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Relationship of Teaching Styles and Learning Styles to Classroom Environment

Lori A. Walla

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RELATIONSHIP OF TEACHING STYLES AND LEARNING STYLES TO CLASSROOM ENVIRONMENT

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University of Nebraska, 1988

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Classroom environmental conditions establish the social climate or atmosphere of a setting. Stern in 1970 stated that student's perceptions of classroom climate or learning environment are useful in predicting achievement. The purpose of this study was to determine if there was an effect between teaching style and student learning style on classroom environment.

The population of this study consisted of secondary high schools within 150 miles of Lincoln, Nebraska, which offer vocational agriculture programs. Seven schools elected to participate. Thirty-four vocational teacher were included in this study. Students completed the Myers-Briggs Type Indicator and Classroom Environment Index. The Myers-Briggs Type Indicator is a questionnaire given to indicate the eight interacting personality preferences. The Classroom Environment Index is a questionnaire designed to measure the psychological environment of the classroom. Tests for significance was set at the .05 level using analysis of variance.

Based on the data presented in this study, the following results were found:

There is a relationship between student perceived classroom environment and instructor's teaching style by components of
personality type. This relationship was found in 23 environmental factors. Significance was also found on first order and second order scales.

There is a relationship between student perceived classroom environment and student components of personality type. Overall the student J-P personality component showed more relationship to classroom environment than did any of the other three preference areas. (E-I, S-N, T-F)

There is a relationship between student perceived classroom environment and student temperament (NF, NT, SP, SJ). Five individual environmental scales and both second order scales had a relationship with temperaments.

There is a relationship between student perceived classroom environment and student personality types. Significance appeared in three of the environment factor scales.

This study indicates, with data, what has been suspected by teacher educators, that is, teachers differ in the climates they develop in the classroom. This study reveals why that assumption is true. Differing personalities of teachers has an effect on classroom environment. This effect can be both positive and negative on student learning.
RELATIONSHIP OF TEACHING STYLES AND LEARNING STYLES TO CLASSROOM ENVIRONMENT

By

Lori A. Walla

A Thesis

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CHAPTER 1

INTRODUCTION

With our rapidly changing world, an increased public interest in learning or perceived lack of learning seems to be developing. More people are requesting that our classrooms become more efficient and effective.

The process of teaching and learning is one which is of interest and importance to many. Research has shown that people learn differently, and similarities can be found within these learning styles. When teachers become aware of the ways in which student and teacher personalities affect instruction, they may be able to better tailor instruction to meet the needs of individual students.

Classroom learning environment has been firmly established as a subject of many studies. Some classroom environment instruments can be used not only to assess actual environment but also to measure preferred environment. Fraser (1983), showed that both students and teachers preferred a more favorable classroom environment than they perceived as being actually present, and that teachers tended to perceive the actual classroom environment more favorably than did their students in the same classroom. Practical application involving teachers in using assessments of students perceptions of classroom environments can guide attempts at improving classroom settings.

STATEMENT OF THE PROBLEM

It has long been accepted that no instructional approach is best for teaching everything to everybody. An appropriate approach for one
type of student may not be equally effective for another. "Press conditions establish the social climate or atmosphere of a setting. Student's perceptions of this climate or learning environment are useful in predicting achievement" (Stern, 1970). The problem this study addresses is that there is insufficient information to explain why individuals have differing preferences in classroom climates. The purpose of this study was to determine if there was an effect of teaching style and student learning style on classroom environment.

OBJECTIVES

The specific objectives of this study were to:

1. Determine the relationship between student perceived classroom environment and instructor's teaching style by components of personality type.

2. Determine the relationship between student perceived classroom environment and components of personality type.

3. Determine the relationship between student perceived classroom environment and student temperaments. (NF, NT, SP, SJ)

4. Determine the relationship between student perceived classroom environment and student personality type.

SIGNIFICANCE OF THE PROBLEM

Much of the early research on classroom learning in the 1920's and mid 1930's attempted to analyze the process of teaching in terms of the conditions brought to it by the teacher as a professional worker. The teacher was presumed to not have any personal needs, purposes, and idiosyncrasies. The students or learners were even more taken for granted.

