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A Study of the Relationship between Cognitive Processing Style and Teacher Perception of Evaluation

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A STUDY OF THE RELATIONSHIP BETWEEN COGNITIVE PROCESSING STYLE AND TEACHER PERCEPTION OF EVALUATION

by

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VITA

Lois Riedel Christensen, daughter of Otto and Evelyn Fairbanks Riedel, was born July 22, 1938, in Monticello, Iowa.

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INTRODUCTION

STATEMENT OF THE PROBLEM

The subject of teacher performance evaluation is one which touches the professional lives of all educational personnel. The 1984 Rand Corporation Study notes that teacher evaluation serves two separate purposes: accountability and improvement. Accountability is generally achieved through a process by which educational administration, through classroom observation, examines and passes judgment on the expertise of teachers. Improvement of instruction utilizes the same examination or observation process but is also accompanied by some form of conferencing between the evaluator and the teacher during which support for current techniques or suggestions for alternative teaching techniques may be discussed. Understandings of the concepts and purposes of teacher performance evaluation systems vary among community and educational groups.

The general public seems to view teacher performance evaluation as a method to insure quality teacher performance and therefore excellence in education for the nation's public schools. In recent years, most notably since the issuance of "A Nation at Risk" in 1983, public pressure for greater accountability in education has increased and with it the need for intensified teacher evaluation efforts. The recent

trend in several states toward the development of performance-based pay plans for teachers requires increased concentration on evaluation measures and will undoubtedly keep the subject at the forefront of district planning across the country.

The education community views teacher performance evaluation from a different perspective. Frequently the primary stated goal of teacher performance evaluation is the improvement of instruction. Current research, however, suggests that such a goal is not always attained. Many evaluators and teachers regard evaluation as a required task mandated by district or state regulations. Most districts use the system as a decision-making tool to determine which teachers remain in employment.

Good teachers, who receive excellent ratings on the written evaluation, feel the comments are too general in nature and content to be valuable for improvement of instruction. Poor teachers, also, looking for specific recommendations to assist their improvement, are dissappointed because of the lack of specificity. When evaluation is perceived as a valueless process, little is gained. Teachers fail to gain input applicable to the improvement of instruction and evaluators lose credibility in the eyes of the teaching staff.

Intrinsic to the nature of the teacher performance evaluation is the process of communication. An evaluator may visit a classroom several times to observe the instructor's expertise in the teaching situation. During the observation, the evaluator must be able not only to understand the teacher's plan of action and to identify its elements within the body of knowledge known as effective teaching practices, but

must interpret the finer points of the teacher's presentation and interaction with the students as well. Finally, the evaluator must compile the observation data and share the results with the teacher.

In order to be effective, the evaluator, in any evaluating situation, and regardless of the type of evaluation system he/she uses, must be able to express the findings in terms the teacher/recipient can truly understand. Without such understanding, mere words pass between the two parties. The purpose of this paper was to explore one element of this interactive communication process, the effect a match or mismatch of teacher/evaluator cognitive style has on the teacher's perception of evaluation.

Within the past fifteen years, considerable research has been conducted in the area of cognitive styles. The material reports that each individual operates, or processes information, according to a particular style. Several instruments, devised for the purpose of identification of different cognitive styles, have resulted in descriptors for each of the style components. Further research has found that student achievement is significantly enhanced when student and teacher styles are closely aligned. Cognitive style research has been conducted in relation to a number of verbal and/or linguistic tasks, but not specifically related to teacher performance evaluation. It is this communication link that has been the subject of this study. In order for effective communication to take place, a greater degree of agreement of processing styles and written delivery of evaluation must be effected. The purpose of this study was to determine if there is a relationship between cognitive processing style and teacher perception

of a written evaluation report, and, if such a relationship exists, whether it is dependent on a congruency of style between evaluator and teacher.

PURPOSE OF THE STUDY

The purpose of this study was to examine whether teachers perceive the written evaluation differently when their cognitive style closely agrees with that of the evaluator than when teacher and evaluator cognitive styles lack agreement.

Three questions served as the focus for this study:

1. Is there a relationship between cognitive style in terms of field dependence/field independence and teacher perception of selected teacher evalution criteria?

2. What factors within the written evaluation--length, complexity of sentence structure, vocabulary, etc.--are identified as critical to the above relationship?

3. Is there a relationship between the condition of field dependence/field independence and various demographic factors such as sex, length of teaching career, or level of teaching?

SIGNIFICANCE OF THE STUDY

The study contributed to the body of knowledge concerning teacher perception of evaluation and elements of interactive communication between teachers and evaluators within the scope of teacher performance

evaluation. It provided data relative to the congruency of cognitive style between teacher and evaluating administrator and the extent to which this congruency or lack of it can influence teacher perception of evaluation.

Data relative to teacher perception of evaluation and the impact of cognitive style congruency may be utilized by a number of organizational groups. Administrators who work with the subject of teacher evaluation may avail themselves of the content and direct their efforts accordingly. Districts can apply the findings to evaluation, teacher/administrator relations, and team building efforts in staff development planning activities. Administrators/evaluators can be trained to recognize a variety of styles and adjust their delivery to more closely match that of the teachers they evaluate and thereby increase the effectiveness of their communication. Colleges and universities can incorporate the significance of the findings into administrator preparation curricula.

DEFINITION OF TERMS

The characteristic manner in which an individual perceives and responds to stimuli in a wide range of situations is commonly called a person's "style." Because the approach encompasses both perceptual and intellectual activities, it is referred to as his or her "cognitive" style. Cognitive style is a pervasive dimension of individual functioning, showing itself in the perceptual, intellectual, personality, and social domains, and connected in its formation with the

development of the organism as a whole. Cognitive styles are concerned with the form rather than the content of cognitive activity. They refer to individual differences in how we perceive, think, solve problems, learn, relate to others, etc. The concept of style might best be considered as the "manner in which an individual moves toward a goal" rather that the concept of his or her "ability as competence in goal attainment" (Witkin and Goodenough, 1981). Given any specific circumstance, individuals of either style may be capable of attaining a goal, but will exhibit different and individually positive methods of moving toward attaining that goal.

Individuals with varying cognitive styles show no difference in sheer learning ability or memory. Cognitive styles are stable over time. We can predict with some accuracy that a person who has a particular style one day will have the same style the next day, month, and probably even years later.

Field Dependent individuals tend to organize content structure in which many concepts are functionally related to each other into large, loosely organized groups which include many concepts. They tend to be more influenced by the prevailing field, to be less analytical, and to organize material by means of patterns, relationships, and networks. Field Dependent individuals exhibit behavior which is intuitive, spontaneous, emotional, nonverbal, holistic, and symbolic.

Field Independent individuals tend to have a more analytical and impersonal orientation. They tend to perceive items as discrete from background when the field is organized, and to impose structure on a field, and so perceive it as organized, when the field has relatively

little inherent structure. This happens both from an immediately present stimulus configuration, as in perception, or from symbolic material, as in intellectual functioning. They organize or cluster concepts into small, tight groups with less overlap across groups. Field Independent individuals exhibit behavior which is sequential, explicit, rational, verbal, and goal-oriented.

For a more detailed description of Field Dependent and Field Independent characteristics, see Appendix C.

LIMITATIONS AND DELIMITATIONS

The limitations of this study were those inherent in the types of instrumentation utilized. Data from the questionnaires were limited because they relied on perceptions rather than on objective information. Staff participation was limited because building administrators elected to involve their individual faculty and staff.

While there are other factors which impact on teacher perception of evaluation, this study was limited to teacher perception of writing style differences as manifested in a sample summative evaluation report.

The study was delimited to one school district of approximately 10,000 students in Dubuque, Iowa. It was not delimited to any particular schools in that district nor any particular type of school or department.

SUMMARY

Teacher evaluation is a vital element of educational effectiveness. The responsibility for evaluation, usually utilized as a method of determining accountability, falls to administration. Teacher evaluation is frequently a task mandated by state regulations and as such may be performed in a perfunctory manner. Teacher evaluation instruments frequently are designed in the form of checklists with which the evaluator can indicate the teacher's classroom performance in relation to prescribed teacher behaviors. However, if the underlying purpose of teacher evaluation is the improvement of instruction, a greater degree of communication between evaluator and teacher must take place.

The evaluation process requires significant communicative interaction between the teacher and the evaluator. The evaluator must not only observe the teacher in the classroom and measure the performance according to standards on an instrument, but must also interpret teacher behaviors in terms of selection of activities, techniques, decisions, etc., and be able to express his/her perceptions to the teacher in a meaningful manner.

The process of evaluation, wherein one is judged to be satisfactory or unsatisfactory, is further confounded by emotional undertones. The sharing of the final evaluation report is a critical point in the process of teacher evaluation, the success of which may depend on the ability of the evaluator to express his/her findings in a written manner that will be completely understood by the teacher.

The following chapters will discuss the literature relevant to the issues of teacher performance evaluation and cognitive style, the methodology utilized to study the relationship between these two issues, the data collected from the study, the conclusions drawn from the study and recommendations for further study.

CHAPTER II

REVIEW OF THE LITERATURE

The purpose of this study was to discover whether a relationship exists between teacher perception of evaluation and the degree of congruence between teacher and evaluator cognitive style. In other words, if the cognitive styles of teacher and evaluator are matched or closely aligned, will the teacher perceive the evaluation differently than if the cognitive styles are mismatched?

The background information relevant to this topic has been divided into three sections: (a) a review of the literature on teacher performance evaluation including the nature of teacher performance evaluation, goals of evaluation, teacher perception of evaluation, and the importance of communication in the evaluation process; (b) a review of cognitive style literature including a description of cognitive style; its application to problem-solving, written work, and various linguistic tasks; and the effects of style-match/mismatch on a variety of learning tasks; and (c) a review of the literature on style-matching including relationship between teacher/student style-match and student achievement; learner awareness of style. These topics and their relationships with one another form the background for this study.

EVALUATION

Teacher performance evaluation has received increased attention in the past several years. As a measure of accountability, the public demands it, administrators implement it, and teachers endure it. Nearly all personnel involved in education agree that it is an essential component of the entire educational program, but agreement on the best method of implementation is far from universal.

Evaluation is a necessary but difficult supervisory process. Quality teacher performance evaluation is an essential component in improving instruction, helping students meet their many goals, increasing public confidence in education, and ensuring that the best possible products will enter the teaching profession (Blome, 1985). Evaluation at its best is a process of communication with a focus on encouragement and improvement (Duke & Stiggins, 1986). The success of an evaluation system, especially with regard to the improvement of classroom instruction, depends in large part on the degree of effective communication between evaluator and teacher. Frequently, however, evaluation of teachers is performed as a duty, more often than not in a perfunctory manner, by administrators who have little time to devote to the intricacies of the process. They perform only the required number of observations and offer the teacher brief, if any, feedback prior to the summative report. In some cases, summative evaluation reports are written without any direct observation of the teacher.

Historically, performance evaluation has evolved from a rating of personal characteristics to a survey of effective teaching traits.

Early evaluations focused on aspects of the teacher such as neatness, orderliness, appearance, demeanor, etc. In contrast, the current focus of teacher evaluation rests on behaviors directly related to teaching such as questioning techniques. Soar, Medley, and Coker (1983) report that a comparison of the Handbook of Research on Teaching, published in 1963, and the Second Handbook of Research on Teaching, published in 1973, verify the diminishing use of teacher characteristics as a topic of research. On the other hand, Good, Biddle, and Brophy (1975), in Teachers Make a Difference, attest to the growing research on effective teaching practices.

Teacher evaluation systems frequently list the improvement of instruction as a primary goal. In fact, thirty-six of the forty-six states mandating evaluation of teachers include teacher improvement as a purpose of evaluation (Duke and Stiggins, 1986). Review of the design of the instruments, however, indicates that the majority have focused much more heavily on organizational maintenance than they have on improving teacher classroom performance (Wood and Pohland, 1983). Evaluation with an organizational focus attempts to maintain performance at a given standard and is primarily used for purposes of employment.

The historical evolution of evaluative approaches, summarized by MacNaughton, Tracy, and Rogus (1984) begins with the traditional model of evaluation in which the supervisor focuses on the presence or absence of traits, techniques, procedures, and skills predetermined as essential to effective teaching. In this approach the evaluator must be able to identify such traits, techniques, and/or skills and make an assessment of their degree of presence.

MacNaughton points out, however, that the traditional approach has several weaknesses. First, it assumes that the presence or absence of particular traits, techniques, or skills is synonymous with effective instruction when most traits and techniques have not been validated by adequate research. Second, it fails to differentiate the relative importance of specific traits and techniques thereby equating "neatness of room" to "well-planned lesson."

As research identified and supported specific teaching strategies and their relationship to instructional effectiveness, the evaluative approach began to include a method of feedback to the teacher. The feedback was intended to help the teacher to move closer to the standard of "good teaching." With this approach, the role of the evaluator requires more than the recognition of specific traits; it requires a thorough knowledge of the principles of teaching, along with skill in observation techniques, and conferencing ability (MacNaughton, 1984). This system demands a closer, more comprehensive relationship between the evaluator and the teacher and requires considerably more time. In providing feedback to the teacher, usually as the result of a series of classroom observations, the evaluator must be able to communicate ideas and suggestions that will make sense to the teacher (Duke and Stiggins, 1986). Otherwise the suggestions become the agenda of the evaluator, not the teacher.

The advent of clinical supervision, and variations of it, bring the focus of evaluation more directly on interaction between the evaluator and the teacher. Typically, the clinical cycle is carried out through a series of events which begins with a pre-observation conference between

administrator and teacher in which the focus of the evaluation is determined with direct input from the teacher. The pre-observation conference is followed by a series of direct observations of classroom performance, collection of specific data, immediate feedback to the teacher, and culminates with an analysis of the data and a post-observation conference and written summative evaluation (Cogan, 1973).

As the relationship becomes closer, however, the effectiveness of communication becomes more important. At this critical point, the difference between evaluation and supervision becomes less distinct, and the terms are often used synonomously. The formative aspect of evaluation, characterized by the evaluator's efforts to support and encourage the professional development of the teacher through the series of observations and conferences, takes on increasing importance.

Lerch (1980) notes that one problem which may arise in the course of the evaluation cycle is that personality and philosophical differences may arise between supervisor and supervisee. In any endeavor involving people there are possibilities for personality conflicts. No guarantees can be given that personality conflicts will not arise, but if the supervisor is aware of the feelings of the supervisee, and views the supervisory role as one of helping and not imposing, conflicts can be minimized. The emphasis becomes one of shared responsibility and a more systematic approach to problem solving. Goldsberry (1984) states that "educational supervision is a complex mix of person-to-person interaction to operationalize and realize value-laden educational goals." It is difficult, if not impossible, to avoid value content in teacher performance evaluation. When one is

being judged, values emerge as causal factors for classroom behaviors. The objectivity the evaluator strives for may be lost when the value structures of evaluator and evaluatee clash.

