eight teachers reported that a non-search strategy was used. Of
these, 58 (51.8 percent) perceived the decisions as having a low degree of
ambiguity, and 20 (39.2 percent), a high degree. Eighty-five teachers
TABLE 47

RELATIONSHIP BETWEEN SEARCH STRATEGY USED AND PERCEIVED 
DEGREE OF AMBIGUITY IN THE DECISIONS

<table>
<thead>
<tr>
<th>Search Strategy Used</th>
<th>Perceived Degree of Ambiguity</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>%</td>
<td>High</td>
<td>%</td>
</tr>
<tr>
<td>Non-Search</td>
<td>58</td>
<td>51.8</td>
<td>20</td>
<td>39.2</td>
</tr>
<tr>
<td>Search</td>
<td>54</td>
<td>48.2</td>
<td>31</td>
<td>60.8</td>
</tr>
<tr>
<td>TOTAL</td>
<td>112</td>
<td>100.0</td>
<td>51</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Corrected Chi Square = 1.74; 1 df; p > .05.

reported that a search strategy was used for determining action alternatives. Fifty-four of these teachers (48.2 percent) perceived the decisions as having a low degree of ambiguity, and 31 (60.8 percent), a high degree.

Data on the degree of ambiguity and the search strategy used were submitted to the statistical test of significance. The hypothesis was stated in the null form:

$H_0$: The variables "search strategy used" and "degree of ambiguity" are independent (not associated).

The alternative hypothesis was stated:

$H_1$: The variables "search strategy used" and "degree of ambiguity" are dependent (associated).

These data are presented in Table 47.
The null hypothesis was accepted.

In educational decision making, the teacher's perception of the degree of ambiguity in the decision is not related to the search strategy used (non-search or search).

The relationship between the search strategy used and perceptions of the degree of ambiguity in the decision was identified for both classifications of decisions—tactical and strategic.

One hundred and seventeen of the teachers who reported decisions which were classified as tactical rated the degree of ambiguity variable. Seventy-nine of the teachers perceived the decisions as having a low degree of ambiguity and 38, a high degree. Of the 53 teachers who reported tactical decisions and the use of a non-search strategy, 38 (48.1 percent) perceived the decisions as having a low degree of ambiguity, and 15 (39.5 percent) a high degree. Sixty-four of the teachers who made decisions classified as tactical rated the degree of ambiguity variable and reported using a search strategy. Forty-one teachers (51.9 percent) perceived the decisions as having a low degree of ambiguity and 23 (60.5 percent) a high degree. These data were submitted to the statistical test of significance and are reported in Table 48.

The hypothesis was stated in the null form:

\[ H_0: \text{The variables "search strategy used" and "degree of ambiguity" for decisions classified as tactical are} \]
The alternative hypothesis was stated as:

\[ H_1: \quad \text{The variables "search strategy used" and "degree of ambiguity" for decisions classified as tactical are dependent (associated).} \]

This finding was not statistically significant at the .05 level so the null hypothesis was accepted. When teachers make educational decisions classified as tactical, perception of the degree of ambiguity in the decision is not related to the search strategy used for determining action alternatives (non-search or search).

TABLE 48

RELATIONSHIP BETWEEN SEARCH STRATEGY USED AND PERCEIVED DEGREE OF AMBIGUITY: TACTICAL DECISIONS

<table>
<thead>
<tr>
<th>Search Strategy Used</th>
<th>Perceived Degree of Ambiguity</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>%</td>
<td>High</td>
<td>%</td>
<td>Total</td>
</tr>
<tr>
<td>Non-Search</td>
<td>38</td>
<td>48.1</td>
<td>15</td>
<td>39.5</td>
<td>53</td>
</tr>
<tr>
<td>Search</td>
<td>41</td>
<td>51.9</td>
<td>23</td>
<td>60.5</td>
<td>64</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>79</td>
<td>100.0</td>
<td>38</td>
<td>100.0</td>
<td>117</td>
</tr>
</tbody>
</table>

Corrected Chi Square = 0.46; 1 df; p > .05.
The relationship between the degree of ambiguity and the search strategy used was also identified for decisions which were perceived as having a low degree of risk.

Forty-six teachers rated the degree of ambiguity variable and reported decisions which were classified as strategic. Thirty-three of these teachers perceived the decisions as having a low degree of ambiguity and 13 a high degree. Twenty-five of the teachers reported the use of a non-search strategy (20 or 60.6 percent perceived the decisions as having a low degree of ambiguity and 5 or 38.5 percent, a high degree of ambiguity). Of the 21 teachers who rated the variable and reported using a search strategy, 13 (39.4 percent) perceived the decisions as having a low degree of ambiguity and 8 (61.5 percent) a high degree. Data on these variables are reported in Table 49.

The hypothesis was stated in the null form:

\[ H_0: \text{The variables "search strategy used" and "degree of ambiguity" for decisions classified as strategic are independent (not associated).} \]

The alternative hypothesis was stated as:

\[ H_1: \text{The variables "search strategy used" and "degree of ambiguity" for decisions classified as strategic are dependent (associated).} \]
TABLE 49

RELATIONSHIP BETWEEN SEARCH STRATEGY AND THE PERCEIVED
DEGREE OF AMBIGUITY: STRATEGIC DECISIONS

<table>
<thead>
<tr>
<th>Search Strategy Used</th>
<th>Perceived Degree of Ambiguity</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>High</td>
<td>Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Search</td>
<td>20</td>
<td>5</td>
<td>25</td>
<td>54.3</td>
<td></td>
</tr>
<tr>
<td>Search</td>
<td>13</td>
<td>8</td>
<td>21</td>
<td>45.7</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>33</td>
<td>13</td>
<td>46</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Corrected Chi Square = 1.06; 1 df; p > .05.

The null hypothesis was accepted. When teachers make educational decisions which are classified as strategic, the degree of ambiguity perceived in the decision is not related to the search strategy used (non-search or search).