The teaching and learning styles of the classroom instructor and students have important implications for effective teaching. For many
years educational leaders have recognized the need for alternative instructional approaches to meet the wide variety of students in classrooms. Teachers can become frustrated knowing they are failing to meet the needs of a portion of students in their classroom. Not being able to accommodate the unique learning styles of students is one reason for this problem. (Friedman, 1984)

Classroom environmental studies show that environment places demands upon individuals for adaptation; that is, individual needs align with the immediate and surrounding environment. In education this means that when a teacher selects a method of presentation such as lecture, he/she is placing certain and limited adaptation demands upon the minds of the student. Students who can not adapt to the environment find themselves trapped and may withdraw, become indifferent, or attempt to change the environment thus learning maybe decreased.

LIMITATIONS

1. This study was limited to seven public secondary schools offering vocational education.

2. Only vocational educators within the above schools who were willing to participate were included.

3. Only students specifically identified by the vocational teachers participated by class in the study.

DEFINITION OF TERMS

Personality
The complex characteristics that distinguishes a particular individual, or individualizes and characterizes their relationship with others.
Press
The external environmental situational counterparts to the internalized personality needs.

Needs
Organizational tendencies which appear to give unity and direction to a person's behavior and may be identified by the characteristic spontaneous behavior manifested by individuals in their life transactions.

MBTI
Myers-Briggs Type Indicator. A questionnaire designed to indicate four interacting pairs of personality preferences. The four pairs of preferences are: Extraversion or Introversion, Sensing or Intuition, Thinking or Feeling, and Judging or Perception.

Extravert (E)
A person whose attentions and actions are drawn outward to objects and people of the environment.

Introvert (I)
A person whose interest is more toward an internal world rather than upon external objects or other persons.

Intuitive (N)
A person who sees beyond what is visible to the senses, and becomes good at developing new ideas, projects, and problem-solving.

Sensor (S)
A person who uses their senses to observe, is practical and sees what is occurring in the present moment.

Feeler (F)
A person who takes into account anything that matters or is important to himself or to other people, and makes decisions on the basis of personal values.
Thinker (T)
A person who predicts the logical results of any particular action they may take, then makes decisions impersonally on the basis of cause and effect.

Judger (J)
A person who lives in a planned, decided, orderly way, wanting to regulate life and control it.

Perceiver (P)
A person who adapts well to changing situations, and who tends to be curious and welcomes new light on a thing, situation, or person.

Temperament
Four combinations of personality preferences; NF, NT, SP or SJ. Temperament is determined by a consistency in one's action which theoretically can be observed at a very early age, long before events have had time to imprint the person.

NF
This temperament group is less interested in facts than in possibilities, and judge with personal warmth.

NT
This temperament group is interested in possibilities. They are competent, consistent, critical, and firm minded.

SP
This temperament group is known as the "super realists", prefering action more than any other group. They are unmotivated by long-term goals and are driven by a need to be free.

SJ
This temperament group is known for being traditional, responsible, dependable, and a giver not a "freeloader".

Classroom Environment Index (CEI)
A questionnaire designed to measure the psychological environment of the classroom. Thirty environmental scales, six first order scales,
and two second order scales were used to measure classroom environment.

**Abasement (Aba)**
Reflects an environment which tends to degrade or humiliate the individual, discourages self confidence, and sanctions boat-rocking.

**Assurance (Ass)**
Environment which instills confidence in the individual and encourages individual pride.

**Achievement (Ach)**
Encourages individual initiative and creativity. Promotes a can-do mentality and striving to surmount obstacles.

**Adaptability (Ada)**
Reflects an environment where sanctions for making mistakes are high, where people learn to deal with the criticisms of others because their actions are constantly subjected to evaluation and review.