To counteract a collision of values, Goldsberry identifies ten suggestions for implementing clinical supervision in schools. Included, and pertinent to this topic, are these suggestions:

- Find out which aims teachers strongly advocate for their own teaching prior to planning the first observation. Question teachers to determine:
  (a) the cognitive and affective consequences they desire for students,
  (b) the strategies and tactics they plan to use to achieve those consequences, and
  (c) their concept of an ideal learning climate.
- Discuss with each teacher your own approach to supervision, what you want to accomplish, how you will try to do it, and your concept of an ideal supervisory climate.

Discussion of the above suggested tactics can produce greater understanding, a bond of trust, and ultimately better communication between teacher and evaluator.

Clearly, the evaluation process requires extensive communication skills on the part of the supervisor. The ability to communicate through varying perceptions and across discrete levels of professional development is critical to the success of the process. Glickman (1980) suggests matching models of supervision to stages of teacher growth. Similar to Hersey and Blanchard's Situational Leadership, Glickman's

proposal suggests a continuum of supervisory responsibility through Directive, Collaborative, and Nondirective models to match teacher developmental stages from egocentric to altruistic concerns. He feels strongly that a supervisor might better serve his or her staff by responding to individual needs rather than employing a single, uniform, or standardized approach. The professional supervisor obviously must use varying approaches if he/she is to treat teachers as individuals.

In a similar manner, the concept and use of power can become an aid to evaluator/teacher relationships when used appropriately (Herlihy & Herlihy, 1985). These authors refer to the classic work on the nature of power done by French and Raven in 1959. They note the necessity for principals to empower teachers with the use of expert and referent power. To maximize referent power, which is personality-based, principals need to attend to the personal and social aspects of the principal/teacher relationship. It is important to remember that universal human needs include not only power or influence, but also inclusion (a sense of belonging) and intimacy (a feeling of closeness to others). Principals who understand the potency of referent power do not remain aloof from their teachers; they do not try to stand above them; they recognize the importance of the affective and personal aspects of administration.

Teacher perceptions of evaluation vary. "How teacher evaluation procedures are carried out and the extent to which they are carried out are influential conditions. Certain factors within these conditions can facilitate or hinder the effectiveness of teacher evaluation procedures" (Jensen, 1981). Jensen provides a listing of critical factors

identified by classroom teachers for teacher evaluation practices. Factors encompass evaluation practices such as observation time and extend to evaluator attitude and knowledge. For example, 88% of the act ^^^^^^^^^^^^^^^^^^^^^^FCEteachers responding in Jensen's study listed time allotted for observation as a critical factor and over half listed the evaluator's knowledge of the teacher's philosophy, goals, and objectives as an important factor.

Glass (1975) notes a major problem in teacher evaluation is the presence of practices within evaluation procedures that threaten maintenance of self-esteem or self-confidence and curtail acceptance or understanding of problems and shortcomings. Teacher perceptions of their job status also appear to influence their views regarding the use of administrator judgments, self-assessment, and accomplishment of objectives stated in advance (Stark & Lowther, 1984). Evaluation can arouse feelings of defensiveness and distrust (Glass, 1975). Trust and confidence seem to be defined by teachers as evaluation objectivity, the extent of agreement between evaluator and teacher about the appropriateness of goals and methods of controlling learning environments and agreement about attitudes toward education (Paulin, 1981). Teacher contracts not withstanding, teachers seem to want humane and meaningful teacher evaluation as well as viable and defensible procedures (Jensen, 1981).

Teacher perception of lack of credibility on the part of the evaluator can also frustrate evaluation efforts, especially in the direction of improvement of instruction. Teachers may lack confidence in the expertise of their administrators to make accurate evaluative

judgments (Paulin, 1981). Many teachers at the secondary level, in particular, seem to lack confidence in the expertise of their administrator if the administrator has not had specific experience in the teacher's field of study. In fact, communication between teacher and evaluator may at times assume a political nature - one in which the evaluator must very carefully and strategically choose language and perspective to approach the teacher in the most positive manner.

The need to take into consideration the thoughts, feelings, and philosophy of teachers is incumbent on the evaluator. Every effort must be made to establish a comprehensive link between supervisor and supervisee if real communication is to take place. Basic to the nature of the communication is the cognitive structure of the individuals involved.

COGNITIVE STYLE

A. Description and Research Application

Considerable research has recently been conducted to validate what we all intuitively know--not all people think alike. The work of Piaget (1973), Bruner (1969), Kohlberg (1969), and others, document the maturational development of the individual through predictable developmental stages. According to these studies, individuals are capable of specific types of learning activities at identifiable stages in their development. The work of Piaget, especially, indicates that individuals cannot mentally accommodate certain types of knowledge until they have reached a particular stage. For example, children cannot

recognize the concept of stability of volume when a liquid is poured from a narrow tall vessel into a wide short vessel until they have matured to the stage of "conservation of continuous number."

Studies on hemispheric brain development support theories in cognitive style (Levy, 1983). Identification of tasks which take place in specific areas of the brain indicate that some individuals tend to predominantly utilize one side of the brain more than the other. The connections between cognitive style and hemisphericity are described by such terms as "left/right", "analytic/global", and "inductive/deductive." The terms are often used interchangeably in the literature; descriptions of these pairs of variables parallel each other (Dunn, Beaudry, and Klavas, 1989).

Studies have also continued the stages into the life of the adult. "Works such as Passages, The Seven Ages of Man, and Life History and the Historical Moment suggest that people encounter common experiences at various stages of adult life" (Glickman, 1980).

Cognitive style can be defined as the characteristic manner in which an individual acts, reacts, and adapts to the environment. The term "cognitive style" is often used synonymously with learning style, teaching style, administrative style, personal style, etc., (Kuchinskas, 1979) primarily because the distinctive behavior pattern or mode is a pervasive dimension of behavior, showing itself in the perceptual, intellectual, personality, and social domains, and connected in its formation with the development of the organism as a whole.

Cognitive styles are consistent and comparatively stable over time (Satterly and Brimer, 1971). They are concerned with the form rather

than the content of cognitive activity and refer to individual differences in how people perceive, think, solve problems, learn, relate to others, etc.

While the term cognitive style has received recent emphasis, it is not a new term. Allport (1937) referred to a style of living and adapting influenced by distinctive personality types and called it "cognitive style". Even the ancients referred to the four dimensions of man--active or passive and emotional or thoughtful. The Hindu Bhagavad Gita describes the four yogas or paths--four basic methods of practicing religion (Fizzell, 1984).

In a review of the status of cognitive style research, Fizzell (1984) notes that the research has proceeded in three directions--a broad and encompassing view of the personality, analysis of specific behavioral details, and factors which affect characteristic style patterns.

Some researchers have approached it from a global personality perspective (Kiersey & Bates, 1975; and Lotas, 1977). Gregorc (1977) has identified and popularized four categories of cognitive processing: Concrete Sequential, Concrete Random, Abstract Sequential, and Abstract Random. He defines Concrete as preferring real world experience as a source of information, as opposed to the abstract approach, which reflects a preference to deal with ideas. Random processing of information reflects the desire to survey and explore patterns and relationships, as opposed to proceeding in some predetermined, often linear, order, as in sequential. Concrete and abstract are concerned with how an individual perceives information; random and sequential

refer to the manner in which an individual sorts and processes information.

Among the cognitive styles identified to date, the field dependent/field independent dimension has been the most extensively studied and has had the widest application to educational problems (Witkin, Dyk, Faterson, Goodenough, & Karp, 1962/1974; Witkin, Lewis, Hertzman, Machover, Meissner, & Wapner, 1954/1972; Witkin, 1976). In their review of research on this subject for Educational Testing Service Witkin, Moore, Goodenough, & Cox, (1977) note that four specific areas emerge in which sufficient research evidence has been accumulated from application of the field dependence/independence concept to identify the potential benefits of a cognitive-style approach for problems of education. These areas are: how students learn; how teachers teach; how teachers and students interact; how students make their educational-vocational choices, and how individuals perform in the areas of their choice. Within these four areas individual topics have been researched such as learning of social material (Ruble & Nakamura, 1972); the effects of reinforcement (Fitz, 1971; Paclisanu, 1970; Steinfeld, 1973); the use of mediators in learning (Fleming, 1968; Koran, Snow, & McDonald, 1971; Nebelkopf & Dreyer 1973); cue salience (Bruner et al., 1956; Dickstein, 1968; Kirschenbaum, 1969; Shapson, 1973); making and changing educational choices (Clar, 1971; Osipow, 1969); orientation at early ages (Tyler & Sundberg, 1964; Glatt, 1970); stability of cognitive style over time (Witkin, Goodenough, & Karp, 1967); syntactic complexity and cognitive style (Kagan, 1980); verbal processing in relation to perceptual disembedding ability (Longoni & Pizzamiglio 1981); effects of

cognitive style and counselor-client compatibility on client growth (Fry & Charron 1980); effect of field-independence match or mismatch on a communication task (Frank & Davis, 1982); and sex differences (Goldman & Warren, 1973; Schreibner, 1970; Vernon, 1972). In addition, the Group Embedded Figures Test (Oltman, Raskin, and Witkin, 1971) has been extensively researched for reliability and validity across the life span (Panek, Funk, & Nelson 1980); measurement characteristics (Thompson & Melancon 1987); psychometric data (Carter & Loo 1980); and test-retest reliability and differential patterns of score change (Kepner & Neimark 1984).

Others have looked at minute details in their analysis of cognition. Such research is often called cognitive mapping and has produced an analysis of hundreds and even thousands of types of people based on particular traits (Redike, 1973).

B. Effects of Style Match/Mismatch

The third type of research has developed into "learning styles" research. Rita and Kenneth Dunn (1978) are particularly well-known in this field of research. They have isolated numerous variables involved in the learning situation particularly as it relates to the classroom. Their studies have focused on individual needs for quiet or sound, bright or soft illumination, warm or cool room tempertures, seating arrangements, mobility, and grouping preferences. Research in this area (Hunt, 1971) (Fizzell, 1975) (Dunn & Dunn, 1979) (Reckinger, 1980) has also demonstrated that teachers can be more effective if they respond to style differences. Teachers most often teach in their preferred style,

often without realizing this fact. Reckinger found that the dominant personality type of teachers is often quite different from that of students, and a conscious effort at compromise is necessary to avoid conflicts.

Sensory preferences also influence the ways in which students learn. Eight studies within the past decade reveal that when youngsters were taught with instructional resources that both matched and mismatched their preferred modalities, they achieved statistically higher test scores in modality-matched, rather than mismatched, treatments (Dunn, 1983). In addition, when children were taught with multisensory resources, but initially through their most preferred modality and then were reinforced through their secondary or tertiary modality, their scores inreased even more.

The effect of cognitive styles on behavior is profound, but frequently is not recognized by the individual. However, by observing the behavior of educators and learners, it is clearly apparent that individuals utilize consistent strategies in both giving and receiving information. These strategies are employed during reading, math, sports, driving a car, or in any day-to-day problem-solving task. Even in communication tasks a more sophisticated, but still consistent, pattern is employed in deliberate speech by an individual. Whether spoken or written, the individual will select specific items of language in a given situation (Ertel, 1985).

MATCHING TEACHER/LEARNER STYLES

Literature on matching teacher and learner styles in order to increase student achievement increasingly reflects support for this concept. Along with teacher/learner style matching material is that which links hemispheric preference to cognitive style. Relationships between elements of learning style and hemispheric preference have been the topic of research by Dunn, Cavanaugh, Eberle, and Zenhausern (1982); and Levy, (1983). A student's learning style provides the road map for personalized education and for training and/or matching strategies (Keefe, 1985). Dunn (1983) reports consistent findings from a number of studies that indicate significant increase in student achievement when teacher/learner styles are matched. The studies reviewed are Cafferty, (1980); Carbo, (1980); Domino, (1970); Douglass, (1979); Krimsky, (1982); Pizzo, (1981); Tannenbaum, (1982); Trautman, (1979); Urbschat, (1977); and White, (1980). The studies are based on student participants from kindergarten to college age.

Educators must begin to recognize how they deal with information and how they communicate with others and then become flexible enough to incorporate contrasting strategies in their everyday operations if they are to successfully reach learners. Educators must also help learners to recognize how they process information and problem-solve and assist them in developing alternative cognitive styles of thinking and learning.

Learners are frequently unaware of the strategies they use in solving problems and must be helped to become aware of their behavior. Once the learner is consciously aware of what he is doing, he can then begin, with structured practice, to modify his behavior. Most people are resistent to change, however, and prefer to continue to do things as they have in the past. They do so "because that's their style of thinking!" (Kane, 1984)

The least successful learner is the learner who is locked into a specific cognitive style of thinking and learning that is different from that of an educator who is inflexibly locked into a contrasting style. In this case, there is a complete beakdown in communication and frustration is encountered by everyone.

SUMMARY

Teacher evaluation is an essential component of effective instruction. However, given the individual nature of educators, and particularly their individual cognitive styles, the evaluation process needs to be personalized if feedback and assistance are to be of value. Kane (1984) points out that, in order to improve performance, a close look at strategies employed by those giving information and those receiving information must be made. It becomes readily apparent that both parties--givers and receivers--utilize consistent behaviors in handling information. Too often, givers may be employing opposing and/or contrasting strategies from each other. As a result, in too many instances, programs and enhancement activities are ineffective and, at

times, self-defeating. Administrators and evaluators may find it worthwhile to study the various cognitive styles that have been identified and attempt to adjust their communication delivery to more closely match that of those they must evaluate. The success of the evaluation process may hang in the balance.

CHAPTER III

RESEARCH METHODOLOGY

The purpose of the study was to examine teacher/evaluator interaction within the scope of the final written phase of the summative teacher performance evaluation in order to determine if teachers perceive the written evaluation product differently depending on the degree of congruence between the cognitive style of the teacher and that of the evaluator. Several sub-purposes emerged that provided focus for the study. They were: (1) to review the research and literature to determine critical factors relevant to teacher performance evaluation; (2) to review the research and literature to determine critical factors relevant to cognitive processing style; (3) to determine common elements present in the writing style of a select group of evaluators with relation to their respective cognitive styles; (4) to assess the cognitive styles of a sample of teachers in a selected school district; (5) to determine differences in teacher perception of a final written evaluation with regard to individual cognitive styles; and (6) to determine the relationship that existed between cognitive processing style and teacher perception of evaluation.

The first two chapters provided the foundation and basis of this research study. This chapter introduces the research methodology utilized to accomplish the purposes of this study. That methodology consisted of: instrumentation, population and sample, data collection procedure, unit of analysis, and statistical analysis.

INSTRUMENTATION

Two instruments were used in this study. One instrument had been used extensively since its development in 1971 and the other was developed by the author specifically for this research project.