The use of search strategies for action alternatives was examined with the perceptions of the urgency of time variable. Of the teachers who reported the use of non-search strategy and rated the time variable, 19 (40.4 percent) perceived a low degree of urgency of time and 63 (49.2 percent) a high degree. Ninety-three of the teachers rating the variable reported the use of the search strategy. Of these, 28 (59.6 percent) perceived a low degree of urgency of time, and 65 (50.8 percent), a high degree. As reported in Table 50, both categories of the dependent
variable reported by teachers who perceived a high degree of urgency of time in making the decisions.

**TABLE 50**

**RELATIONSHIP BETWEEN SEARCH STRATEGY USED AND PERCEIVED DEGREE OF URGENCY OF TIME**

<table>
<thead>
<tr>
<th>Search Strategy Used</th>
<th>Low</th>
<th>High</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Non-Search</td>
<td>19</td>
<td>63</td>
<td>82</td>
</tr>
<tr>
<td>Search</td>
<td>28</td>
<td>65</td>
<td>93</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>47</td>
<td>128</td>
<td>115</td>
</tr>
</tbody>
</table>

Corrected Chi Square = 0.74; 1 df; \( p > .05 \).

The hypothesis was stated in the null form:

\( H_0 \): The variables "search strategy used" and "degree of urgency of time" are independent (not associated).

The alternative hypothesis was stated:

\( H_1 \): The variables "search strategy used" and "degree of urgency of time" are dependent (associated).

The null hypothesis was accepted. The teacher's perception of the degree of urgency of time for making educational decisions is not related
to the search strategy used for determining action alternatives (search or non-search).

The relationship of the search strategy used and the perception of the degree of urgency of time was identified for both classifications of decisions—tactical and strategic.

As reported in Table 51, one hundred and twenty-seven teachers who made decisions classified as tactical rated the degree of urgency of time variable. Of these teachers, 34 perceived a low urgency of time in making the decision and 93 a high urgency of time. Sixty-nine teachers reported using a search strategy (54.3 percent of the total). Nineteen of these teachers (55.9 percent) perceived the urgency of time as low and 50 (53.8 percent) perceived a high urgency of time. Fifty-eight teachers (45.7 percent) who reported tactical decisions and who rated the time variable reported using a non-search strategy. Fifteen of these teachers (44.1 percent) perceived the urgency of time as low and 43 teachers (46.2 percent) perceived the urgency of time as high.

The hypothesis was stated in the null form:

\[ H_0: \text{The variables "search strategy used" and "degree of urgency of time" for decisions classified as tactical are independent (not associated).} \]

The alternative hypothesis was stated:

\[ H_1: \text{The variables "search strategy used" and the "degree} \]
of urgency of time" for decisions classified as tactical are dependent (associated).

Chi square was not significant at the .05 level; the null hypothesis was accepted. When teachers make educational decisions which are classified as tactical, perception of the urgency of time is not related to the search strategy used for determining action alternatives (non-search or search).

**TABLE 51**

**RELATIONSHIP BETWEEN SEARCH STRATEGY USED AND PERCEIVED DEGREE OF URGENCY OF TIME: TACTICAL DECISIONS**

<table>
<thead>
<tr>
<th>Search Strategy Used</th>
<th>Low</th>
<th></th>
<th>High</th>
<th></th>
<th>Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
</tr>
<tr>
<td>Non-Search</td>
<td>15</td>
<td>44.1</td>
<td>43</td>
<td>46.2</td>
<td>58</td>
<td>45.7</td>
</tr>
<tr>
<td>Search</td>
<td>19</td>
<td>55.9</td>
<td>50</td>
<td>53.8</td>
<td>69</td>
<td>54.3</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>34</td>
<td>100.0</td>
<td>93</td>
<td>100.0</td>
<td>127</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Corrected Chi Square = 0.00; 1 df; p > .05.

The relationship between the search strategy used and the degree of urgency of time was identified for decisions which were perceived as having a low degree of risk—strategic decisions.

Forty-eight of the teachers reported decisions which were classified as strategic and rated the degree of urgency of time variable. Thirteen of
these teachers perceived the urgency of time as low and 35 teachers perceived the urgency of time as high. Twenty-four (50.0 percent) of the teachers reported using a non-search strategy and 24 reported using a search strategy for action alternatives. Of those reporting a non-search strategy, 4 (30.8 percent) perceived the urgency of time as low and 20 teachers (57.1 percent) perceived the urgency of time as high. Nine (69.2 percent) of the teachers who used a search strategy perceived the urgency of time as low and 15 (42.9 percent) perceived the urgency of time as high. These data are reported in Table 52.

TABLE 52

RELATIONSHIP BETWEEN SEARCH STRATEGY USED AND PERCEIVED DEGREE OF URGENCY OF TIME: STRATEGIC DECISIONS

<table>
<thead>
<tr>
<th>Search Strategy Used</th>
<th>Perceived Degree of Urgency of Time</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>High</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Non-Search</td>
<td>4</td>
<td>30.8</td>
<td>20</td>
<td>57.1</td>
<td>24</td>
</tr>
<tr>
<td>Search</td>
<td>9</td>
<td>69.2</td>
<td>15</td>
<td>42.9</td>
<td>24</td>
</tr>
<tr>
<td>TOTAL</td>
<td>13</td>
<td>100.0</td>
<td>35</td>
<td>100.0</td>
<td>48</td>
</tr>
</tbody>
</table>

Corrected Chi Square = 1.69; 1 df; p > .05.

The hypothesis was stated in the null form:

$H_0$: The variables "search strategy used" and "degree of urgency of time" for decisions classified as strategic
The research hypothesis was stated:

\[ H_1: \text{The variables } "\text{search strategy used}" \text{ and } "\text{degree of urgency of time}" \text{ for decisions classified as strategic are dependent (associated).} \]

The Chi square was calculated and reported. This was not significant; therefore the null hypothesis was accepted. Perception of the degree of urgency of time by teachers who make educational decisions classified as strategic is not related to the search strategy used (non-search or search).

In addition to the amount of information grasp, degree of conflict, and degree of change variables which were used in the study as value indicators in the valuing dimension of the decision making schema, the respondents rated one other value indicator--the level of satisfaction experienced in the decision.