**Defensiveness (Dfs)**
An environment where the individual is more certain to get away with a mistake or bad decision. Reflects a more tolerant attitude toward human error.

**Affiliation (Aff)**
A friendly, groupish environment which discourages social detachment or independence.

**Aggression (Agg)**
An environment which tolerates arrogance and gaminess from individuals, does not discourage expression of disinterest or hostility. Does not encourage regard for the feelings of others.

**Blame Avoidance (Bla)**
An environment which suppresses individual arrogance and hostility.

**Change (Cha)**
An environment which encourages innovation and does not suppress
new ideas. Variety and change are both accepted and expected as a given aspect of the surroundings.

**Sameness (Sam)**
An environment which is geared toward routine and convention. Little change takes place over the years.

**Conjunctivity (Cnj)**
An organized, efficient, purposeful environment which reflects a high degree of thoughtful planning. Economy and clarity mark the organizational climate.

**Disjunctivity (Dsj)**
An environment which keeps people off balance because of its disorganized and rambling nature. Those in key positions do not convey their expectation very well.

**Counteraction (Ctr)**
A climate which encourages individuals to take up challenges for their own part and to be critical of other's decisions which affect them. Encourages individuals not to accept defeat.

**Deference (Dfr)**
An environment where a strong consciousness of rank exists. Behavior which does not reflect acknowledgement of rank is discouraged.

**Restiveness (Rst)**
An environment where formal rank for its own sake is not strongly acknowledged. Superiors enjoy rebelliousness and gaminess on the part of their subordinates.

**Dominance (Dom)**
A bossy type environment where jockeying for supremacy is an everyday affair. Rivalries and alliances exist between those with the upper hand. Individuals seek to domineer others through assertiveness or manipulation.
Tolerance (Tol)
An environment characterized by mutual respect and tolerance. Egalitarianism and non-intervention are highly valued.

Ego Achievement (E/A)
This environment encourages people to feel as though their efforts are important to the world; to feel as though they are part of something big; fosters a sense of drama and destiny.

Emotionality (Emo)
The environment is marked by intense, open emotional expression.

Placidity (Plc)
An environment marked by restraint, dignity, and control. Calm, collected, mild mannered.

Energy (Eny)
Reflects an environment characterized by beehive-like activity; one which requires individual stamina to participate in sustained vigorous effort.

Passivity (Pas)
A sluggish, slow, passive climate, lacking vigor or enthusiasm.

Exhibitionism (Exh)
An environment where people are inclined to draw attention to themselves. People who are in the limelight or receive publicity are highly regarded. People seek to become well-known.

Inferiority Avoidance (Inf)
An environment which is marked by an air of personal privacy. Individuals avoid attracting attention of large numbers of people, withdraw from situations involving extreme extraversion, and keep public display to a minimum.

Fantasied Achievement (F/A)
This environment encourages people to seek fame and renown; to set high expectations with regard to personal status; to imagine themselves as important or extraordinary individuals.
Harm Avoidance (Har)
A sheltered environment, particularly with regard to physical danger. Prudence and caution are admired; cavalier attitudes are thought to be foolish and adolescent.

Risktaking (Rsk)
Reflects a devil-may-care environment. Excessive caution is seen as lifeless and boring. Individuals are venturesome and thrill-seeking. Strong physical stimulation is constantly being sought, without regard to physical danger.

Humanities, Social Science (Hum)
An environment which encourages interest in manipulating or examining social objects or artifacts symbolically through reflection, discussion, criticism, or empirical analysis.

Impulsiveness (Imp)
Environment which tolerates impulsiveness. Many events happen spontaneously. People follow their intuition and tend to make quick, sometimes rash decisions.

Deliberation (Del)
Environment which discourages snap judgments or quick action. Restraint and reflectiveness are highly regarded.

Narcissism (Nar)
An environment in which much attention is paid to personal charm, beauty, vanity, and appearance. Reflects a concern over the impression one makes on others, a seeking to be attractive, both in personality and appearance.