The Group Embedded Figures Test, commonly referred to as the GEFT, (Oltman, Raskin, & Witkin, 1971) was used to determine cognitive processing style in two domains, Field Dependent (FD) and Field Independent (FI), for both teachers and evaluating administrators. As Kogan (1971, p. 247) notes, "the field independence-dependence dimension is unquestionably the most widely known and thoroughly researched" cognitive style. The more field-independent person is more able to locate stimuli within complex perceptual fields and tends to be more analytically oriented than the field-dependent person.

The construct of the GEFT has proven useful in explaining a variety of cognitive and affective outcomes and according to Thompson, Finkler, and Walker (1979, p.3), "Research on the GEFT and other measures of Field Independence/Field Dependence by Witkin and his associates has been ongoing for approximately twenty-five years." The instrument has been the most widely used measure of FI/FD style and has proven useful in explaining diverse phenomena (Thompson and Melancon, 1987, p. 766).

The GEFT is a perceptual test. The subject's task on each trial is to locate a previously seen simple figure within a larger complex figure which has been so organized as to obscure or embed the sought-after simple figure. The GEFT is a group administered form of the

individually administered Embedded Figures Test or EFT (Witkin, Oltman, Raskin, and Karp, 1971).

The GEFT consists of a practice section which contains 7 very simple items and two additional sections each of which contains 9 more difficult items. The subject is instructed to trace all the lines of the simple figure which has been embedded in the more complex figure. The simple forms are present in the embedded forms in exactly the same proportions and in the same position or direction as in the visual display on the back of the test booklet. Subjects are prevented, however, from simultaneously seeing the simple form and the complex figure containing it. By printing the simple forms on the back cover of the GEFT booklet and the complex figures on the booklet pages, simple forms and complex figures cannot be exposed simultaneously. The subject may, however, look back at the simple form as often as he/she wishes.

Lusk and Wright (1981) found that learning occurs between the two sections of the test, but that this "learning effect is independent of the order in which the sections are worked." Thompson and Melancon (1987) report that the Group Embedded Figures Test produces "expected and desired variations when subjects are adults rather than children," and that it satisfies criterion of generalizability theory.

The two sections are evaluated by summing together the number of the 18 items on which the subjects locate and correctly trace the hidden target shapes. The GEFT is simple to administer, requiring approximately 15 minutes of testing time. The sections are timed as follows: Practice Section - 2 minutes; Sections II and III - 5 minutes each. Scoring is done by hand since the scorer must examine each figure

to determine if the lines have been appropriately placed. In order to receive credit for an item, all lines of the Simple Form must be traced. The scorer must also be sure that no extra lines have been added by the subject and that all incorrect lines have been erased. With a small amount of practice, scoring can be completed with minimal time demands.

While the GEFT was used to determine the cognitive style of the subjects, a second instrument was needed to focus on teacher perception regarding the evaluation process. Since no instruments of this nature were commercially available, a questionnaire was developed by the author to determine teacher perception of a final written evaluation report. The questionnaire was constructed in two parts: a sample written evaluation summary, and a series of questions designed to gather teacher perceptions relative to elements of the summary.

The sample written evaluation summary was constructed in the following manner. The Group Embedded Figures Test was given to twenty building administrators who regularly act as teacher evaluators in a selected school district. On the basis of their individual scores, they were divided into two groups: Field Independent and Field Dependent. Examples of actual evaluations written by each of the administrators in the two groups were secured by permission from the Personnel Office and were scrutinized for similarities in style of writing. Sentences which were similar in structure and syntax were extracted from evaluations written by the group of administrators identified as Field Independent and reconstructed into a sample composite summary evaluation report. The same procedure was followed for the group of administrators identified as Field Dependent. The resulting pair of sample summary

evaluation reports contained nearly identical content but were strikingly different in style of writing.

The forms were labeled Summative Evaluation A (Field Independent) and Summative Evaluation B (Field Dependent). By coincidence, the two forms emerged in similar length, number of paragraphs, etc. Both summaries were developed to reflect a generic nature, i.e., neither was grade- nor subject-specific, and both were of a positive nature. Each contained a narrative context relating results of classroom observations and a section of suggestions for continued effectiveness. The basic difference between the two was the Field Independent/Field Dependent writing style. Support for the design of the summaries was derived from a number of research studies in which linguistic context, syntactic complexity, or verbal semantic domain was examined. Studies by Longoni and Pizzamiglio (1981), Kagan (1980), Frank and Davis (1982), and others provide supporting evidence that cognitive style is pervasive into written and/or oral linguistic communication.

The differences which emerged in the two styles of writing were characterized by differences in sentence structure and syntax. The writing of the Field Independent administrator tended to be more economically structured than the Field Dependent individual. The Field Independent individual's writing contained a minimal number of verbs and utilized simple sentences almost exclusively. Compound sentences were made up of two simple sentences combined with a single connector such as "and." Nouns or noun phrases in series were also characteristic.

The Field Dependent individual, on the other hand, tended to write complex sentences with multiple verbs and/or verb phrases and rarely utilized the simple sentence. Sentences frequently contained at least one dependent clause. Compound sentences characteristically combined complex sentences which frequently contained embedded or dependent clauses. Verb phrases in series were more frequently utilized than noun phrases.

The Fry Readability Scale was utilized to determine if either of the summaries might offer an advantage in terms of readability. This scale measured readability based on the average number of sentences and average number of syllables per 100 words in randomly selected portions of text. Similar sections of each summary were tested in this way. The summaries achieved identical ratings using this scale. Further, the reading level for both summaries was determined to be late high school/beginning college. Thus, each summary was similar in content, length, and readability. Only the writing style, correspondent to Field Independent/Field Dependent cognitive style, differed between the two forms of the sample summary evaluation report. The summaries were submitted for critique to several local professors who have had experience with cognitive learning styles. The professors are experienced instructors at two local colleges and have not only extensively researched the area of cognitive style but have had considerable practice in the use of cognitive style inventories within their teaching assignments. Each of the reviewers compared and contrasted the content and writing style of the two forms. In all cases, the reviewers agreed that not only were both summaries positively

phrased and contained the requisite content of a summative evaluation report, but they also represented two different styles of writing.

The questionnaire portion of the instrument contained 12 statements completed in Likert response mode. The statements were designed to elicit perceptions of the written summary evaluation report with regard to sentence structure and length, emotional content, and general perception of the evaluator. The responses contained four possible selections with opposite ends labeled with contrasting descriptors. For example, question 7 states,

Overall, I would rate this written evaluation

Good 1 --- 2 --- 3 --- 4 Poor

The entire questionnaire was printed on 11 X 17 inch white paper folded down the center to form a booklet. On the left side was either form A or form B of the summative evaluation and on the right side the twelve statements and Likert-responses which were identical on all questionnaires regardless of form.

POPULATION AND SAMPLE

The target population was the teachers and building administrators in the Dubuque Community School District in Dubuque, Iowa. This district encompasses 10,000 students and employs approximately 670 teachers. A single school district was chosen for several reasons: (1) the population has remained stable with very little attrition during the past several years; (2) all building administrators have received identical training in clinical supervision over the past three years; (3) there has been little transfer of teachers from one building to

another over the past several years. It was felt that these factors would provide a stable sample and reduce the possibility of confounding elements such as a variety of evaluation practices in multiple districts.

The study sample consisted of 78 elementary and 104 secondary teachers in the selected district. At the time of the study, the selected district was involved in the initial phase of developing School Effectiveness Teams in each building, one of several components of a district-wide school improvement endeavor. An understanding of individual processing styles often has accompanied such team building activities. Building principals were informed of the opportunity to identify cognitive processing styles of his/her faculty via participation in this project. For those schools who responded to the opportunity, all attending faculty were tested with the Group Embedded Figures Test and given the summary evaluation questionnaire. Each participant received an individual report of his/her score on the GEFT along with directions for interpretation of the score and a list of sample style characteristics applicable to the GEFT style range. Building administrators received a school and/or department composite if requested. Additional interpretation and/or workshops were also made available on request since that service is within the job description of the author.

The sample consisted of classroom teachers only. Support and administrative staff responses were not included in the sample. The sample included both elementary and secondary teachers from several schools across the district. Since all schools in the district were

staffed in similar proportions of regular and special education, the sample was proportionately representative of the teaching population of the district.

DATA COLLECTION PROCEDURES

Procedures used in the data collection process were as follows:

1. The research and literature were reviewed relative to the topics of teacher performance evaluation and cognitive processing styles.

2. The author designed a sample evaluation report and accompanying questionnaire. This was developed from actual written evaluations by a group of twenty evaluating administrators who were classified either Field Independent or Field Dependent according to their score on the GEFT.

3. Building administrators were informed of the availability to have individual cognitive style analyses completed for their building faculty and staff.

4. For those buildings responding to the opportunity for testing, arrangements were made to test attending faculty and collect completed questionnaires at a faculty meeting.

5. At each faculty meeting so arranged, the participants were given a brief introduction regarding the nature of the research project and the type of data to be collected. In most cases this was completed by the building administrator.

6. Each participant received a numbered manila folder with the following contents: (1) a short demographic survey, (2) a copy of the

Group Embedded Figures Test, (3) a copy of Sample Evaluation A or B and the accompanying questionnaire. All items included in each folder were numbered to match the folder. Participants entered their name on the GEFT only for the purpose of receiving their individual scores. Approximately half of the teachers tested at each site received Sample Evaluation A and half received Sample Evaluation B.

7. Directions were given and the GEFT was completed in three timed sections. Directions for the questionnaire were given and completed immediately following.

8. All materials were replaced in the folder and collected.

9. All faculty meetings were completed in thirty minutes or less.

10. Participants received individual scores and sample style characteristics within one week of the testing date. Principals received a school and/or department composite if requested.

11. Data was compiled and analyzed.

12. Conclusions were drawn and recommendations were made.

UNIT OF ANALYSIS

The unit of analysis for this study was individual teachers. Information relative to the cognitive style of the individual teachers was obtained through the administration of the Group Embedded Figures Test (GEFT). Information relative to teacher perception of a written evaluation report was obtained through the administration of a survey completed by the same individual teachers as were tested by the GEFT. Individual teachers received their cognitive style analysis score

privately by mail. The responses on the perception questionnaire were anonymous and were used in aggregate form for statistical analysis.

STATISTICAL ANALYSIS

Three forms of analysis were used to answer the three research questions of this study. A qualitative analysis of research and literature was conducted in the first question to determine both the elements of teacher performance evaluation and cognitive style. One instrument was chosen as a result of these analyses, to assess the cognitive style of the evaluators and teacher subjects.

The Group Embedded Figures Test was used to determine the cognitive style of the teacher subjects of the study. The content and format were developed by Herman Witkin and his associates in 1971. The group-administered test was used in its entirety and without alteration. The test was also used to determine the cognitive style of the evaluators prior to the development of a sample summary evaluation report by the author.

An author-constructed questionnaire was used to determine teacher perception of selected evaluation criteria. The sample summary evaluation report, developed in two forms reflecting the two dimensions of cognitive style as measured by the GEFT--Field Independent and Field Dependent--was constructed through the use of excerpts from actual evaluation reports written by the evaluators tested. The questionnaire was used to collect subject responses to twelve statements relating to the summary evaluation reports. The twelve statements were used to

identify factors in the written evaluation which were critical to the relationship between teacher cognitive style and perception of evaluation.

Several measures of statistical significance were used to answer the three research questions of the study. Initially, a 2 X 2 factorial analysis of variance was run to detect significant differences for questions 1 - 12 with regard to both summary evaluation form and GEFT score. Since the difference between GEFT scores for men and women were statistically significant, separate analysis of variance tests were run for men and women with regard to GEFT score and questionnaire form. To further investigate the relationship between GEFT score and response to the questionnaire, Pearson Product-Moment Correlation Coefficients were run between individual GEFT scores and questions 1 - 12 for each subject taking a given form of the questionnaire. Pearson Product-Moment Correlation Coefficients were also individually run for men and women on questions 1 - 12 and on form A and form B.

In order to determine the relationship between condition of field independence and field dependence and various demographic factors, Pearson Product-Moment Correlation Coefficients were run between each of the questions 1 - 12 and the variables of sex, form, teaching experience, teaching level, and GEFT score.

CHAPTER IV

PRESENTATION OF DATA AND ANALYSIS

This chapter presents the data that were gathered using the Group Embedded Figures Test and the author-constructed questionnaire developed for this research project to determine teacher perception of a final written evaluation report. These data were gathered to answer the following research questions:

1. Is there a relationship between cognitive style in terms of field dependence/field independence and teacher perception of selected teacher evaluation criteria?

2. What factors within the written evaluation--length, complexity of sentence structure, vocabulary, etc.--are identified as critical to the above relationship?

3. Is there a relationship between the condition of field dependence/field independence and various demographic factors such as sex, length of teaching career, or level of teaching?

Research Question Number One

Is there a relationship between cognitive style in terms of field dependence/field independence and teacher perception of selected teacher evaluation criteria?

The Group Embedded Figures Test (GEFT) was administered to 20 building administrators, 75 elementary teachers and 118 secondary teachers. The elementary teachers represented the faculties of three elementary schools and the secondary teachers represented the faculties of two high schools. All participants were employed by the Dubuque

Community School District in Dubuque, Iowa. (Data collected from the 20 building administrators was utilized in the design of the author-constructed questionnaire and was explained in Chapter 3.) The teacher participants included 84 male teachers and 109 female teachers who represented teaching experience from one to more than twenty years with 68.3% having over fifteen years teaching experience. Analysis of data regarding teaching level indicated a higher percentage of females at the elementary level and a higher percentage of males at the secondary level.

TABLE 1

FREQUENCIES

SEX	Men	84 - 43.5%		
	Women	109 - 56.5%		
			Men	Women
LEVEL	Elementary	75 - 39%	13 - 17%	62 - 83%
	Secondary	118 - 61%	71 - 60%	47 - 40%
TEACHING EXPERIENCE			Men	Women
	1- 5 years	12 - 6%	3 - 23%	9 - 67%
	6-10 years	18 - 9%	3 - 17%	15 - 83%
	11-15 years	31 - 16%	8 - 26%	23 - 74%
	16-20 years	56 - 29%	20 - 36%	36 - 64%
	Over 20 years	76 - 40%	50 - 66%	26 - 34%
		MEAN - 14 YEARS	MEDIAN - 20 YEARS	
QUESTIONNAIRE FORM			Men	Women
	Form A	93 - 48%	38 - 41%	55 - 59%
	Form B	100 - 52%	46 - 46%	54 - 54%

The number of individuals who responded to Form A and Form B of the questionnaire were relatively equal. The percentage of men and women for each form also indicated consistent balance. Interestingly, a

higher percentage of women had been teaching up to twenty years, but a higher percentage of men registered experience over twenty years.