One hundred and seventy-three of the teachers rated the level of satisfaction experienced in making the educational decision. Of this number, 42 teachers perceived the level of satisfaction as low, and 131, as high. Ninety-two or 53.2 percent of the teachers reported the use of a search strategy for action alternatives and 81 (46.8 percent) reported using a non-search strategy. Of those who reported using a search
strategy, 23 teachers (54.8 percent) perceived a low level of satisfaction and 69 (52.7 percent), a high level of satisfaction in making the decision. Of the 81 teachers who reported the use of a non-search strategy, 19 (45.2 percent) reported a low level of satisfaction and 39 (41.9 percent), a high level. These data are reported in Table 53.

**TABLE 53**

RELATIONSHIP BETWEEN SEARCH STRATEGY USED AND LEVEL OF SATISFACTION EXPERIENCED

<table>
<thead>
<tr>
<th>Search Strategy Used</th>
<th>Level of Satisfaction Experienced</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>%</td>
</tr>
<tr>
<td>Non-Search</td>
<td>19</td>
<td>45.2</td>
</tr>
<tr>
<td>Search</td>
<td>23</td>
<td>54.8</td>
</tr>
<tr>
<td>TOTAL</td>
<td>42</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Corrected Chi Square = 0.00; 1 df; p > .05.

The hypothesis was stated in the null form:

\[ H_0: \text{The variables "search strategy used" and "level of satisfaction" are independent (not associated).} \]

The alternative hypothesis was stated as:

\[ H_1: \text{The variables "search strategy used" and "level of satisfaction" are dependent (associated).} \]

The null hypothesis was accepted.
In making educational decisions, the teacher's perception of the level of satisfaction experienced is not related to the search strategy used for determining action alternatives (non-search or search).

The relationship between the search strategy used and the level of satisfaction experienced in making both tactical and strategic decisions was identified.

One hundred and twenty-five of the teachers who reported decisions which were classified as tactical rated the level of satisfaction variable. Thirty-five of the teachers reported a low level of satisfaction and 90 a high level. Sixty-eight of the teachers reported the use of a search strategy. Nineteen of these teachers (54.3 percent) reported a low level of satisfaction, and 49 (54.4 percent), a high level. Fifty-seven teachers who rated this variable reported the use of a non-search strategy. Sixteen (45.7 percent), reported a low level of satisfaction and 41 (45.6 percent), a high level. These data are reported in Table 54.

The hypothesis was stated in the null form:

\[ H_0: \text{The variables "search strategy used" and "level of satisfaction" for decisions classified as tactical are independent (not associated).} \]

The alternative hypothesis was stated as:

\[ H_1: \text{The variables "search strategy used" and "level of satisfaction" for decisions classified as tactical are not independent (associated).} \]
satisfaction" for decisions classified as tactical are dependent (associated).

The null hypothesis was accepted.

When teachers make educational decisions which are classified as tactical, perception of the level of satisfaction experienced in making the decision is not related to the search strategy used (non-search or search).

**TABLE 54**

RELATIONSHIP BETWEEN SEARCH STRATEGY USED AND PERCEIVED LEVEL OF SATISFACTION: TACTICAL DECISIONS

<table>
<thead>
<tr>
<th>Search Strategy Used</th>
<th>Perceived Level of Satisfaction</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>%</td>
<td>High</td>
</tr>
<tr>
<td>Non-Search</td>
<td>16</td>
<td>45.7</td>
<td>41</td>
</tr>
<tr>
<td>Search</td>
<td>19</td>
<td>54.3</td>
<td>49</td>
</tr>
<tr>
<td>TOTAL</td>
<td>35</td>
<td>100.0</td>
<td>90</td>
</tr>
</tbody>
</table>

Corrected Chi Square = 0.03; 1 df; p > .05.

Data on the relationship between these variables (search strategy used and level of satisfaction) for decisions perceived as having a low degree of risk are shown in Table 55.

Forty-eight teachers who reported decisions which were classified as strategic, rated the level of satisfaction variable. Seven reported a low level of satisfaction and 41, a high level. The same number of frequencies
was reported for the two categories of the dependent variable. For the teachers who reported the use of a non-search strategy, 3 (42.9 percent) reported a low level of satisfaction and 21 (51.2 percent), a high level. Of the teachers who reported the use of a search strategy for these strategic decisions, 4 (57.1 percent) reported a low level of satisfaction and 20 (48.8 percent), a high level.

**TABLE 55**

**RELATIONSHIP BETWEEN SEARCH STRATEGY USED AND PERCEIVED LEVEL OF SATISFACTION: STRATEGIC DECISIONS**

<table>
<thead>
<tr>
<th>Search Strategy Used</th>
<th>Low</th>
<th>%</th>
<th>High</th>
<th>%</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Search</td>
<td>3</td>
<td>42.9</td>
<td>21</td>
<td>51.2</td>
<td>24</td>
<td>50.0</td>
</tr>
<tr>
<td>Search</td>
<td>4</td>
<td>57.1</td>
<td>20</td>
<td>48.8</td>
<td>24</td>
<td>50.0</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>7</td>
<td>100.0</td>
<td>41</td>
<td>100.0</td>
<td>48</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Corrected Chi Square = 0.00; 1 df; \( p > .05 \).

The hypothesis was stated in the null form:

\( H_0: \) The variables "search strategy used" and "level of satisfaction" for decisions classified as strategic are independent (not associated).

The alternative hypothesis was stated as:
H$_1$: The variables "search strategy used" and "level of satisfaction" for decisions classified as strategic are dependent (associated).

The null hypothesis was accepted.

When teachers make decisions which are classified as strategic, perception of the level of satisfaction experienced is not related to the search strategy used (non-search or search).

Summary of Analysis of Data: Relationships of Variables

Twenty-five null hypotheses were developed for this study which dealt with the relationships of search strategies used for determining action alternatives in educational decision making by vocational teachers. Two of the hypotheses were rejected indicating a significant relationship between the variables of search strategy used and (1) the kind of decision and (2) kind of decision when the decisions were classified as tactical.