Nuturance (Nur)
A warm, friendly, nurturant environment in which newcomers are welcomed and helped; assistance is readily provided to those who need it, and no one feels left out. A mutually supportive environment.
Objectivity (Obj)
    An environment marked by confidence in one's own, and in others' ability to assess situations objectively.

Projectivity (Pro)
    An environment characterized by distrust, suspicion, subjectivity, and uneasiness.

Order (Ord)
    Compulsive organization in the immediate physical environment manifests itself in a preoccupation with neatness, orderliness, arrangement, and meticulous attention to detail.

Disorder (Dso)
    An environment characterized by disorder, confusion, neglect, messiness, or disarray. Pattern or arrangement is lacking and little attention is paid to detail.

Play (Ply)
    A climate characterized by sustained pursuit of enjoyment, entertainment, and amusement, and a nonchalant attitude toward work.

Work (Wrk)
    A down-to-business environment which is persistently purposeful, serious, and task oriented.

Practicalness (Pra)
    Environment which emphasizes efforts in concrete, pragmatic, conventional, visible useful, or tangible productive activities to the relative exclusion of more abstract, speculative, creative, or intellectual undertakings.

Impracticalness (Imp)
    Environment which manifests strong interest in abstract, speculative, theoretical, creative, or intellectual undertakings and indifference toward practical affairs.
Reflectiveness (Ref)
A climate which encourages contemplation, introspection, or preoccupation with private psychological, spiritual, aesthetic, or metaphysical experience. Encourages the seeking of spiritual self-satisfaction.

Science (Sci)
An environment which encourages analysis and manipulation of physical objects through reflection, discussion, criticism, and empirical analysis.

Sensuality (Sen)
A casual, comfortable atmosphere which emphasizes self-gratification through sensual, exotic or aesthetic experience.

Puritanism (Pur)
An atmosphere that is marked by austerity, temperance, plainness, self-control, frugality, and self-denial.

Sexuality (Sex)
An atmosphere filled with heterosexual interests and activities.

Prudishness (Pru)
An atmosphere which is restrained or inhibited with regard to sex.

Supplication (Sup)
An environment where people depend on one another for emotional support, assistance and protection.

Autonomy (Aut)
An environment which encourages autonomy and self-reliance. Individuals tend not to cater to one another.

Understanding (Und)
An environment oriented toward detached intellectualization, in-depth problem solving analysis, theorizing, or abstraction as an end in itself.

First Order Scores
Analysis of the 30 scales produces six first order environmental factors.
Humanistic Intellectual Climate
This factor includes aspects of achievement together with elements of contemplation and social concern. A list of press scales from which the score was originally derived follows: fantasied achievement; change; reflectiveness; ego achievement; humanities social science; understanding.

Group Intellectual Life
This factor includes aspects of intellectuality, reflectiveness, objective thinking, and practicality. It lies closer to the development axis than does humanistic intellectual climate. A list of press scales from which the score was originally derived follows: harm avoidance; supplication; nuturance; objectivity; understanding; practicalness; reflectiveness.

Achievement Standards
This is a measure of striving for success, accompanied by high levels of activity and effort. Activity is well coordinated. A degree of intense emotional expression is in evidence. A list of press scales from which the score was originally derived follows: achievement; energy; adaptability; conjunctivity; emotionality.

Personal Dignity
This factor indicates individual responsibility and personal autonomy. It is characterized by tolerance, self-confidence and friendliness. A list of press scales from which the score was originally derived follows: aggression; dominance; abasement; deference; counteraction; affiliation.

Orderliness
Classrooms scoring high on this factor would be characterized by caution, seriousness, and austerity. This factor lies close to the
control axis. A list of press scales from which the score was originally derived follows: impulsiveness; play; order; exhibitionism; sensuality.

Science
A high score on this factor involves an interest in the natural sciences, together with aspects associated with sexuality and egotism. A list of press scales from which the score was originally derived follows: science; sexuality; narcissism.