The Group Embedded Figures Test was administered to determine the cognitive style of the participants on a continuum from Field Dependent to Field Independent. The field-independent person is more able to locate stimuli within complex perceptual fields and tends to be more analytically oriented than the field-dependent person.

The range of scores on the Group Embedded Figures Test is from 0 (Field Dependent) to 18 (Field Independent). As a group, the teacher scores occupied the entire range from extreme field dependent with a score of 0 to extreme field independent with a score of 18. As can be seen from Table 2, the mean score for all teachers was 10.532; the median score was 11.167 which was used to create a binomial categorization of high/low for analysis purposes.

TABLE 2

GEFT SCORE

GEFT SCORE	MEN	WOMEN	MEN & WOMEN	PERCENT
0	1	2	3	1.6
1	2	1	3	1.6
2	3	1	4	2.1
3	4	4	8	4.1
4	2	8	10	5.2
5	6	9	15	7.8
6	1	7	8	4.1
7	2	4	6	3.1
8	4	3	7	3.6
9	3	12	15	7.8
10	2	9	11	5.7
11	8	4	12	6.2
12	4	9	13	6.7
13	8	8	16	8.3
14	13	9	22	11.4
15	3	5	8	4.1
16	10	4	14	7.3
17	4	8	12	6.2
18	4	2	6	3.1
	n = 84	n = 109	N = 193	
	MEAN = 11	MEAN = 9.6	MEAN	10.532
			MEDIAN	11.167

Men, with a mean score of 11, performed slightly better than women who had a mean score of 9.6. The differences are slight but statistically significant at the .05 level. These figures are consistent with, though somewhat lower than, norms published in the GEFT manual (1971)--12 for men and 10.8 for women.

A specially-designed questionnaire was administered to the sample population to discover the relationship between cognitive style and teacher perception of selected teacher evaluation criteria. The questionnaire was described in Chapter 3. The questionnaire was developed into two forms--each containing a sample written evaluation and twelve questions with a Likert-style response format. Form A of the

questionnaire contained a written evaluation done in a Field Independent style; Form B was written in a Field Dependent style. Both forms contained identical questions and responses. Copies of the questionnaire, Forms A and B, may be found in Appendix D. Responses to the questionnaire are summarized in Table 3.

TABLE 3

Questionnaire Responses

Question	Response 1	2	3	4	Mean	Standard Deviation
1	15	66	83	29	2.653	0.828
2	49	86	54	3	2.057	0.774
3	25	111	56	1	2.161	0.631
4	81	65	38	9	1.870	0.889
5	44	75	58	16	2.238	0.899
6	4	23	69	96	3.326	0.785
7	99	58	31	4	1.688	0.816
8	38	73	67	15	2.306	0.875
9	120	50	19	3	1.505	0.738
10	92	72	24	5	1.699	0.786
11	22	66	74	31	2.591	0.892
12	9	33	84	67	3.083	0.838

It was theorized that a Field Independent person, one with a high score on the GEFT, would respond differently to the questions depending on which form he or she used. The same theory holds true for Field Dependent individuals, those with a low score on the GEFT. A number of analyses were performed to test for this relationship.

HIGH/LOW (FIELD INDEPENDENT/FIELD DEPENDENT) RESPONSES TO FORMS A AND B

Scores on the GEFT were divided between High and Low on the basis of the median score for all participants. Crosstabluation results of High/Low GEFT score by question for Form A and Form B are summarized in Table 4. Evidence of interaction between GEFT score and questions were found to be at the .05 level of significance for questions 5, 6, and 12 in Form A and for questions 1 and 2 in Form B.

These results indicate that on Form A, the form written in the field independent style, field independent teachers were more likely than field dependent teachers to rate the writing as lively and action oriented, were more willing to have this evaluation as their own, and were more likely than field dependent teachers to estimate that they would enjoy working with this evaluator. On Form B, the form written in the field dependent style, field dependent teachers were more likely to find the sentence structure simple, even though the general sentence structure was predominately complex; and were more likely to have less difficulty than field independent teachers in following and adequately understanding the written narrative.

TABLE 4

Questionnaire Responses for High/Low GEFT Score by Form A/B

FORM A

Response	1		2		3		4		Level of
	High	Low	High	Low	High	Low	High	Low	Significance
Question									
1	3	5	20	12	16	20	12	5	.24
2	11	10	25	18	15	12	0	1	.45
3	8	5	28	20	15	17	0	0	.14
4	13	18	23	13	12	11	3	0	.06
5	13	6	18	16	18	14	2	6	.05
6	1	1	4	7	15	16	31	18	.04
7	26	19	16	14	9	8	0	1	.24
8	12	7	24	18	11	16	4	1	.24
9	29	24	17	14	5	3	0	0	.38
10	23	21	20	16	7	4	1	1	.30
11	4	5	13	15	25	17	9	5	.09
12	1	1	4	10	24	17	22	14	.05

FORM B

Response	1		2		3		4		Level of
	High	Low	High	Low	High	Low	High	Low	Significance
Question									
1	1	6	17	17	25	22	9	3	.01
2	11	17	23	20	17	10	1	1	.05
3	7	5	36	27	9	15	0	0	.07
4	23	27	17	12	8	7	4	2	.14
5	12	13	18	23	18	8	4	4	.13
6	2	1	3	9	21	17	26	21	.16
7	25	29	18	10	7	7	2	1	.18
8	11	8	15	16	18	22	8	2	.36
9	35	32	10	9	4	7	3	0	.40
10	26	22	19	17	5	8	2	1	.31
11	10	3	17	21	17	15	8	9	.16
12	5	2	8	11	21	22	18	13	.41

A 2 X 2 factorial analysis of variance was run to detect significant differences for each of questions 1 - 12 with regard to both form and GEFT score. Significant differences were found for questions 1, and 12. A significant interaction was noted for question 5.

In responding to question 1, high GEFT scorers, the field independent teachers, found the sentence structure significantly more complex than did low GEFT (field dependent) teachers. The difference is more pronounced on Form B, written in the field dependent style.

In regard to question 12, both high and low GEFT (field independent and field dependent) teachers gave a higher rating to Form A, written in the field independent style, than to Form B indicating that teachers, regardless of field independence/dependence, would enjoy working with the evaluator who wrote it.

The interaction in question 5 indicates that high GEFT (field independent) teachers found the writing in Form A (field independent style) to be more lively and action-oriented than did low GEFT (field dependent) teachers. Conversely, low GEFT (field dependent) teachers found Form B (field dependent style) to be more lively and action oriented. The difference in rating between lively and action oriented/boring and predictable was much greater for low GEFT (field dependent) teachers indicating a greater appreciation for the complex writing style of Form B.

Results are presented in Table 5.

TABLE 5

ANOVA: Questionnaire Responses by High/Low GEFT and Form A/B

Question 1 -

The sentence structure seems to be

1 ---------- 2 ---------- 3 ---------- 4

simple complex

	GEFT				F	Significance of F
	High	Low		Main Effects	1.982	.14
Form A	2.73	2.63	2.68	Form	.123	.73
Form B	2.81	2.45	2.64	Score	3.796	.05
	2.77	2.53		2-Way Interaction	1.282	.26

Question 2 -

In order to follow and adequately understand the written narrative, I found myself rereading sections

1 ---------- 2 ---------- 3 ---------- 4

not at all a great deal

	GEFT				F	Significance of F
	High	Low		Main Effects	.930	.40
Form A	2.08	2.10	2.09	Form	.315	.57
Form B	2.15	1.87	2.02	Score	1.504	.22
	2.12	1.98		2-Way Interaction	1.797	.18

Question 3 -

Length of sentences seems to be

1 ---------- 2 ---------- 3 ---------- 4

too long too short

	GEFT				F	Significance of F
	High	Low		Main Effects	1.749	.18
Form A	2.14	2.27	2.20	Form	.751	.39
Form B	2.04	2.21	2.12	Score	2.830	.09
	2.09	2.24		2-Way Interaction	.056	.81

Question 4 -

This written report is

1 ---------- 2 ---------- 3 ---------- 4

easy to follow and comprehend difficult to follow and comprehend

	GEFT				F	Significance of F
	High	Low		Main Effects	3.020	.05
Form A	2.10	1.85	1.99	Form	2.814	.10
Form B	1.87	1.66	1.77	Score	3.050	.08
	1.98	1.75		2-Way Interaction	.023	.88

Question 5 -

The writing seems to be

1 ---------- 2 ---------- 3 ---------- 4

lively and action oriented — boring and predictable

	GEFT				F	Significance of F
	High	Low		Main Effects	.630	.53
Form A	2.18	2.48	2.31	Form	1.187	.28
Form B	2.27	2.06	2.17	Score	.088	.77
	2.22	2.26		2-Way Interaction	3.787	.05

Question 6 -

If I were the teacher being evaluated, I would be pleased to have this be my evaluation.

1 ---------- 2 ---------- 3 ---------- 4

No, not at all — Yes, very much

	GEFT				F	Significance of F
	High	Low		Main Effects	1.742	.18
Form A	3.49	3.21	3.37	Form	.264	.61
Form B	3.37	3.23	3.30	Score	3.175	.08
	3.43	3.22		2-Way Interaction	.410	.52

Question 7 -

Overall, I would rate this written evaluation

1 ---------- 2 ---------- 3 ---------- 4

Good — Poor

	GEFT				F	Significance of F
	High	Low		Main Effects	.165	.85
Form A	1.67	1.79	1.72	Form	.286	.59
Form B	1.73	1.57	1.66	Score	.039	.84
	1.70	1.67		2-Way Interaction	1.347	.25

Question 8 -

The style of writing seems to be

1 ---------- 2 ---------- 3 ---------- 4

objective (low degree of emotion) — exuberant (high degree of emotion)

	GEFT				F	Significance of F
	High	Low		Main Effects	1.399	.25
Form A	2.14	2.26	2.19	Form	2.764	.10
Form B	2.44	2.36	2.40	Score	.021	.88
	2.29	2.31		2-Way Interaction	.656	.42

Question 9 -

If this evaluation had been written about me, I would feel

1 ---------- 2 ---------- 3 ---------- 4

very comfortable about discussing it with the evaluator — somewhat hesitant about discussing it with the evaluator

	GEFT				F	Significance of F
	High	Low		Main Effects	.077	.93
Form A	1.53	1.49	1.51	Form	.008	.93
Form B	1.52	1.48	1.50	Score	.144	.71
	1.52	1.48		2-Way Interaction	.000	.94

Question 10 -

If this were my evaluation, I would feel

1 ---------- 2 ---------- 3 ---------- 4

very confident — somewhat unfulfilled

	GEFT				F	Significance of F
	High	Low		Main Effects	.059	.94
Form A	1.73	1.61	1.67	Form	.104	.75
Form B	1.67	1.75	1.71	Score	.017	.90
	1.70	1.69		2-Way Interaction	.713	.40

Question 11 -

This evaluator seems to be

1 ---------- 2 ---------- 3 ---------- 4

idealistic — realistic

	GEFT				F	Significance of F
	High	Low		Main Effects	.539	.58
Form A	2.76	2.54	2.66	Form	1.058	.31
Form B	2.44	2.63	2.53	Score	.010	.92
	2.60	2.58		2-Way Interaction	2.526	.11

Question 12 -

I think I would enjoy working with this evaluator

1 ---------- 2 ---------- 3 ---------- 4

not very much — very much

	GEFT				F	Significance of F
	High	Low		Main Effects	2.559	.08
Form A	3.31	3.10	3.22	Form	3.865	.05
Form B	3.00	2.96	2.98	Score	1.104	.30
	3.16	3.02		2-Way Interaction	.583	.46

MALE/FEMALE RESPONSES TO FORMS A AND B

Since the difference between GEFT scores for men and women were statistically significant, separate analysis of variance tests were run for men and women with regard to GEFT scores and questionnaire form. The results indicate significant levels of interaction in questions 2 and 6 for males and in questions 1 and 4 for females.

In question 2, high GEFT (field independent) men responded that they had to reread sections of the narrative more for Form B (field dependent style) than for Form A (field independent style). Conversely, low GEFT (field dependent) men had to reread the narrative for Form A (field independent style) more than for Form B (field dependent style).

In question 6, a similar response occurred. High GEFT (field independent) men would have been more pleased to have Form A (field independent style) than Form B (field dependent style) for their own evaluation. Low GEFT (field dependent) men indicated the opposite arrangement preferring the Form B (field dependent style) evaluation to be their own.

In responding to question 1, high GEFT (field independent) women found the sentence structure more complex on both Forms A (field independent style) and B (field dependent style) than did low GEFT (field dependent) women. For both high and low GEFT women, Form A (field independent style) was judged to have more complex sentence structure than Form B (field dependent style).

Both high (field independent) and low (field dependent) GEFT women indicated in question 4 that Form A (field independent style) was more

difficult to follow and comprehend than Form B (field dependent style). Similarly, the writing styles of both Forms A and B were judged to be more difficult by high GEFT (field independent) women than by low GEFT (field dependent) women.

TABLE 6

ANOVA: Responses by Men to Questionnaire by High/Low GEFT and Form A/B

Question 1 -
The sentence structure seems to be
1 ---------- 2 ---------- 3 ---------- 4
simple complex

	GEFT				F	Significance of F
	High	Low		Main Effects	1.260	.29
Form A	2.44	2.69	2.53	Form	2.510	.18
Form B	2.90	2.65	2.80	Score	.021	.88
	2.69	2.67		2-Way Interaction	1.861	.18

Question 2 -
In order to follow and adequately understand the written narrative, I found myself rereading sections
1 ---------- 2 ---------- 3 ---------- 4
not at all a great deal

	GEFT				F	Significance of F
	High	Low		Main Effects	.236	.79
Form A	1.88	2.23	2.00	Form	.418	.52
Form B	2.24	1.88	2.11	Score	.062	.80
	2.07	2.03		2-Way Interaction	3.992	.05

Question 3 -
Length of sentences seems to be
1 ---------- 2 ---------- 3 ---------- 4
too long too short

	GEFT				F	Significance of F
	High	Low		Main Effects	1.354	.26
Form A	2.16	2.15	2.16	Form	.008	.93
Form B	2.00	2.41	2.15	Score	2.706	.10
	2.07	2.31		2-Way Interaction	2.278	.14

Question 4 -

This written report is

1 ---------- 2 ---------- 3 ---------- 4

easy to follow and comprehend ... difficult to follow and comprehend

	GEFT				F	Significance of F
	High	Low		Main Effects	.019	.98
Form A	1.96	2.08	2.00	Form	.011	.92
Form B	2.03	2.00	2.02	Score	.026	.87
	2.00	2.03		2-Way Interaction	.139	.71

Question 5 -

The writing seems to be

1 ---------- 2 ---------- 3 ---------- 4

lively and action oriented ... boring and predictable

	GEFT				F	Significance of F
	High	Low		Main Effects	.798	.45
Form A	2.36	2.54	2.42	Form	1.375	.24
Form B	2.31	2.00	2.20	Score	.205	.65
	2.33	2.24		2-Way Interaction	1.543	.22

Question 6 -

If I were the teacher being evaluated, I would be pleased to have this be my evaluation.