Twenty-three of the null hypotheses were accepted. There was not a significant relationship between the search strategy used and (1) classification of decisions---tactical and strategic, (2) kind of decision when the decisions were classified as strategic, and (3) types of decisions (whether tactical or strategic).
Additionally, there was not a significant relationship between the search strategy used and the teachers' perceptions of these selected variables (neither collectively nor for either classification of the decisions—tactical and strategic): (4) amount of information grasp needed, (5) degree of change precipitated by the decision, (6) degree of conflict manifested in the decisions, (7) level of satisfaction, and (8) degree of ambiguity, and (9) degree of urgency of time. These data are summarized in Table 56.
TABLE 56
SUMMARY OF SEARCH STRATEGY USED X INDEPENDENT VARIABLES AND \( \chi^2 \) VALUES OBTAINED

<table>
<thead>
<tr>
<th>SEARCH STRATEGIES USED BY</th>
<th>( \chi^2 ) VALUES OBTAINED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classification of Decisions</td>
<td>0.08</td>
</tr>
<tr>
<td>Kinds of Decisions</td>
<td>12.28*</td>
</tr>
<tr>
<td>Kinds of Decisions (Tactical)</td>
<td>8.20*</td>
</tr>
<tr>
<td>Kinds of Decisions (Strategic)</td>
<td>4.02</td>
</tr>
<tr>
<td>Types of Decisions</td>
<td>2.11</td>
</tr>
<tr>
<td>Types of Decisions (Tactical)</td>
<td>2.94</td>
</tr>
<tr>
<td>Types of Decisions (Strategic)</td>
<td>2.14</td>
</tr>
<tr>
<td>Amount of Information Grasp Needed</td>
<td>0.02**</td>
</tr>
<tr>
<td>Amount of Information Grasp Needed (Tactical)</td>
<td>0.62**</td>
</tr>
<tr>
<td>Amount of Information Grasp Needed (Strategic)</td>
<td>1.66**</td>
</tr>
<tr>
<td>Degree of Change</td>
<td>0.52**</td>
</tr>
<tr>
<td>Degree of Change (Tactical)</td>
<td>1.83**</td>
</tr>
<tr>
<td>Degree of Change (Strategic)</td>
<td>0.25**</td>
</tr>
<tr>
<td>Degree of Conflict</td>
<td>0.27**</td>
</tr>
<tr>
<td>Degree of Conflict (Tactical)</td>
<td>0.01**</td>
</tr>
<tr>
<td>Degree of Conflict (Strategic)</td>
<td>0.12**</td>
</tr>
<tr>
<td>Degree of Ambiguity</td>
<td>1.74**</td>
</tr>
<tr>
<td>Degree of Ambiguity (Tactical)</td>
<td>0.16**</td>
</tr>
<tr>
<td>Degree of Ambiguity (Strategic)</td>
<td>1.06**</td>
</tr>
<tr>
<td>Degree of Urgency of Time</td>
<td>0.74**</td>
</tr>
<tr>
<td>Degree of Urgency of Time (Tactical)</td>
<td>0.00**</td>
</tr>
<tr>
<td>Degree of Urgency of Time (Strategic)</td>
<td>1.69**</td>
</tr>
<tr>
<td>Level of Satisfaction</td>
<td>0.00**</td>
</tr>
<tr>
<td>Level of Satisfaction (Tactical)</td>
<td>0.03**</td>
</tr>
<tr>
<td>Level of Satisfaction (Strategic)</td>
<td>0.00**</td>
</tr>
</tbody>
</table>

* Significant at .05  
** Corrected Chi Square
CHAPTER V

SUMMARY, CONCLUSIONS, IMPLICATIONS FOR FURTHER RESEARCH AND RECOMMENDATIONS

Summary

Introduction

The growing expectation on the part of government leaders, industrial executives, educational administrators and the general public that scientific knowledge should be useful has focused attention on the demand that information pertaining to that knowledge should be organized in such a way that it can be provided, obtained, and utilized for judging action alternatives for decision making.

The primary role of an information dissemination system is to provide information for decision-making. The objectives of an information system are based on the needs arising from the significant problems of important user groups. Target audiences for the information system for vocational and technical education have been identified. The major professional problem areas and the information-seeking practices used by state supervisors, teacher educators, state directors, and local administrators have been determined and described. Classroom teachers, who comprise
the largest target audience, are often at the lower level of the administrative hierarchy, and serve as decision makers in education.

There appears to exist in practice two types of problematic situations. In one, the alternatives are given and the teacher is required to make a choice. In the other, part of the problem involves the search for alternatives. When an educational decision needs to be made, the teacher is at a decision point and will need to identify and examine alternatives.

Decision making as it relates to administrative behavior in education has been identified. There is a paucity of information about the teacher, who, as an educational practitioner in the 1970's, is provided alternatives and options in increasing numbers through educational products and research and development outputs.

Like prior research studies on the utilization of information by vocational and technical educators, this study used the problem-solving phase of diffusion and change. However, through the identification of characteristics of micro-component behavior, this study attempted to capture a point in time between the awareness and design stages of decision making and between the hesitancy and knowledge phases of decision.

Purpose

The general purpose of this study was to describe the relationships between the strategy used by vocational teachers for determining the options
for decision making and the (1) classification of decisions, (2) kind of decisions, (3) type of decisions, and (3) teachers' perceptions of six selected variables.

Specific Objectives

Two objectives were developed:

1. To describe the relationship between the frequency with which vocational teachers used the strategy of search or non-search for determining action alternatives and the frequency with which they made educational decisions which were classified as tactical and strategic;

2. For both classifications of decisions (tactical and strategic):

   2.1 To identify the relationship between the use of the strategy of search or non-search for determining action alternatives and the kind of educational decisions made by vocational teachers (qualitative, action, and quantitative).

   2.2 To identify the relationship between the use of search or non-search strategies for determining action alternatives and the type of educational decisions made by vocational teachers (planning, implementing, structuring, and recycling).
2.3 To identify the relationship between the use of the strategy of search or non-search for determining action alternatives and the teachers' perceptions of six selected variables, i.e. (1) amount of informational grasp needed to make the educational decisions; (2) degree of change which the decisions would precipitate; (3) degree of conflict manifested in the decisions; (4) degree of ambiguity in the decisions; (5) degree of urgency of time; and (6) level of satisfaction.