Second Order Scores
The six first order environmental dimensions are combined to produce second order scores.

Development Press (Area I)
The first four factors consist of those characteristics of the environment that are related to intellectual and interpersonal activities. Schools with high scores in Area I emphasize intellectual achievement, personal development, warmth and respect as opposed to a more institutionalized adjustment oriented approach to high school education. The factors that contribute to the Area I score are as follows: humanistic intellectual climate; group intellectual life; achievement standards; personal dignity.

Control Press (Area II)
The control factors describe the degree to which there is emphasis upon orderliness, bureaucratic administrative procedures, and cautiousness. Self-aggrandizement is deemphasized. The high control press is associated with the absence of a press for science. The factors that contribute to an Area II score are as follows: orderliness; lack of science.
CHAPTER II

REVIEW OF LITERATURE

The review of literature contains information that will help the reader understand how teaching styles and learning styles relate to classroom environment.

Students spend vast amounts of time at school. Rutler (1979) suggests that by completion of secondary school this figure can reach up to 15,000 hours. Students, therefore, certainly have a large stake in what happens to them at school.

Based on the findings of Stavros (1985) in order to get a good picture of school climate, data from both students and staff must be collected. Although staff and students have convergent opinion in many areas, their perspectives are sufficiently different so that a well rounded assessment of the school requires data from both groups.

Fraser and Walberg (1981) outlined some advantages which student perceptual measures had over observational techniques. First, paper and pencil perceptual measures are more economical than classroom observation techniques which involve the expense of trained outside observers. Second, perceptual measures are based on students experiences over many lessons, while observational data usually are restricted to a small number of lessons. Third, perceptual measures involve the pooled judgments of all students in a class, where as observation techniques typically involve only single observers. Fourth, students perceptions, because they are the determinants of student behavior more so than the real situation, can be more important than observed behaviors. Fifth, perceptual measures of classroom
environment typically have been found to account for considerable more variance in student learning outcomes than have directly observed variables.

In a study done by Nielson (1978) a relationship was found between teacher attitude and the learning environment of his/her class.

A theory of person-environment congruence in which complimentary combinations of personal needs and environmental press can enhance student outcome. Needs-Press theory has been popularized by Pace and Stern (1970).

Needs are defined as "organizational tendencies which appear to give unity and direction to a person's behavior and may be identified by the characteristic spontaneous behavior manifested by individuals in their life transactions". Needs therefore, can be inferred from the daily routine activities and feelings that are characteristic of individuals (Stern, 1970).

Stern goes on to say that press are the external environmental situational counterparts to the internalized personality needs. Press are inferred from the social physical characteristics of the environmental setting.

In the 1960's the United States Office of Education sponsored a series of research projects to determine which set of instruction would result in the most effective learning by students. The results of the study indicated that the teacher rather than the materials or method made the difference (Bond and Dykstra, 1967).

The closer the learning situation resembles the students learning style the more the students will achieve. Consider the theory that
dissonance is an anxious state that an individual avoids (Zajnoc, 1960). Congruency between learning style and teaching style may form a consonant environment which enhances learning. Also possible is that extra effort by the learner is exerted if he/she is reinforced by the teaching style that he/she prefers. A third possibility is that students who feel that they are learning, attribute their feeling to the teaching style being received (Brown 1965).

The results revealed by Witt (1984) stated that congruency is not a better predictor of satisfaction than environment or personality. Environmental perceptions had the strongest relationship to each component of satisfaction, with personality and congruency significant but weaker in their relationships to satisfaction.

Fischer (1979) stated that, different instructional problems arise and different outcomes are achieved depending on the combinations found in various classrooms. For example, the incremental learners who functions most effectively in a explicitly structured classroom will function quite differently with a teacher who has a subject centered, task-oriented style than will a classmate whose style may be intuitive and favoring a more open structure.