1 ---------- 2 ---------- 3 ---------- 4

No, not at all ... Yes, very much

	GEFT				F	Significance of F
	High	Low		Main Effects	.949	.39
Form A	3.64	3.00	3.42	Form	.152	.70
Form B	3.31	3.44	3.36	Score	1.732	.19
	3.46	3.24		2-Way Interaction	5.187	.03

Question 7 -

Overall, I would rate this written evaluation

1 ---------- 2 ---------- 3 ---------- 4

Good ... Poor

	GEFT				F	Significance of F
	High	Low		Main Effects	.008	.99
Form A	1.64	2.00	1.76	Form	.006	.94
Form B	1.90	1.56	1.78	Score	.010	.92
	1.78	1.76		2-Way Interaction	3.155	.08

Question 8 -

The style of writing seems to be

1 ---------- 2 ---------- 3 ---------- 4

objective (low degree of emotion) exuberant (high degree of emotion)

	GEFT				F	Significance of F
	High	Low		Main Effects	1.217	.30
Form A	2.20	2.15	2.18	Form	1.941	.17
Form B	2.34	2.63	2.44	Score	.465	.50
	2.28	2.41		2-Way Interaction	.702	.41

Question 9 -

If this evalution had been written about me, I would feel

1 ---------- 2 ---------- 3 ---------- 4

very comfortable about discussing it with the evaluator somewhat hesitant about discussing it with the evaluator

	GEFT				F	Significance of F
	High	Low		Main Effects	.091	.91
Form A	1.52	1.75	1.59	Form	.010	.92
Form B	1.72	1.41	1.61	Score	.176	.68
	1.63	1.55		2-Way Interaction	2.047	.16

Question 10 -

If this were my evaluation, I would feel

1 ---------- 2 ---------- 3 ---------- 4

very confident somewhat unfulfilled

	GEFT				F	Significance of F
	High	Low		Main Effects	.249	.78
Form A	1.56	1.67	1.59	Form	.494	.48
Form B	1.76	1.65	1.72	Score	.009	.92
	1.67	1.66		2-Way Interaction	.347	.56

Question 11 -

This evaluator seems to be

1 ---------- 2 ---------- 3 ---------- 4

idealistic realistic

	GEFT				F	Significance of F
	High	Low		Main Effects	.358	.70
Form A	2.64	2.08	2.46	Form	.289	.59
Form B	2.28	2.47	2.35	Score	.394	.53
	2.44	2.31		2-Way Interaction	3.283	.07

Question 12 -

I think I would enjoy working with this evaluator

1 ---------- 2 ---------- 3 ---------- 4

not very much very much

	GEFT				F	Significance of F
	High	Low		Main EFfects	1.549	.22
Form A	3.36	2.92	3.22	Form	2.654	.11
Form B	2.86	3.00	2.91	Score	.347	.557
	3.09	2.97		2-Way Interaction	2.276	.135

TABLE 7

ANOVA: Responses by Women to Questionnaire by High/Low GEFT and Form A/B

Question 1 -
The sentence structure seems to be
1 ---------- 2 ---------- 3 ---------- 4
simple complex

	GEFT				F	Significance of F
	High	Low		Main Effects	4.744	.01
Form A	3.00	2.61	2.80	Form	3.337	.07
Form B	2.70	2.33	2.49	Score	5.713	.02
	2.86	2.47		2-Way Interaction	.009	.92

Question 2 -
In order to follow and adequately understand the written narrative, I found myself rereading sections
1 ---------- 2 ---------- 3 ---------- 4
not at all a great deal

	GEFT				F	Significance of F
	High	Low		Main Effects	1.909	.15
Form A	2.27	2.04	2.15	Form	1.727	.19
Form B	2.04	1.87	1.94	Score	1.908	.17
	2.16	1.95		2-Way Interaction	.036	.85

Question 3 -
Length of sentences seems to be
1 ---------- 2 ---------- 3 ---------- 4
too long too short

	GEFT				F	Significance of F
	High	Low		Main Effects	.910	.41
Form A	2.12	2.32	2.22	Form	1.126	.29
Form B	2.09	2.10	2.09	Score	.780	.379
	2.10	2.21		2-Way Interaction	.587	.45

Question 4 -
This written report is
1 ---------- 2 ---------- 3 ---------- 4
easy to follow and comprehend difficult to follow and comprehend

	GEFT				F	Significance of F
	High	Low		Main Effects	5.404	.01
Form A	2.23	1.75	1.98	Form	6.285	.01
Form B	1.65	1.47	1.55	Score	4.019	.05
	1.96	1.60		2-Way Interaction	.777	.38

Question 5 -

The writing seems to be

1 ---------- 2 ---------- 3 ---------- 4

lively and action oriented boring and predictable

	GEFT				F	Significance of F
	High	Low		Main Effects	.562	.57
Form A	2.00	2.45	2.24	Form	.287	.59
Form B	2.22	2.10	2.15	Score	.881	.35
	2.10	2.27		2-Way Interaction	2.490	.19

Question 6 -

If I were the teacher being evaluated, I would be pleased to have this be my evaluation.

1 ---------- 2 ---------- 3 ---------- 4

No, not at all Yes, very much

	GEFT				F	Significance of F
	High	Low		Main Effects	.673	.51
Form A	3.35	3.31	3.33	Form	.149	.70
Form B	3.43	3.13	3.26	Score	1.155	.29
	3.39	3.22		2-Way Interaction	.743	.39

Question 7 -

Overall, I would rate this written evaluation

1 ---------- 2 ---------- 3 ---------- 4

Good Poor

	GEFT				F	Significance of F
	High	Low		Main Effects	.407	.67
Form A	1.69	1.69	1.69	Form	.795	.38
Form B	1.52	1.58	1.56	Score	.032	.86
	1.61	1.63		2-Way Interaction	.040	.842

Question 8 -

The style of writing seems to be

1 ---------- 2 ---------- 3 ---------- 4

objective exuberant

(low degree of emotion) (high degree of emotion)

	GEFT				F	Significance of F
	High	Low		Main Effects	.525	.59
Form A	2.08	2.31	2.20	Form	.999	.32
Form B	2.57	2.23	2.37	Score	.075	.78
	2.31	2.27		2-Way Interaction	2.722	.10

Question 9 -

If this evalution had been written about me, I would feel

1 ---------- 2 ---------- 3 ---------- 4

very comfortable about discussing it with the evaluator — somewhat hesitant about discussing it with the evaluator

	GEFT High	GEFT Low		Main Effects	F	Significance of F
Form A	1.54	1.38	1.45	Form	.125	.88
Form B	1.26	1.52	1.41	Score	.146	.70
	1.41	1.45		2-Way Interaction	.116	.73
					2.555	.11

Question 10 -

If this were my evaluation, I would feel

1 ---------- 2 ---------- 3 ---------- 4

very confident — somewhat unfulfilled

	GEFT High	GEFT Low		Main Effects	F	Significance of F
Form A	1.88	1.59	1.73	Form	.037	.96
Form B	1.57	1.81	1.70	Score	.022	.88
	1.73	1.70		2-Way Interaction	.050	.82
					3.204	.08

Question 11 -

This evaluator seems to be

1 ---------- 2 ---------- 3 ---------- 4

idealistic — realistic

	GEFT High	GEFT Low		Main Effects	F	Significance of F
Form A	2.88	2.72	2.80	Form	.286	.75
Form B	2.65	2.71	2.69	Score	.450	.50
	2.78	2.72		2-Way Interaction	.101	.75
					.419	.52

Question 12 -

I think I would enjoy working with this evaluator

1 ---------- 2 ---------- 3 ---------- 4

not very much — very much

	GEFT High	GEFT Low		Main Effects	F	Significance of F
Form A	3.27	2.17	3.22	Form	1.221	.30
Form B	3.17	2.94	3.04	Score	1.218	.27
	3.22	3.05		2-Way Interaction	1.110	.30
					.201	.66

CORRELATION COEFFICIENTS

To further investigate the relationship between GEFT score and response to the questionnaire Pearson Product-Moment Correlation Coefficients were run between individual GEFT scores and questions 1 - 12 for each subject taking a given form of the questionnaire. Results indicate correlations significantly different for question 1 in Form A and for questions 1, 2, 3, and 4 in Form B.

TABLE 8

Pearson Product-Moment Correlation Coefficients: Questions 1 - 12 by GEFT

Form A

Question #	Correlation Coefficient	Level of Significance
1	.0257	.40
2	-.0218	.42
3	-.0764	.24
4	.1426	.09
5	-.0765	.23
6	.1186	.13
7	-.0050	.48
8	-.0609	.28
9	.0704	.25
10	.1324	.10
11	.1689	.05
12	.0538	.31

Form B

Question #	Correlation Coefficient	Level of Significance
1	.2869	.002
2	.2357	.01
3	-.1837	.04
4	.1836	.04
5	.0988	.17
6	.1115	.14
7	.0542	.30
8	.0615	.27
9	.0361	.36
10	.0042	.48
11	.0812	.21
12	.0314	.38

Again, since the difference in GEFT scores for men and women was statistically significant, further individual analysis was made for men and women on questions 1 - 12 for Form A and Form B. Results indicate significant relationships on questions 1 and 4 for women taking Form A, on questions 2 and 3 for men taking Form B, and on questions 1 and 4 for women taking Form B. No significant relationship was discovered on any question for men taking Form A.

TABLE 9

Pearson Product-Moment Correlation Coefficients:
Questions 1-12 by Males and Females for Form A and Form B

Form A	Men		Women	
Question #	Correlation Coefficient	Level of Significance	Correlation Coefficient	Level of Significance
1	-.2002	.18	.2203	.05
2	-.2279	.09	.1380	.16
3	.0209	.45	-.1358	.16
4	-.0782	.32	.2824	.02
5	.0567	.37	.1716	.11
6	.2570	.06	.0225	.44
7	-.0440	.40	.0173	.45
8	-.0431	.40	-.0712	.30
9	-.0273	.44	.1206	.19
10	.0602	.36	.1952	.08
11	.2206	.10	.1776	.10
12	.1089	.26	.0166	.45

Form B	Men		Women	
Question #	Correlation Coefficient	Level of Significance	Correlation Coefficient	Level of Significance
1	.1692	.13	.3703	.003
2	.2789	.03	.1751	.11
3	-.2979	.02	-.0882	.27
4	.1123	.23	.2181	.06
5	.1941	.10	.0096	.47
6	.0138	.46	.2056	.07
7	.1918	.10	-.1271	.19
8	-.0585	.35	.1775	.10
9	.1421	.17	-.1404	.16
10	.1078	.24	-.1389	.16
11	-.0498	.37	-.9747	.30
12	-.0941	.27	.1863	.09

Research Question Number Two

What factors within the written evaluation--length, complexity of sentence structure, vocabulary, etc.-- are identified as critical to the above relationship?

Through questions 1 - 12, Forms A and B of the questionnaire presented elements of the written evaluation report for response by the participants. The individual questions focused on specific elements such as sentence length, complexity of syntax, predictability, etc. Pearson Correlation Coefficients were utilized to discover relationships between each of the questions and the variables of sex, form, teaching experience, teaching level, and GEFT score. Repeating levels of significant relationships on specific questions suggest they may be of greater importance in the perception of written evaluations. Individual questions indicate significant differences with variables as follows:

Sex	----------	Question 11 (.002)
Form	----------	Question 4 (.02)
		Question 8 (.04)
		Question 12 (.04)
Teaching Experience	--	Question 3 (.03)
Teaching Level	-------	Question 4 (.009)
		Question 6 (.04)
GEFT Score	----------	Question 1 (.04)

These results indicate that elements of the written evaluation influencing the perception of teachers are complexity of sentence structure, length of sentences, ease of reading and comprehension, level of activity in vocabulary, degree of emotion, idealistic/realistic

style, and anticipated positive or negative reaction to the evaluator.

Results are presented in Table 10.

TABLE 10

Pearson Product-Moment Correlation Coefficients: Comparison of Variables Sex, Form, Teaching Experience, Teaching Level and GEFT Score for Questions 1 - 12

	SEX		FORM	
Question	Correlation Coefficient	Level of Significance	Correlation Coefficient	Level of Significance
1	-.0222	.38	-.0124	.43
2	.0107	.44	-.0139	.42
3	.0134	.42	-.0782	.14
4	-.1080	.07	-.1433	.02
5	-.0477	.26	-.0760	.15
6	-.0283	.35	-.0563	.22
7	-.0685	.18	-.0491	.25
8	-.0153	.41	.1279	.04
9	-.0907	.10	.0079	.45
10	.0403	.29	.0217	.38
11	.2059	.002	-.0614	.20
12	.0594	.21	-.1254	.04

	TEACHING EXPERIENCE		TEACHING LEVEL	
Question	Correlation Coefficient	Level of Significance	Correlation Coefficient	Level of Significance
1	.0052	.47	-.0005	.50
2	-.0236	.37	-.0374	.30
3	.1355	.03	-.0830	.13
4	.0049	.47	.1712	.009
5	.0649	.19	.0460	.26
6	-.0052	.47	.1287	.04
7	-.0003	.50	.0074	.46
8	-.0569	.22	.0113	.44
9	.0269	.36	.0709	.16
10	.0062	.47	-.0209	.39
11	-.1068	.07	-.0442	.27
12	-.0408	.29	-.0227	.38

	GEFT Score	
Question	Correlation Coefficient	Level of Significance
1	.1257	.04
2	.0970	.09
3	-.1108	.06
4	.1121	.06
5	.0018	.50
6	.1092	.06
7	.0073	.46
8	.0187	.40
9	.0129	.43
10	.0284	.35
11	.0618	.21
12	.0736	.16

Research Question Number Three

Is there a relationship between the condition of field dependence/field independence and various demographic factors such as sex, length of teaching career, or level of teaching?

Investigation into a relationship between the condition of field dependence/field independence and variables such as sex, length of teaching career and level of teaching was done through a series of Pearson Product-Moment Correlation Coefficient tests. In each case the total range of GEFT scores, from 0 - 18, was correlated with each of the variables. A significant correlation was discovered between sex and GEFT score. No significant relationship was discovered between GEFT score and length of teaching career or level of teaching. The results are depicted in Table 11.