Population and Sample

Through randomization, 300 sampling units were selected from a frame of 998 vocational and technical teachers in West Virginia. The date of return of the survey instruments was monitored and the respondents were identified as early, middle, late, and late-late respondents. Hypotheses in the null form were developed to investigate the independence (lack of association) between the search strategy used and the date of response for tactical and strategic, qualitative, action, quantitative, planning, structuring, implementing, and recycling decisions. The reason for this was to investigate whether non-respondents would be likely to make responses similar to respondents. All of the null hypotheses were
accepted except one; the null hypothesis was rejected indicating a statistically significant relationship between the use of a search or a non-search strategy and the date of response when the teachers made qualitative decisions. If the sample of late-late respondents was representative of non-respondents, the data suggest that non-respondents would tend to be teachers who frequently use a search strategy when making qualitative decisions.

**Design**

The study utilized survey research for describing relationships. The research design (1) necessitated the development and pilot testing of a survey instrument (see Appendix A); (2) involved three mailings of the instrument and accompanying explanatory letters to each sampling unit (see Appendix B); and (3) telephone calls to a random sample of non-respondents (those who had not at that particular point in time, responded to the third mailing of the questionnaire).

One hundred and ninety-three (64.3 percent of the 300) of the survey instruments were returned; 180 (60.0 percent) of the questionnaires were usable and reported as data in this study. Twenty-one of the respondents were called "late-late," i.e., those who returned the survey instrument following the telephone calls.
A special effort was made to minimize frame, selection, non-response, and measurement errors. However, three of the questionnaires were returned from the sampling units with a statement that they (1) were no longer teaching, (2) were no longer teaching vocational subjects, or (3) retired from teaching. One respondent returned two forms (an error was avoided through the technique of the assignment of respondent numbers for monitoring the response rate).

Data and Instrumentation

Various methods were used to attempt to increase the response rate. One threat to the internal validity of this study was recognized in the development stage of the survey instrument. This was the interaction of the subjects to the treatment (survey instrument). Attempts to monitor this were made during the pilot test and for subsequent revisions of the instrument.

A limited amount of demographic data was obtained for descriptive purposes. The intent of the questionnaire was to solicit responses from the participants (in addition to the variables in the objectives) on: (1) a written statement of the decision problem; (2) a rating on the degree of risk perceived in the decision-making process; (3) an indication of the intent of the search behavior; (4) contingency relationships; (5) whether the decisions would be made individually or in a group; (6) indication of the awareness stage of the process of the decision making, and (7) a limited amount of
information about the consequences of the decisions (see Appendix A).

The time dimension of the decision-making process was built into the survey instrument at two places (1) in the horizontal relationship dimension of contingency relationships, and (2) as one independent variable (perceptions of the degree of urgency of time). The valuing phase of the process of decision making was identified as four value indicators in the perceptions of the teachers to four independent variables: (1) degree of change which would be precipitated by the decision (the variables which the decision maker perceived as being "important" and their manipulation in ways perceived as "important"); (2) amount of information grasp needed to make the decision (extent to which the values, goals, objectives, constraints and side conditions pursuant to the decisions were well understood and well reconciled, and the intellectual capacity of grasping and thinking through the decisions; (3) degree of conflict manifested in the decision (differences in individual and group values and his own and expectations of others); and (4) the level of satisfaction experienced in making the decision.

A panel of judges coded the decisions according to the roles of teachers: (1) director of learning, (2) guide and counselor, (3) mediator of the culture, (4) member of a school community, (5) liaison between home and school, and (6) member of a profession.
Procedure

This survey research collected nominal and ordinal data. Not all of the teachers responded to all of the questions so the number of frequencies on the tables varied. Hypotheses in the null form were developed according to the matrix of the objectives and variables. The level of significance in each case was accepted at .05. The Chi Square test of significance was used for the relationships between the dependent and each independent variable.

The expected frequencies of the cells of the contingency tables on some of the variables were affected by the number of strategic decisions reported. Therefore, tables reporting the perceptions of teachers of six selected variables were collapsed into 2x2 tables. For tables relating to these six variables when the analysis of data was presented, a corrected Chi Square (using Yate's Correction for Continuity) was reported. The result of the correction was a reduction in the size of Chi Square.

For the statistically significant findings, the data were submitted to Cramer's V that indicated the degree of association between the variables. Cramer's V had a value of 0 to 1.

Findings

Background Information for the Decision Moment.

The majority of the teachers in this study taught either Business and
Office or Trade and Industrial courses and had been in the current teaching position less than ten years.

The majority of the decision problem statements reported by the teachers were coded for the role of the teacher as director of learning or member of a school community. The one hundred and nineteen teachers who reported the former perceived the decisions as (1) needing a medium to high amount of information grasp, (2) precipitating a medium to high degree of change, (3) manifesting a low to medium degree of conflict, (4) having a low to medium degree of ambiguity, (5) having a medium to high degree of urgency of time, and (6) giving the teacher a medium to high level of satisfaction.

The thirty-four teachers, who reported decision problem statements for the latter (member of a school community), perceived the decision as (1) needing a medium to high amount of information grasp, (2) precipitating a medium to high degree of change, (3) manifesting a medium to high degree of conflict, (4) having a high degree of urgency of time, and (5) giving the teachers a medium to high level of satisfaction.

Over half of the teachers reported that awareness of the need to make the decision resulted from delegation or was in response to an unmet need or an unsolved problem.

The majority of the teachers reported that the decision: did not
depend on one made at a higher level in the school and would not affect decisions at a lower level in the school; would depend on knowing the consequences of a previous decision and would be affected by the time available to collect data, use information sources, and/or meet deadlines; and would be made with the teacher as an individual decision maker rather than as a member of a group.

Responses to four of the independent variables were used as value indicators in the study. Over eighty percent of the teachers perceived the decisions as (1) needing a medium or a high degree of information grasp, (2) precipitating a high degree of change, and (3) reported a high or medium level of satisfaction in making the decision. The fourth value indicator was the degree of conflict manifested in the decision (almost sixty-six percent of the teachers reported a medium or a high degree).

Almost fifty percent of the teachers indicated perceptions of a medium or high degree of ambiguity.

The time dimension was investigated from two respects: sixty percent of the respondents reported that making the decision depended on time available (reported earlier in the horizontal relationships), and almost eighty-six percent of the teachers reported a high or a medium degree of urgency of time.

The majority of the teachers (65 percent) reported that ends (goals,
purposes, objectives, clients, or a client) or functions (duties, expectations, actions, performances) would be primarily affected by the decision.

The next highest frequencies (28 or 16 percent) were reported for means (programs, strategies, format specifications) or affirmation (support, consent, confirmation, cooperation). The teachers reported nine decisions which concerned locale (2), agents (3) or allocation.

Ninety-six (over fifty percent) of the respondents reported action decisions (that required the selection from two or more courses of action that were open), forty-nine, or approximately 27 percent, reported qualitative decisions (those requiring a determination of the worth of a given state of affairs), and thirty-five or less than 20 percent reported quantitative decisions (those involving time, members or other measures of quantity).

Almost seventy percent of the teachers reported recycling (or structuring) decisions while nineteen percent reported planning decisions. Ten percent of the respondents reported decisions which involved carrying out an action plan—implementing decisions.

The dependent variable in the study was the use of search strategies for determining action alternatives. It had two categories: (1) a non-search strategy (the options were given and the decision maker made a choice); and (2) a search strategy (the decision maker must search for the options or alternatives for decision making). The teachers reported the use of a non-
search strategy for 85 (47.2 percent) of the decisions and a search strategy for 95 (52.8 percent).

One hundred and twenty-one teachers reported that the intent of the search behavior was for methods (fifty-seven percent reported a search strategy used and forty-three percent a non-search strategy). Fifty-seven teachers reported the intent of the search behavior was for content (the two categories of the search strategy used were reported with approximately equal frequencies).

This information was presented as background information for the decision moment which was described as the point in time (between the awareness and design stages of the process of decision making and between the hesitancy and knowledge phases of decision) when the decision maker makes a decision to search or not-to-search for information in order to make the decision.

The main independent variable in the study was the classification of the decision. The teachers rated the five characteristics of (1) accomplishment of goals, (2) closeness of consequences to the immediate situation, (3) feedback from consequences, (4) likelihood that the consequences would involve the teacher directly, and (5) amount of risk, conflict or controversy in relation to the self-concept in the role of the teacher or to the organizational structure of the school. Based on the sum of the values assigned to the ratings and the decision rules which were established a priori, almost
seventy-three percent (130) of the decisions were classified as **tactical** and twenty-seven percent (50) were classified as **strategic**.

Data pertaining to the search decision of the teachers were presented. The following findings resulted from the analysis of data which was based on the objectives of the study:

1. Vocational teachers make almost three times as many decisions with a high amount of risk, conflict or controversy, as with a low amount of risk, conflict or controversy.

2. Vocational teachers search for the options for decision making more frequently than they make a choice from the options or action alternatives given.

3. In educational decision making by teachers, the classification of decisions (whether tactical or strategic) is not related to the search strategy used (search or non-search).

4. The search strategy used by teachers was related to the kind of decisions: teachers reporting action decisions tend to use a non-search strategy for decision making; those reporting qualitative and quantitative tend to use a search strategy.

4.1 Teachers, when making educational decisions which are perceived to have a high degree of risk—tactical decisions, tend to choose from the options given for action decisions and search for the options for deter-
mining the value of a state of affairs and for determining time, numbers or other measures of quantity.

4.2 When teachers make educational decisions which are perceived to have a low degree of risk, the kind of decision (qualitative, action, or quantitative) is not related to the search strategy used (search or non-search).

5. In educational decision making by teachers (whether tactical or strategic) the type of decision (planning, structuring, implementing, and recycling) is not related to the search strategy used (search or non-search).

6. Perception of the amount of information needed to make the decision is not related to the search strategy used (non-search or search).

7. Perception of the degree of change precipitated by the decision is not related to the search strategy used (non-search or search).

8. Perception of the degree of conflict manifested in the decision is not related to the search strategy used (non-search or search).
9. Perception of the level of satisfaction experienced in making the decision is not related to the search strategy used (non-search or search).

10. When making educational decisions (whether tactical or strategic), the teacher's perception of the degree of urgency of time is not related to the search strategy used (non-search or search).

11. In educational decision making (whether tactical or strategic), the teacher's perception of the degree of ambiguity in the decision is not related to the search strategy used (non-search or search).

Conclusions

The conclusions, implications for further research, and recommendations were based upon the findings pertaining to the search strategies used in educational decision making by 180 vocational teachers who were in a random sample. These statements have been framed by the study objectives and hypotheses.

Conclusion 1

Vocational teachers make more tactical than strategic decisions.
Conclusion 2

Vocational teachers search for the options for decision making more frequently than they make a choice from the options given. The intent of the search behavior is usually for methods rather than content.

Conclusion 3

Perception of the amount of risk, conflict or controversy in relation to the self-concept in the role of the teacher or to the organizational structure of the school is not related to the search behavior of teachers.

Conclusion 4

Perception of the amount of risk, conflict or controversy in relation to the self-concept in the role of the teacher or to the organizational structure of the school influences the relationship between the search behavior of teachers and the kind of decisions.

(1) Teachers who make decisions perceived to have a high degree of risk tend to choose from the options given when making action decisions and to search for the options when making qualitative and quantitative decisions.

(2) The low degree of risk perceived in the decision does not tend to influence the relationship between the search behavior of teachers when they determine the worth of a given state of affairs, select from two or more actions that are open to them, or make decisions involving time, numbers, or other measures of quantity.
Conclusion 5

Perception of the amount of risk, conflict or controversy in relation to the self-concept in the role of the teacher or to the organizational structure of the school does not tend to influence the search behavior of teachers when they make decisions for: (1) determining planning objectives; (2) designing procedures by involving methods, content, organization, personnel, schedule, facilities and budget; (3) utilizing, controlling, and refining procedures; or (4) judging and reacting to attainments/results and determining whether to continue, terminate, evolve, or modify an activity.

Conclusion 6

In educational decision making, (whether the decision is perceived to have a high or a low amount of risk, conflict, or controversy), the search behavior of teachers is not related to the teachers' perceptions of the value indicators of (1) amount of information grasp needed to make the decision, (2) degree of conflict manifested in the decision, (3) degree of change that would be precipitated by the decision, and (4) level of satisfaction experienced in making the decision.