TABLE 11

Pearson Product-Moment Correlation Coefficients: Individual GEFT Scores by Sex (See also Table 2), Length of Teaching Career, and Teaching Level

GEFT Score by Sex	Correlation Coefficient	-.1167
	Level of Significance	.05
GEFT Score by Length of Teaching Career	Correlation Coefficient	-.0689
	Level of Significance	.18
GEFT Score by Teaching Level	Correlation Coefficient	-.0255
	Level of Significance	.36

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

SUMMARY

The purpose of the study was to examine whether teachers perceive the written evaluation differently when their cognitive style closely agrees with that of the evaluator than when teacher and evaluator cognitive styles lack agreement. Three research questions provided the framework by which the purpose of the study was accomplished: (1) Is there a relationship between cognitive style in terms of field dependence/field independence and teacher perception of selected teacher evaluation criteria? (2) What factors within the written evaluation--length, complexity of sentence structure, vocabulary, etc.--are identified as critical to the above relationship? (3) Is there a relationship between the condition of field dependence/field independence and various demographic factors such as sex, length of teaching career, or level of teaching?

In order to accomplish the purpose of this study, the following methods and procedures were utilized:

1. The population consisted of all teachers and administrators in the Dubuque Community School District, Dubuque, Iowa.

2. The sample consisted of 78 elementary and 104 secondary teachers in the Dubuque Community School District.

3. The research and literature were reviewed relative to the topics of teacher performance evaluation and cognitive style.

4. Letters were sent to all building principals inviting them to become part of the study.

5. The Group Embedded Figures Test was administered to faculty members in schools that responded to the invitation.

6. At the same sitting, faculty members responded to the summary evaluation questionnaire.

7. Individual results of the GEFT and a summary of Field Dependent/Field Independent style characteristics were mailed along with a note of thanks to each subject tested. Principals received group, building, or department analysis if requested.

8. The data collected from the GEFT analysis and the questionnaire were tabulated and analyzed.

9. Conclusions were drawn, and recommendations were made.

The limitations of this study were those inherent in the types of instrumentation utilized. Data consisted of measured perceptions rather than objective information.

While there are other factors which impact teacher perception of evaluation, this study was limited to teacher perception of writing style differences as manifested in a sample summative evaluation report.

The study was delimited to the Dubuque Community School District, Dubuque, Iowa. It was not delimited to any particular school in that district nor any particular type of school or department.

This chapter presents the conclusions and recomendations of the study resulting from the review of the literature as applied to the questions addressed in the study and analysis of test and questionnaire responses and demographic information.

Conclusions from Literature and Research

Several conclusons to this study evolved. They were based solely on the evidence found in the study and did not reflect the opinions of any particular idividual. The conclusions reflected only the data gathered and reported.

1. Although improvement of instruction is often identified as the purpose of evaluation, the evaluation process frequently does not achieve this goal.

Teacher performance evaluation is frequently a mandated supervisory task and indicates that teacher success in the classroom can be readily measured. Whether a teacher "measures up" on a given standard more often indicates whether he/she will remain on staff than it focuses on positive or negative aspects of teaching performance which could lead to improvement. The effectiveness of traits, techniques, or skills often has not been supported by research. Further, teachers require specific feedback which can be delivered in a manner that makes sense to them. Communication skills are critical to the process. Evaluation which is accomplished in response to mandates rather than with the time and energy necessary to support and guide teachers will likely not be effective toward the improvement of instruction.

2. A myriad of factors, including both those with a professional base and those with a psychological base, influence teacher perception of evaluation.

The close relationship between administrator and teacher during the evaluation cycle can give rise to personality and philosophical

conflicts. Evaluation procedures can threaten the teacher's sense of self-esteem or efficacy and curtail acceptance of problems or shortcomings. Teacher perceptions of job status also influence their views regarding the use of administrator judgments, self-assessment, and accomplishment of objectives stated in advance. Evaluation can arouse feelings of defensiveness and distrust. Teachers want humane and meaningful teacher evaluation as well as viable and defensible procedures. Teacher perception of lack of credibility on the part of the evaluator can also frustrate evaluation efforts, especially in the direction of improvement of instruction.

3. Cognitive style is pervasive across a wide range of behavior.

Cognitive processing style is a holistic reflection of an individual's behavior. It is constant over the course of one's life and is manifested in nearly everything an individual does. The characteristic strategies that one uses to receive, process, and communicate information are present in everything from reading, to mathematical computation, to driving a car, to preparing a meal, to selection of specific items of language in a given situation.

4. Some degree of congruence in thinking is necessary if the evaluation process is to be a learning experience.

The research which has centered on the gains in achievement which occur when the cognitive style of the teacher and student are matched indicates that style match can enhance learning. In addition, information regarding clinical supervision and the closeness of the relationship between teacher and evaluator during this process, indicates that the supervisor can greatly enhance the situation through

knowledge of the thinking, philosophy, and feelings of the teacher. Evaluation as a learning process could be enhanced in the same way that student learning is enhanced by supervisor/teacher style match.

Conclusions from Current Study

1. A relationship exists between GEFT score and responses to specific statements on the questionnaire.

Several statements on the questionnaire were found to have significant results at the .05 level: statements 5, 6, and 12 in Form A and 1 and 2 in Form B. These statements are:

Form A -

5. The writing seems to be

lively and action oriented - - - boring and predictable.

[High GEFT (field independent) scorers found the narrative to be lively and action oriented.]

6. If I were the teacher being evaluated, I would be pleased to have this be my evaluation.

No, not at all - - - Yes, very much

[High GEFT (field independent) scorers indicated they would be pleased to have this evaluation as their own.]

12. I think I would enjoy working with this evaluator

not very much - - - very much.

[High GEFT (field independent) scorers indicated they would enjoy working with this evaluator.]

Form B -

1. The sentence structure seems to be

simple - - - complex.

[High GEFT (field independent) scorers found the sentence structure to be complex. Low GEFT (field dependent) scorers indicated the sentence structure was simple.]

2. In order to follow and adequately understand the written narrative, I found myself rereading sections

not at all - - - a great deal.

[High GEFT (field independent) scorers indicated they were required to reread sections a great deal. Low GEFT (field dependent) scorers felt little need to reread the narrative for understanding.]

The significant findings on Form B, the Field Dependent writing style, appears to be directly related to elements of sentence structure, whereas the significant findings on Form A, the Field Independent writing style, seem to be more directly related to value perceptions, especially in statements 6 and 12. At least in these areas an individual's cognitive style as reported through the GEFT score seems to have significant relationship.

2. <u>The statistical difference in male/female GEFT score was manifested through responses to different statements regardless of which evaluation form they had read</u>.

Significant differences were found in statements 2 and 6 for males:

2. In order to follow and adequately understand the written narrative, I found myself rereading sections

not at all - - - a great deal.

6. If I were the teacher being evaluated, I would be pleased to have this be my evaluation.

No, not at all - - - Yes, very much

and statements 1 and 4 for females:

1. The sentence structure seems to be

simple - - - complex

4. This written report is

easy to follow - - - difficult to follow

and comprehend and comprehend

It appears that the focus for women was more on direct, concrete decisions, and for men more on judgments that affect the end result.

3. <u>With respect to GEFT score Form B, the evaluation written in Field Dependent style accounted for more significant difference than Form A, the evaluation written in Field Independent style</u>.

With respect to GEFT score, statements 1, 2, 3, and 4 indicated significant differences, whereas only statement 11 in Form A was statistically significant.

1. The sentence structure seems to be

simple - - - complex.

2. In order to follow and adequately understand the written narrative, I found myself rereading sections

not at all - - - a great deal.

3. Length of sentences seems to be

too long - - - too short.

4. This written report is

easy to follow - - - difficult to follow

and comprehend and comprehend.

11. This evaluator seems to be

idealistic - - - realistic.

Form B, written in the Field Dependent style with more complex sentence structure and embedded clauses, seemed to elicit more significant differences on statements that focused on sentence structure and comprehension. Form A, written in the Field Independent style with more economical and simple sentence structure seemed to elicit interaction not related to sentence structure and comprehension but focused more on the philosophical tendency of the evaluator.

4. Without regard to GEFT score, men and women responded differently to Form A and Form B. Men showed no significant differentiation with Form A and women only with statements 1 and 4. On Form B, men showed significant differences on statement 2 and 3, women on statements 1 and 4.

Research, and this study, reaffirms that men tend to be more field independent than women. Form A, written in the Field Independent style, would be expected to be more to the perceptual liking for men than for women. The study indicated that to be the case--men showed no significant differences and women showed differences on statements that had to do with sentence structure and comprehension. Form B, written in the Field Dependent style created differences for men on statements

dealing with sentence length and comprehension, while women responded much as they did to Form A but to a stronger degree of significance with relation to sentence complexity.

5. Demographic variables indicated a variety of relationships with statements on the questionnaire. Sex and teaching level were the most significant.

Statements 1, 3, 4, 6, 8, 11, and 12 indicated at least some relationship with demographic variables. However, since sex and teaching level indicated differences at the .002 and .009 level respectively, there may be a need to further investigate these variables, especially since there are more women at the elementary level and more men at the secondary level.

6. Relationships are far more subtle than anticipated.

It seems evident from the wide distribution of significant relationships across variables, that there is indeed some relationship between cognitive processing style and teacher perception of evaluation. However, since the same variables did not show consistent results, the results seems somewhat confusing. Clearly, there is some relationship, but further investigation is warranted.

Recommendations

1. Administrators should recognize the close relationship between cognitive processing style and behavior. People behave according to predetermined style characteristics. Concepts which are communicated by a person of one style often cannot be identically received by a person

of another style. Some kind of interpretation must be initiated, either by the giver or the receiver. When the administrator is in charge of guiding the teacher toward improvement of instruction, it is incumbent on the administrator to recognize various style characteristics and to adjust his/her communication delivery to the mode of the receiver.

2. Administrators should recognize that there are certain predictable behavioral responses for various styles, and for men and women of either style. The administrator who studies cognitive styles will have a better understanding of the behaviors which are characteristic to each style. It has further been determined that men and women exhibit some striking differences in their behavior regardless of style. A significant difference can be observed between a strongly Field Independent individual who is male and one who is female. The same is true for a strongly Field Dependent individual. The differences can also be manifested differently in various cultures.

3. Teacher evaluation should be viewed as a synergistic process. If teacher evaluation is to be meaningful to the teacher, he/she must have a meaningful part in it. Any commitment to change must be owned by the person expected to do the changing. With equal involvement and meaningful inclusion in the process, improvement of instruction has a much better chance of lasting success.

4. Administrators should become aware of their own style and recognize that it pervades all of their behavior. All humans characteristically behave according to a predetermined style. Even the administrator who is functioning as he/she "should" cannot help but manifest the characteristics of his/her own style. The best course of

action is to become well aware of one's own style and recognize when, how, and why one reacts in a particular way. Through his/her own analysis, the administrator can better understand the behavior of others.

5. Evaluation content must be organizationally structured but must also include human elements. In this day of contract grievances, the wise administrator adheres to the principles of due process. Teacher evaluation must somehow include objective and defensible elements, but include the teacher as a person in meaningful and humane ways. Defensiveness can be replaced by trust if the administrator and teacher can come to an agreement of goals and methods of instruction and attitutes about education.

Recommendations for Further Study

1. Replicate the study in another district or geographic area in order to generalize the data to a larger population.

2. Replicate the study to consider leadership/management as a possible factor in teacher perception of evaluation.

3. Replicate the study using teacher comparison of sample written evaluation reports as the unit of measure.

4. Replicate the study using teacher ranking of sample written evaluation reports as the unit of measure.

5. Replicate the study using another instrument to assess cognitive style.

6. More research should be conducted relative to the emotional factors that influence teacher perception of evaluation.

7. More research should be conducted to isolate elements of writing style, especially as they relate to teacher evaluation.

8. More research should be conducted to determine whether different combinations of content written in alternative styles are capable of delivering mixed messages just as happens with verbal content accompanied by incongruent nonverbal behavior.

9. Since evidence exists regarding different behavior characteristics of men and women, a study relative to how these differences influence teacher evaluation should be conducted.

10. A study of teacher perception of evaluation during the formative stage should be compared to that of the summative stage.

11. The study should be replicated in districts which have different types of evaluation systems.

12. A study should be conducted to see if teacher perception of evaluation has a relationship to improvement of instruction.

13. A study should be conducted to see what effect evaluation and/or teacher perception of evaluation has on student achievement.

BIBLIOGRAPHY

Allport, G. W. (1937). Personality, a psychological interpretation. New York: Henry Holt and Company.

Blome, A. C. (1985). Developing a teacher evaluation process. NASSP Bulletin, April, 80-84.

Bruner, J. S. (1966). Studies in cognitive growth. New York: John Wiley.

Bruner, J. S., Goodnow, J. J., & Austin, G. A. (1956). A study of thinking. New York: Wiley.

Carter, H., & Loo, R. (1980). Group Embedded Figures Test: psychometric data." Perceptual and Motor Skills, 50, 32-34.

Clar, P. N. (1971). The relationship of psychological differentiation to client behavior in vocational choice counseling" (Doctoral dissertation, University of Michigan, 1971). Dissertation Abstracts International, 32, 1837B. (University Microfilms No. 71-23,723)

Cogan, Morris L. (1973). Clinical supervision. Boston: Houghton Mifflin.

Dickstein, L. S. (1968). Field independence in concept attainment. Perceptual and Motor Skills, 27, 635-642.

Duke, D., & Stiggins, R. (1986). Teacher evaluation, five keys to growth. Washington, D.C., National Education Association. Joint publication of AASA, NAESP, NASSP, and NEA.

Dunn, R. (1983). Learning style and its relation to exceptionality at both ends of the spectrum. Exceptional Children, April, 496-506.

Dunn, R., Beaudry, J., & Klavas, A. (1989). Survey of research on learning styles. Educational Leadership, March.

Dunn, R., Cavanaugh, D., Eberle, B., & Zenhausern, R. (1982). Hemispheric preference: the newest element of learning style. The American Biology Teacher, 44(5), 291-294.

Dunn, R., & Dunn, K. (1979). Learning styles/teaching styles: should they...can they...be matched?" Educational Leadership, January, 238-244.

Dunn, R., & Dunn, K. (1978). Teaching students through their individual learning styles: a practical approach. Reston, VA: Reston Publishing Company.

Erikson, E. H. (1975). Life history and the historical moment. New York: W. W. Norton.

Ertel, S. (1985). Content analysis: an alternative approach to open and closed minds. High School Journal, April/May, 229-240.

Fitz, R. J. (1971). The differential effects of praise and censure on serial learning as dependent on locus of control and field dependency" (Doctoral dissertation, Catholic University of America, 1970). Dissertation Abstracts International, 31, 4310B. (University Microfilms No. 71-1457)

Fizzell, R. L. (1984). The status of learning styles." The Educational Forum, Spring, 303-312.