Conclusion 7

The teacher's perception of the amount of information grasp needed to make an educational decision does not tend to influence search behavior, regardless of the risk factor.
Regardless of the degree of risk in decision making the search behavior of the teacher does not tend to be influenced by the teacher's perception of the two aspects of the amount of information grasp needed to make the decision [(a) values, goals, objectives, constraints and side conditions are well understood and well reconciled, and (b) the intellectual capacity for grasping and thinking through the decision].

Conclusion 8

Perceptions of the degree of change which the decision would precipitate do not tend to influence the search behavior of teachers (regardless of the risk factor).

(1) Perceptions of the manipulation of "important" variables in "important" ways or "unimportant" variables in "unimportant" ways, (the two aspects of the degree of change variable), do not tend to influence the search behaviors of teachers (regardless of the degree of risk perceived in the decision).

Conclusion 9

Perception of the degree of conflict manifested in the decision does not tend to influence the search behavior of the teacher (regardless of the risk factor).

(1) Perception of differences in individual and group values and his own and expectations of others in the role of teacher, (the two aspects of the degree of conflict), does not tend to influence the search behavior of
the teacher.

Conclusion 10

The teacher's perception of the level of satisfaction experienced in making an educational decision is not related to search behavior (regardless of the risk factor).

(1) Teachers who make educational decisions, regardless of the degree of risk perceived in the decision, do not relate such behavior to the level of satisfaction: those who searched for the options reported a high and a low level of satisfaction and those who chose from the options given reported a high and a low level of satisfaction.

A high level of satisfaction is not accompanied necessarily by the use of a search strategy; a low level of satisfaction is not accompanied necessarily by the use of a non-search strategy.

Conclusion 11

Regardless of the degree of risk, conflict, or controversy perceived in educational decisions, search behavior is not related to the teacher's perception of the urgency of time.

Conclusion 12

In educational decision making, (whether the decision is perceived to have a high or a low amount of risk, conflict or controversy), the search behavior of teachers is not related to perceptions of the degree of ambiguity manifested in the decisions.
Implications for Further Research

Implication 1

Since twenty-three of the null hypotheses were not rejected, the study should be redesigned and replicated to further test the viability of the theoretical structure of the study.

Implication 2

Since the data analysis was based on a moderate number of decisions, the study should be replicated using (1) a larger sample, (2) geographical representation in the population frame, (3) administration of the instrument at a different time of the year, and (4) different instrumentation. This would enhance the representativeness of the educational decisions made by teachers and generalizability of the findings.

Implication 3

The primary purpose of this research was to describe relationships. Research of a different design is needed which will investigate the cause/effect relationships of search behaviors to interaction of the input information with the forces in the decision setting which impinge upon the decision maker.

Implication 4

The findings of this study demonstrate six "non-related factors" for search behaviors of teachers. Since teachers search for the options for decision making more frequently than they make a choice from the options
given, further research is needed to determine the "related factors" of
search behaviors, the relationship of ambivalence to search and the
problem of suboptimization and the search behavior.

Implication 5

Vocational teachers make almost three times as many decisions which
are perceived to have a high amount of risk, conflict, or controversy as have
a low amount. Research should be conducted which will determine the index
of the cause of the perception of risk.

Implication 6

This study used four value indicators in an effort to determine factors
in the valuing dimension of decision making. Further research is needed to
investigate the relationship between other value indicators and search
behavior.

Implication 7

This study used four variables which represented selected aspects of
the decision setting: (1) the risk factor in decision making tends to influence
the search behaviors of teachers when the decisions were made for the
purpose of determining the worth of a given state of affairs, selecting from
two or more actions that are open, or determining time, numbers or other
measures of quantity; (2) the risk factor in decision making does not tend to
influence search behaviors of teachers who are determining planning objec-
tives, designing procedures, utilizing, controlling, or refining procedures,
or judging and reacting to attainments/results and determining whether to continue, terminate, evolve or modify an activity; (3) the perception of the urgency of time does not tend to influence search behaviors of teachers (regardless of the risk factor); and (4) perception of the degree of ambiguity in the decision does not tend to influence the search behaviors of teachers (regardless of the risk factor). Further research should investigate the relationships of other factors in the decision setting to search behaviors of teachers.

Implication 8

Further research is needed for the teacher as a user of information and knowledge in decision making to determine (1) how the teacher uses internal resources (home-grown and home-stored knowledge), (2) mobilizes the internal resources of skill and experience to adaptation of outside knowledge to the internal need, (3) the facilitating and inhibiting forces of the self-steering mechanism toward utilization of information products and resource services, and (4) the cause/effect relationships between the teachers' decisions and the educative environment of students.

Implication 9

Further research is needed to determine how teachers use the other phases of decision and other stages of decision making.
Implication 10

Further research should be conducted on the search behavior of teachers when the options are not given.

Implication 11

Further research on the process of decision making by teachers should be conducted using other data collection techniques.

Recommendations

The findings, conclusions and implications for further research served as the basis for the following recommendations:

Recommendation 1

Research of a different design is needed which will investigate the cause/effect relationships of search behaviors to (1) social forces in the decision setting which impinge upon the decision-making process, and (2) the perceptions of the facilitative and inhibiting nature of these forces by the decision maker.

Recommendation 2

Those who develop, organize, extend, and evaluate criteria for the development of teacher competencies should develop learning experiences in decision making skills which will assist teachers to: (1) make selective action of search behaviors more decidable, (2) utilize and obtain information that is provided, (3) use scientific, practical, and efficiency criteria for judging the utility of information, (4) share searching experiences, (5) judge the efficacy of their search behavior, and (6), in terms of their teaching-learning behaviors, establish linkage with providers of information.
Recommendation 3

The information dissemination system should attempt to derive implications from the findings of this study in order to target research, development, diffusion and dissemination resources and products for teachers to use in decision making: (1) teachers generally make high risk decisions and search for the options for action alternatives in decision making, (2) the intent of the search behavior is usually for methods, (3) the decisions pertain to the role of the teacher as director of learning or member of a school community, (4) making the decision generally depends on one made previously and depends upon time available to collect data, use information sources, and/or meet deadlines, (5) the teacher generally makes the decision as an individual rather than in the group.