Fleming, M. L., Knowlton, J. Q., Blain, B. B., Levie, W. H., & Elerian, A. (1968). Message design: the temporal dimension of message structure. Final report. Bloomington, IN: Indiana University. (ERIC Document Reproduction Service No. ED 023 294)

Frank, B., & Davis, J. K. (1972). Effect of field-independence match or mismatch on a communication task. Journal of Educational Psychology, 74(1), 23-31.

French, J. Jr., & Raven, B. (1959). The bases of social power. In Cartwright (Ed.), Studies in Social Power. Ann Arbor, MI: Institute for Social Research.

Fry, P. S., & Charron, P. A. (1980). Effects of cognitive style and counselor-client compatibility on client growth. Journal of Counseling Psychology, 27, 529-538.

Fullan, M. (1981). The meaning of educational change. New York: Teachers College Press.

Gage, N. L. (Ed.). (1963). Handbook of research on teaching. Chicago: Rand-McNally.

Glass, G. V. (1975). A paradox about excellence of schools and the people in them. Educational Researcher, March, 9-13.

Glatt, C. J. W. (1970). The relationship of level of differentiation, acceptance of authority and locus of control to readiness for vocational planning in eighth grade boys. (Doctoral

dissertation, New York University, 1970). Dissertation Abstracts International, 31, 2179A. (University Microfilms No. 70-21,132)

Glickman, C. D. (1980). The developmental approach to supervision. Educational Leadership, November, 178-180.

Goleman, R., & Warren, R. (1973). Discriminant analysis of study strategies connected with college grade success in different major fields. Journal of Educational Measurement, 10, 39-47.

Goldsberry, L. F. (1984). The realities of clinical supervision. Educational Leadership, April, 12-15.

Good, T. L., Biddle, B., & Brophy, J. (1975) Teachers make a difference. Washington, D.C.: University Press of America, Inc.

Gregorc, A. F. (1979) Learning/teaching styles: potent forces behind them. Educational Leadership, January, 234-236.

Herlihy, B., & Herlihy, D. (1985). Improving principal-teacher relationships by understanding the concept of power. NASSP Bulletin, December, 95-102.

Hersey, P., & Blanchard, K. (1977). Management of organizational behavior. 3rd ed. Englewood Cliffs, NJ: Prentice-Hall.

Hunt, D. E. (1971) Matching models in education. Toronto: Ontario Institute for Studies in Education.

Jensen, M. A. (1981). How teachers view teacher evaluation. Education, 102(2), 130-137.

Kagan, D. (1980). Syntactic complexity and cognitive style. Applied Psychlinguistics, 1, 111-122.

Kane, M. (1984). Cognitive styles of thinking and learning, part one. Academic Therapy, 19(5), 527-536.

Kane, M. (1984). Cognitive styles of thinking and learning, part two. Academic Therapy, 20(1), 83-92.

Keefe, J. W. (1985). Assessment of learning style variables: the NASSP task force model. Theory Into Practice, 24(2), 138-144.

Kepner, M., & Neimark, E. (1984). Test-retest reliability and differential patterns of score change on the group embedded figures test. Journal of Personality and Social Psychology, 46, 1405-1413.

Kiersey, D., & Bates, M. (1978). Please understand me. Del Mar, CA: Promethean Books.

Kirschenbaum, J. (1969). Analytic-global cognitive style and concept attainment strategies. (Doctoral dissertation, Claremont Graduate School, 1968). Dissertation Abstracts International, 29, 4868B-4869B. (University Microfilms No. 68-18,276)

Kohlberg, L. (1969). Stage and sequence: the cognitive-developmental approach to socialization. In D. Goslin (Ed.), Handbook of Socialization Theory and Research. Chicago: Rand McNally.

Kolb, D. A. (1976). Learning style inventory: technical manual. Boston: McBer & Company.

Kolb, D. A., Rubin, I. M., & McIntyre, J. M. (1984). Organizational psychology: an experiential approach (4th ed.). Englewood, Cliffs, NJ: Prentice-Hall.

Koran, M. L., Snow, R. E., & McDonald, F. J. (1971). Teacher aptitude and observational learning of a teaching skill. Journal of Educational Psychology, 72, 219-228.

Kuchinskas, G. (1979). Whose cognitive style makes the difference? Educational Leadership, January, 269-271.

Lerch, R. D. (1980). The clinical model: the optimum approach to supervision. The Clearing House, 53, 238-240.

Levy, J. (1983). Research synthesis on right and left hemispheres: we think with both sides of the brain. Educational Leadership, January, 66-71.

Longoni, A., & Pizzamiglio, L. (1981). Aspects of verbal processing in relation to perceptual disembedding ability. Journal of Psycholinguistic Research, 10(2), 199-208.

Lotas, A. (1977). Learning styles and curriculum. The Affective Educator, Spring.

Lusk, E., & Wright, H. (1981). Differences in sex and curricula on learning the Group Embedded Figures Test. Perceptual and Motor Skills, 53, 8-10.

MacNaughton, R. H., Tracy, S., & Rogus, J. F. (1984). Effective teacher evaluation--process must be personalized, individualized. NASSP Bulletin, November, 1-11.

Nebelkopf, E. B., & Dreyer, A. A. (1973). Continuous-discontinuous concept attainment as a function of individual differnces in cognitive style. Perceptual and Motor Skills, 36, 655-662.

Oltman, P. K., Raskin, E., & Witkin, H. A. (1971). The Group Embedded Figures Test, GEFT. Palo Alto, CA: Consulting Psychologists Press.

Osipow, S. H. (1969). Cognitive styles and educational-vocational preferences and selection. Journal of Counseling Psychology, 16, 534-546.

Paclisanu, M. I. (1970). Interacting effects of field-dependence, stimulus deprivation and two types of reinforcement upon problem-solving in elementary school children. (Doctoral dissertation, Temple University, 1970). Dissertation Abstracts International, 31, 2290B-2291B. (University Microfilms No. 70-19,763)

Panek, P., Funk, L., & Nelson, P. (1980). Reliability and validity of the Group Embedded Figures Test across the life span. Perceptual and Motor Skills, 50, 1171-1174.

Paulin, P. (1981). The politics of evaluation at the local level: a view through teachers' perspectives. (ERIC Document ED 207 224).

Piaget, J. (1973). The language and thought of the child. New York: Meridian.

Reckinger, N. (1979). Choice as a way to quality learning. Educational Leadership, January, 255-256.

Reckinger, N. (1980). Joining hands: using learning and teaching styles. Mimeo, Center for Educational Alternatives, California State, Fullerton.

Redike, F. W., (Ed.). (1973). Handbook for teacher improvement utilizing the educational sciences. American Educational Sciences Association.

Ruble, D. N., & Nakamura, C. Y. (1972). Task orientation versus social orientation in young children and their attention to relevant social cues. Child Development, 43, 471-480.

Satterly, D. J., & Brimer, M. A. (1971). Cognitive styles and school learning. British Journal of Educational Psychology, 41, 294-303.

Schreibner, R. M. (1970) Field dependence-independence as a basic variable in the measurement of interest and personality. (Doctoral dissertation, Temple University, 1969). Dissertation Abstracts International, 30, 3375B-3376B. (University Microfilms No. 69-16,291)

Sears, R. R.; & Feldman, S. S., (Eds.). (1973). The seven ages of man. Los Altos, CA: William Kaufman.

Seehy, G. (1976). Passages. New York: Dutton.

Shapson, S. M. (1973). Hypothesis testing and cognitive style in children. Unpublished doctoral dissertation, York University.

Soar, R. S., Medley, D. M., & Coker, H. (1983). Teacher evaluation: a critique of currently used methods. Phi Delta Kappan, December, 239-246.

Stark, J. S., & Lowther, M. (1984). Predictors of teachers' preferences concerning their evaluation. Educational Administration Quarterly, 20(14), 76-106.

Steinfeld, S. L. (1973). Level of differentiation and age as predictors of reinforcer effectiveness. (Doctoral dissertation, Hofstra University, 1973). Dissertation Abstracts International, 34, 2912B-2913B. (University Microfilms No. 73-25,324)

Thompson, B., & Melancon, J. (1987). Measurement characteristics of the Group Embedded Figures Test. Educational and Psychological Measurement, 47, 765-771.

Travers, R. M. (Ed.). (1973). Second handbook of research on teaching. Chicago: Rand-McNally.

Turner, R. L. (1979). The value of variety in teaching styles. Educational Leadership, January, 257-258.

Vernon, P. E. (1972). The distinctiveness of field independence." Journal of Personality, 40, 366-391.

Wise, A. E., Darling-Hammond, L., McLaughlin, M. W., & Bernstein, H. T. (1984). Teacher Evaluation, A Study of Effective Practices. Santa Monica, CA: Rand Corporation;

Witkin, H. (1976). Cognitive style in academic performance and in teacher-student relations. In S. Messick (Ed.), Individuality in learning: implications of cognitive style and creativity for human development. San Francisco: Jossey-Bass.

Witkin, H., Dyk, R.B., Faterson, H.F., Goodenough, D.R., & Karp, S.A. (1974). Psychological Differentiation. Potomac, MD.: Erlbaum, (Origianlly published Wiley, 1962.)

Witkin, H., & Goodenough, D.R. (1981). Cognitive styles: essence and origins. Madison, CT: International Universities Press, Inc.

Witkin, H. A., Goodenough, D. R., & Karp, S. A. (1967). Stability of cognitive style from childhood to young adulthood. Journal of Personality and Social Psychology, 7, 291-300.

Witkin, H., Lewis, H.B., Hertzman, M., Machover, K., Meissner, P.B., & Wapner, S. (1972). Personality through perception. Westport, CN: Greenwood Press. (Originally published Harper, 1954.)

Witkin, H., Moore, C.A., Goodenough, D.R., & Cox, P.W. (1977). Field-dependent and field-independent cognitive styles and their educational implications. Review of Educational Research, 47(1), 1-64.

Witkin, H., Oltman, P., Raskin, E., & Karp, S. (1971). A Manual for the Embedded Figures Tests. Palo Alto, CA: Consulting Psychlogists Press, Inc.

Wood, C. J., & Pohland, P. A. (1983). Teacher evaluation and the "hand of history". The Journal of Educational Administration, 21(12), 169-181.

APPENDIX A

April 13, 1990

TO: Building Principals
FROM: Lois Christensen
RE: Style Analysis of Building Staff

Dear ,

In a few days we will be ready for our second school-based meeting and the completion of our building mission statements. From all reports, the first meetings were extremely successful with teachers excited to be part of this unique collaborative event. As I am reflecting on the first meeting and looking forward to the next and future meetings, I realize that I may be able to offer you an opportunity to help reinforce team building and collaborative understanding among your staff.

I have done a fairly large amount of research on the subject of school reform including the school improvement team concept. In most instances, one of the first activities in the process of team building and collaboration is the identification of the diversity of styles present within the school staff. You will recall that the administrative team did a style analysis as part of their leadership training. It can be highly beneficial for each member of the school staff team to understand his/her own style. With such recognition comes an appreciation for the diversity of styles as they exist and interact in day-to-day school functions. For many individuals, it will be the first time they realize why they don't always get along with certain others--they literally don't perceive things the same way. A second and equally important benefit of realizing the inherent differences in style among adults, is a beginning appreciation for the qualities of different styles in children as well. Suddenly, teachers begin to identify style differences in children and realize why certain approaches work with some children and not with others.

My reason for relating all this information here is that I would like to offer you the opportunity of conducting a style analysis in your building. I am currently involved in a research project which utilizes a very simple but remarkably valid instrument to identify style characteristics. The project seeks to discover the relationship between teacher styles and their perception of written evaluations. I need to collect two kinds of data for the project--style analyses of teachers and their responses to a questionnaire based on a composite written evaluation specially designed in two different styles.

There are several style analysis instruments on the market. Most of them are fairly expensive, averaging between $10.00 and $20.00 per copy. The one I am using is less expensive, requires only twelve minutes to administer, and has excellent validity. I have about one hundred copies on hand and would secure more if necessary.

Specifically, my offer is this. I would be prepared to furnish copies of the instrument at my cost, administer the test, score it, provide a written style analysis for each teacher, and facilitate an understanding of the results. In return, I would need a completed questionnaire from each teacher taking the test. The entire time required would be no more than thirty minutes. It could easily be done in a faculty meeting. Part of my job description as Career Development Consultant for next year is to facilitate the school effectiveness team concept. In so doing I would be in a position to provide, at your discretion, follow-up information or activities to maximize the benefits of style analysis.

Originally, I had planned to collect data in a different manner. However, this time of year is crazy for everyone, and I do not want to impose work on anyone except myself. I would very much like to collect data in this district prior to the end of the school year. The combination of collecting data while providing a service to you seems like a workable and potentially beneficial alternative. Please think it over and call me if you would like to take advantage of this offer. There could be some long-range benefits for your building.

Sincerely,

Lois Christensen

Lois Christensen

APPENDIX B

May 26, 1990

(ADMINISTRATOR)
Dubuque Community School District
2300 Chaney Road
Dubuque, Iowa 52001

Dear :

I would like to thank you for your participation in my research project. Your cooperation in completing the Group Embedded Figures Test was critical to the success of the project. Enclosed is your copy of the Group Embedded Figures Test Participant Report and the accompanying Characteristics of Field Dependent and Field Independent Cognitive Styles information.

Consider the enclosed information a mere beginning in the understanding of cognitive processing styles and their educational implications. Continued analysis of your own behavior, especially in moderately stressful organizational or problem-solving situations, will yield additional evidence of your own individual cognitive processing style and its interrelationship with your behavior.

If, after reading the enclosed material, you have questions or concerns, please feel free to call me at 588-5136. I will be most happy to provide any additional interpretation necessary.

Again, thank you for being part of the study. Your participation is greatly appreciated.

Sincerely,

Lois Christensen

May 26, 1990

TO: (Administrator)
FROM: Lois Christensen
RE: Style Analysis

Dear ,

Enclosed you will find individual sealed envelopes for _____ School staff members who participated in the style analysis activity. As requested, I have also run a sheet of composite data for your building.

I would like to thank you and the staff for your cooperation in completing this activity. I think you will all find the results interesting. Consider the enclosed information a bare beginning in the understanding of cognitive processing styles and their educational implications. Please inform your staff that I would be happy to help them with further interpretation of their cognitive styles and how they are interrelated with behavior. As teachers begin to understand the dynamics of style differences, they recognize the potential use for such information not only in their own lives but in their interaction with others, in their classrooms, and in the school.

I sincerely hope the Lincoln staff participants feel comfortable with the material. If questions or concerns develop, please let me as soon as possible. I will be most happy to work with the staff in any way at any time.

Again, thank you for being a part of the study. Your participation is greatly appreciated.

APPENDIX C

CHARACTERISTICS OF FIELD DEPENDENT AND FIELD INDEPENDENT COGNITIVE STYLES

First, a few words about cognitive styles . . .