Recommendation 4

The information dissemination system should continue to target information products to teachers on the change process. Many of the teachers become aware of the need to make the decisions in response to an opportunity for introducing change.

Recommendation 5

The information dissemination system should explore alternate ways of (1) establishing linkage (a regularized pattern of interaction between information products and teachers), (2) ascertaining the usefulness of the information for decision making, and (3) evaluating the effects of the decisions on the ultimate consumers of the information products (students).
BIBLIOGRAPHY


APPENDIX A
DECISION-MAKING BY VOCATIONAL TEACHERS

PERSONAL DATA: Circle the number of the appropriate response.

01 Which subject area in vocational and technical education do you teach?

[9] Other (please list).

02 Which program level students do you teach?


03 How long have you been in your current teaching position?

[1] Less than 5 years
[2] 6 to 10 years
[3] 11 to 15 years
[4] 16 to 20 years
[5] Over 21 years

Directions: WHEN YOU MAKE THE NEXT DECISION IN YOUR ROLE AS A TEACHER, WRITE THE DECISION PROBLEM IN THE SPACE PROVIDED BELOW. IF POSSIBLE, STATE IT IN QUESTION FORM.

AFTER YOU HAVE STATED THE DECISION PROBLEM, PLEASE RESPOND TO THE FOLLOWING QUESTIONS BY PLACING A CIRCLE AROUND THE NUMBER OF THE ONE RESPONSE THAT BEST APPLIES TO YOUR DECISION.

04 [ ]

05 How did you know that you must make this decision? It was:

[1] Delegated to me.
[2] In response to an unmet need and/or an unsolved problem.
[3] In response to authority identified in school policies and guidelines.
[4] In response to an opportunity for introducing change.

06 How will you identify the options or alternatives to use in making this decision?

[1] I will make a choice from among the options or alternatives given.
[2] I will search for options or alternatives.

07 Will the options or alternatives which you identified be concerned with:

[1] Content (alternative needs, problems, or opportunities)?
[2] Methods or procedures (ways to meet a need, solve a problem or exploit an opportunity)?
RATE THE FOLLOWING CHARACTERISTICS BY PLACING AN X WITHIN THE BRACKETS ON THE SIDE OF THE MIDPOINT WHICH BEST REPRESENTS THE RELATIONSHIP OF THE CHARACTERISTIC TO YOUR DECISION.

08 Accomplishment of goals
09 Closeness of consequences to the immediate situation
10 Feedback from consequences
11 Likelihood that the consequences will involve you directly
12 Amount of risk, conflict or controversy in relation to your self-concept in the role of the teacher or to the organizational structure of the school

13 [ ] (Go on to the next question.)

14 Does this decision involve:
   [1] Determining the worth of a given state of affairs?
   [2] Selecting from two or more courses of action that are open to you?
   [3] Time, numbers, or other measures of quantity?

15 Does this decision help to:
   [1] Determine planning objectives?
   [2] Design procedures by involving methods, content, organization, personnel, schedule, facilities and budget?
   [3] Utilise, control, and refine procedures?
   [4] Judge and react to attainments/results and determine whether to continue, terminate, evolve, or modify an activity?

16 Will you make this decision:
   [1] As an individual?
   [2] In a group?

17 Will the making of this decision depend on knowing the consequences of a previous decision?

18 Does the decision which you must make depend upon one made at a higher level in your school?

19 Will this decision affect other decisions at a lower level in your school?

20 Will making this decision be affected by the time available (to collect data, use information sources, and/or meet deadlines)?
RATE THE FOLLOWING STATEMENTS BY PLACING AN X WITHIN THE BRACKETS ON THE SIDE OF THE MIDPOINT WHICH BEST REPRESENTS THE IMPORTANCE OF THE STATEMENT IN RELATION TO YOUR DECISION.

21 Amount of information grasp needed to make this decision
Low [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] High

22 Degree of change which will be brought about by the decision
Low [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] High

23 Degree of conflict manifested in the decision
Low [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] High

24 Degree of ambiguity in the decision
Low [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] High

25 Degree of urgency of time
Low [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] High

26 Level of satisfaction which you experience as you make this decision
Low [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] High

27 Circle the one number from the following list which will be primarily affected by the consequences of this decision.

(1) Ends (Goals, purposes, objectives, clients or a client).
(2) Means (Programs, strategies, format specifications).
(3) Agents (Offices, roles, statuses, linkages).
(4) Functions (Duties, expectations, actions, performances).
(5) Norms (Laws, standards, policies, rules, regulations).
(6) Allocation (Budget, staffing).
(7) Orders (Priority, timing, scheduling).
(8) Locale (Site).
(9) Affirmation (Support, consent, confirmation, cooperation).

THANK YOU. THIS CONCLUDES THE QUESTIONS. DO NOT WRITE BELOW.

[ ] [ ] [ ] RESPONDENT NUMBER

[ ] DATE OF RESPONSE
I am a fellow West Virginian and I need your help. Your name was selected from a list of all of the vocational and technical teachers in West Virginia for participation in my doctoral study at The Ohio State University.

The purpose of this study is to describe the decision-making process used by vocational and technical teachers in West Virginia. It will take about 15 minutes to answer some questions. Even though on any particular day you may make numerous decisions pertaining to your role as a teacher and those decisions may have varying degrees of importance involving the many phases of teaching, please respond about the very first decision which you must make after you receive this letter. There are no right or wrong answers; the intent is to focus on this specific decision.

You have been assigned a respondent number so I can monitor the response rate. You need not sign the form unless you wish. Reference to your name or county will not be used in the study report.

When you have completed the form, please fold, staple, and return it. Postage is provided. Please return the form no later than May 9, 1973.

To summarize:
1. After receipt of this letter, fill out the form when you must make the first educational decision.
2. Fold and staple the form.
3. Mail the form before May 9, 1973.

Thank you for your assistance.

Most sincerely yours,

Wilma B. Gillespie
Research Associate