The characteristic approach a person brings with him or her to a wide range of situations is commonly called a person's "style". Because the approach encompasses both perceptual and intellectual activities, we speak of it as his or her "cognitive" style.

Cognitive style is a pervasive dimension of individual functioning, showing itself in the perceptual, intellectual, personality, and social domains, and connected in its formation with the development of the organism as a whole. Cognitive styles are concerned with the form rather than the content of cognitive activity. They refer to individual differences in how we perceive, think, solve problems, learn, relate to others, etc. The concept of style might best be considered as the "manner in which an individual moves toward a goal" rather than the concept of his or her "ability as competence in goal attainment."

Cognitive styles are stable over time. This does not imply that they are unchangeable. Certain style characteristics can be enhanced with training. However, we can predict with some accuracy that a person who has a particular style one day will have the same style the next day, month, and probably even years later.

Cognitive styles are bipolar with regard to value judgments. This characteristic is of particular importance in distinguishng cognitive styles from intelligence and other ability dimensions. To have more of an ability is better than to have less of it. With cognitive styles, on the other hand, each pole has adaptive value under specified circumstances, and so may be judged positively in relation to those circumstances. In other words, given any specific circumstance, individuals of either style may be capable of attaining a goal, but will exhibit different and individually positive methods of moving toward attaining that goal.

The more neutral character of cognitive styles, deriving from their value bipolarity, makes it less threatening and therefore easier to communicate information about an individual's cognitive style directly to him or her, than it is to convey some kinds of information about abilities, as, for example, informing the individual that he/she has a low IQ. This feature of cognitive styles is indeed an important advantage in serving student needs in the educational setting.

Individuals with varying cognitive styles show no difference in sheer learning ability or memory. Nor do teachers with different styles exhibit any difference in sheer teaching competence.

Women, on the average, tend to be more field dependent than men, but there is also some evidence that this may be at least partially attributable to the value attached to women's roles in the economy.

FIELD DEPENDENT CHARACTERISTICS

Field Dependent individuals tend to organize content structure in which many concepts are functionally related to each other into large, loosely organized groups which include many concepts. They tend to be more influenced by the prevailing field, to be less analytical, and to organize material by means of patterns, relationships, and networks.

In addition, they:

- have a strong interpersonal or social orientation.
- have a sensitive social radar system and are selectively tuned to social components of the environment.
- look more at the faces of others as the primary source of information about what others are feeling and thinking.
- attend more to verbal messages with social content, even when these messages occur in the periphery of attention.
- take greater account of external social referents in defining their attitudes and feelings.
- are more likely to utilize information given by a colleague in making their decisions.
- have greater reliance on others for self-definition.
- like to be with other people, even physically close to others.
- are likely to use non-verbal behaviors such as forward leaning.
- are perceived by others as warm, tactful, considerate, socially outgoing, and affectionate by others.
- less likely to express hostility toward other persons.
- provide more speaking time in relations with others.
- have a global conception of the body.
- utilize nonspecific defenses, such as repression.
- learn better with material with social content.
- have superior memory for social information.
- remember faces.
- have a tendency to be influenced by social material which is peripheral to the task.
- require externally defined goals and reinforcements. They may need more explicit instruction in problem-solving strategies or more exact definition of performance outcomes.
- are more affected by criticism. External reinforcement in the form of verbal criticism has a particularly potent effect.
- are more likely to go along with the field as is without using such mediational processes as analyzing and structuring.
- utilize concrete models to provide representations that they cannot generate for themselves.
- require a high degree of relevance.
- in concept learning, will tend not to analyze but to watch for constant relevant features of the concept to gradually emerge and the more variable irrelevant features of the examples to wash out.
- prefer vocations in which involvement with others is a central feature and in which the subject matter of the discipline features human content.
- prefer professions in welfare-helping-humanitarian domain, including social worker, minister, rehabilitation counselor,

probation officer.
- in teaching, prefer the social sciences, elementary-school teaching, business-education, and business administration.
- are also interested in "persuasive activities" domains such as selling, advertising, and administrative activities which involve dealing with people such as personnel director, credit manager, community recreation administrator, YMCA/YWCA administrator, city school superintendent, and chamber of commerce director.
- may be art students with informal style, psychiatric nurses, navigators, or radar intercept operators.

In the academic setting graduate students are likely to choose sociology, humanities, languages, social work, social services (religion), elementary school teaching, education, clinical psychology, writing, nursing.

As teachers, they:
- prefer discussion to lecture or discovery approaches.
- use questions primarily to check on student learning following instruction.
- make efforts to involve students in organizing the content and sequences of the teaching-learning process.
- are more student-centered in their approach.
- are often seen as teaching facts.
- may show strength in establishing a warm and personal learning environment.
- use more yes and no questions.

FIELD INDEPENDENT CHARACTERISTICS

Field Independent individuals tend to have a more analytical and impersonal orientation. They tend to perceive items as discrete from background, when the field is organized, and to impose structure on a field, and so perceive it as organized, when the field has relatively little inherent structure. This happens both from an immediately present stimulus configuration, as in perception, or from symbolic material, as in intellectual functioning. They organize or cluster concepts into small, tight groups with less overlap across groups.

In addition, they:
- are more likely to be interested in the abstract and theoretical.
- are somewhat unaware of their social stimulus value and tend to be individualistic.
- have greater visual, spatial ability which increases through the high school years.
- are likely to use distancing behaviors such as arm and leg crossing, leaning back, or remaining straight.
- are more likely to be aware of needs, feelings, attributes, which they experience as their own and as distinct from those of others.
- have more developed cognitive restructuring skills, but may also

be perceived by others as somewhat rude, inconsiderate, manipulating, or cold.
- have a greater degree of sense of separate identity.
- are more directive and less likely to involve in interaction with clients.
- see the body with definite limits or boundaries and the parts within as discrete yet interrelated and formed into a structured whole.
- use specialized defenses, such as intellectualization.
- tend to have self-defined goals and reinforcements.
- tend to learn better under conditions of intrinsic motivation.
- tend to behave as if governed by general principles which they have actively abstracted from their experiences regardless of whether these abstractions are correct or incorrect, useful or useless.
- will create subordinate and superordinate structure as a learning aid.
- readily engage in a hypothesis-testing (development of a strategy of search for the concept) approach to concept learning.
- may perform better when allowed to develop their own strategies.
- tend to prefer occupations in the mathematics and science domains--as, for example, mathematician, physicist, chemist, biologist, architect, engineer--and of such health professionals as physician, dentist, psychiatrist.
- in the teaching field they may prefer teaching mathematics, science, industrial arts, and vocational-agricultural subjects.
- also show interest in practical domains, such as production manager, carpenter, forest service, farmer, mechanic, surgical nurse, Air Force captain, airplane pilots, or artists with formal style.

As college students, they tend to choose sciences, mathematics, art, experimental psychology, engineering, architecture.

As teachers, they:
- tend to favor lecture or discovery approach to teaching because they reserve to the teacher much of the organization of the learning situation, either through facilitating and guiding student learning or through providing information.
- may show strength in organization and guidance of student learning.
- use questions as instructional tools more frequently than field dependent teachers.
- tend to use questions in introducing topics and following student answers.
- use more open-ended questions.
- encourage students to apply principles.
- more frequently emphasize teacher's standards.
- feel that informing the student when a response was incorrect and, in addition, telling him why it was incorrect, is effective in enhancing student learning.
- feel negative evaluation is an effective teaching technique.

We may wonder whether teachers adapt to their students' needs. We may wonder as well whether there are individual differences among teachers in the ease with which they are able to determine that a shift from the teaching approach fostered by their cognitive styles is required and then to make the shift. And we may ask as well whether, by sensitizing teachers to the implications of their own cognitive styles and the styles of their students for the teaching-learning process, we may increase the adaptability of teachers, so they become more diversified in the teaching approaches they use. There is considerable evidence that, with appropriate training methods, teaching approaches may also be diversified.

Teachers and students matched in style view each other positively, whereas teachers and students who are mismatched view each other negatively. There is a strong tendency for greater interpersonal attraction to exist in matched than in mismatched teacher-student combinations. Teachers tend to evaluate students higher who have a style similar to their own. In the junior high school years a sex match/mismatch between teacher and student seems to take precedence over a style match/mismatch.

SOURCE:

Witkin, Herman A. and Donald R. Goodenough. Cognitive Styles: Essence and Origins. 1981; International Universities Press, Inc., Madison, WI.

Witkin, H. A., C. A. Moore, D. R. Goodenough, P. W. Cox. Field Dependent and Field Independent Cognitive Styles and Their Educational Implications. Review of Educational Research, Winter, 1977, Vol. 47, No. 1, p. 1-64.

APPENDIX D

PARTICIPANT # _____

SEX: M _____ F _____

TEACHING LEVEL:

ELEM _____

JR HIGH _____

SR HIGH _____

K - 12 _____

DEPT _____

YEARS OF TEACHING EXPERIENCE:

1 - 5 YRS _____

6 - 10 YRS _____

11 - 15 YRS _____

16 - 20 YRS _____

OVER 20 YRS _____

HAVE YOU EVER TAKEN THE GROUP EMBEDDED FIGURES TEST BEFORE?

YES _____ NO _____

Your lessons are well planned and organized. Materials are ready, directions are clear, students know what to do, and work purposefully and efficiently to achieve classroom goals. Your classroom is arranged to facilitate learning, transitions are smooth from one activity to another, and an orderly system for housekeeping duties is utilized.

You communicate the lesson objective to your students in "learner terms" and there is a high degree of relevancy to the students' learning. You not only employ a variety of materials and resources, but utilize them in relation to learning levels, rates, and styles. You seem to be aware of the needs and strengths of each student and skillfully modify programs/objectives to meet individual needs. In addition to your insightful and creative motivation techniques, you have provided good visual reinforcement of verbal instruction and have utilized a wide variety of instructional strategies. Because of your strong presence in the room and the fact that your expectations are clearly communicated and understood, misbehavior is minimal and appears to be handled appropriately.

Presentation, directions, explanations, questioning, interaction with parents, students, colleagues and administration -- all indicate sound and effective communication skills. Students enjoy your sense of humor as well as your open and honest communication with them and have been encouraged to develop and share their own humor and to grow in communication skills with others. Students know that you are available and willing for individual assistance if they will take the initiative to seek you out.

You have also demonstrated a willingness to become involved in school-wide problems and to be a part of a group or committee which works towards constructive solutions to these problems.

Suggestions for continued effectiveness:

1. Continue to evaluate every aspect of administrative technique and instructional procedure. Such effort is responsible for current status and is integral to sustaining this level of performance.
2. Include in each instructional lesson a clear instructional component, to teach and/or re-teach the essential learning of the lesson before the practice and application activity is begun.
3. Continue to focus on means of helping your learners develop "positive" self concepts by utilizing student interest, providing immediate and specific knowledge of results, actively involving students in your lessons, maintaining a high level of support, and by providing a high level of success for all students.
4. Continue to make use of your high level of professional skills and competencies and to both seek and take advantage of opportunities to share them with colleagues.

Keep up your good work, high interest, etc. -- your efforts and assistance are appreciated.

1. The sentence structure seems to be

1	2	3	4
simple			complex

2. In order to follow and adequately understand the written narrative, I found myself rereading sections

1	2	3	4
not at all			a great deal

3. Length of sentences seems to be

1	2	3	4
too long			too short

4. This written report is

1	2	3	4
easy to follow and comprehend			difficult to follow and comprehend

5. The writing seems to be

1	2	3	4
lively and action oriented			boring and predictable

6. If I were the teacher being evaluated, I would be pleased to have this be my evaluation.

1	2	3	4
No, not at all			Yes, very much

7. Overall, I would rate this written evaluation

1	2	3	4
Good			Poor

8. The style of writing seems to be

1	2	3	4
objective (low degree of emotion)			exuberant (high degree of emotion)

9. If this evaluation had been written about me, I would feel

1	2	3	4
very comfortable about discussing it with the evaluator			somewhat hesitant about discussing it with the evaluator

10. If this were my evaluation, I would feel

1	2	3	4
very confident			somewhat unfulfilled

11. This evaluator seems to be

1	2	3	4
idealistic			realistic

12. I think I would enjoy working with this evaluator

1	2	3	4
not very much			very much

You have maintained a classroom atmosphere that is attractive and conducive to learning and which reflects your knowledge of student learning theory and characteristics. Students know what is expected in the classroom since goals are stated and evaluations are a part of class planning.

You demonstrate competence in instructional skills including a practical knowledge of appropriate, methods, materials, and activities to promote learning. Your presentations are based around district guidelines that are recommended, but you also facilitate curriculum goals by bringing into class a wide range of experience and personal resources that you have developed during your years of experience. Throughout lessons you remain focused on objectives while at the same time you interject outside information that adds interest.

The displays of student work which you create reflect student interest and pride. Ideas, directions, explanations and content material are presented clearly and in a manner which facilitates understanding and meaning. The level of concern is raised and lowered as necessary and other subtle techniques are used to establish a classroom where there is fair, consistent, and reasonable expectations of all students. The variety of approaches which you employ increases the probability of reaching students with a wide range of learning styles.

Students are highly motivated to achieve through your use of positive climate, student interest and the degree of success which you ably promote. Each student response is treated with dignity; therefore, you have a class full of students who are willing to take the risk of responding with enthusiasm even if not absolutely sure of being correct. You also achieve good group morale by assisting students to develop mutual respect, courtesy and concern for each other. The personal commitment and strength which you exhibit is shown daily as you complete the tasks necessary for successful maintenance of a well-managed class.

You show a willingness to self-evaluate and to look for new direction which will allow you to continue to grow in your knowledge of teaching. You are willing to share your ideas and to listen to comments and suggestions of others at both the building and district level.

Suggestions for continued effectiveness:

1. Continue to motivate and instruct your students as you have been doing, so that they are excelling to the point of not needing your instruction and remain "turned on" to your classroom and to learning in general.
2. Consider the possible uses of the computer as a supplemental instructional tool.
3. Continue to explore methods of checking the understanding of the entire class which can be done quickly and with ease.
4. Strive to provide students with an understanding of the purpose of lessons and to share your organizational plan. You have this so clearly in mind that it would also benefit students to see or hear the outline as well.

Continue to do the fine job you are doing. It is appreciated.

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1 ---------- 2 ---------- 3 ---------- 4

not very much — very much

APPROVAL SHEET

The dissertation submitted by Lois Riedel Christensen has been read and approved by the following committee:

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Educational Leadership and Policy Studies, Loyola

Dr. Philip Carlin
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The final copies have been examined by the director of the dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the dissertation is now given final approval by the Committee with reference to content and form.

The dissertation is therefore accepted in partial fulfillment of the requirements for the degree of Doctor of Education (Ed.D.).

April 15, 1991
Date

Max Bailey
Director's Signature