Teachers are more likely to develop teaching strategies which are congruent with their own learning styles rather than those of their students if they are unaware of the learning/teaching styles literature (Barbe & Milone, 1980). This fact implies that teachers need to guard against over-teaching by their own preferred learning styles. To teach with one's own learning style is a natural tendency because teachers subconsciously operate on the assumption that the way they learn is most
effective way for someone else to learn. Therefore, teachers have an obligation to broaden their teaching styles to support opportunities for students to broaden their learning styles (Friedman & Alley, 1984).

One of the instruments frequently used in research on learning styles is the Learning Style Inventory (LSI) (Dunn, Dunn, and Price, 1979). In various studies, (Pizzo, 1981; Shea, 1983; and Dunn, 1984) students tested with the LSI who reported either strong negative or positive preferences for selected elements were placed into academic situations where they were taught and/or tested in ways that matched and mismatched their self-reported preferences. In every case, students who were matched with methods, resources, or environments that complimented their reported strong preferences achieved statistically higher; they achieved statistically less well when they were mismatched with their preferences. Because experiments - both in laboratories and in classroom studies - have yielded consistently significant scores, it is only reasonable to conclude that students achieve better when taught through their strength (Pizzo, 1981; Shea, 1983; and Dunn, 1984).

The nature of classroom environment also has a potent influence on how well students achieve a range of desired educational outcomes (Fraser, 1985). Consequently educators need not feel that they must choose between striving to achieve cognitive classroom environment and attempting to enhance student achievement of cognitive and affective aims. Rather, a constructive educational climate may be viewed as both means.
CHAPTER III
THE DESIGN OF THE STUDY

The primary objective of this study was to examine the relationship between teaching styles/learning styles and student perceived classroom environment. This chapter describes the design, hypothesis, population, data collection information, and the analysis of data.

HYPOTHESES

The following null hypotheses was used to test the relationship of teaching and learning styles as measured by perceived classroom environment.

1. There is no relationship between student perceived classroom environment and the instructor's teaching style by components of personality type.

2. There is no relationship between student perceived classroom environment and student components of personality type.

3. There is no relationship between student perceived classroom environment and student temperaments. (NF, NT, SP, SJ)

4. There is no relationship between student perceived classroom environment and student personality types.

POPULATION

The population for this study consisted of the secondary schools within 150 miles of Lincoln, Nebraska, which offer vocational agriculture programs.

SELECTION OF SAMPLE

The sample used for this study was obtained by using a modified random sample from schools in the above population area. School
administrators were given the opportunity to accept or reject an invitation to participate.

Seven schools elected to participate. They are:

1. Crete 5. Milford
2. Fairbury 6. Syracuse
3. Battle Creek 7. Tekahma-Herman
4. Lyons-Decatur

Vocational teachers in the above schools were asked to select at least one vocational class to be included in the study. Six hundred and thirty-eight vocational students participated. Thirty-four vocational teachers were included in the research representing vocational agriculture (n=8), home economics (n=6), industrial arts (n=10), and business (n=10).

DESCRIPTION OF DATA COLLECTION INSTRUMENT

Both the style by which the teacher prefers to teach and the style by which the student prefers to learn can be identified by utilizing the Myers-Briggs Type Indicator (Myers, 1962). In order to determine the relationship between teaching styles and learning styles the Classroom Environment Index was used. A description of the two instruments selected to collect data follows:

1. Myers-Briggs Type Indicator (MBTI). This instrument was used to determine personality type of instructors and students, and will help identify teaching and learning styles.

The MBTI was developed by Isabel Myers and Katherine C. Briggs over a period of twenty years. It is a questionnaire specifically designed to make it possible to test and put to practical use that part of the personality theories of C.G. Jung concerning
psychological types.

The MBTI identifies individuals among four dichotomous scales. The first scale measures the attitude of extraversion vs. introversion (E-I), the functions of sensing vs. intuition (S-N), thinking vs. feeling (T-F) and judgment vs. perception (J-P). Each of the four independent scales yields both simple dichotomous preferences and measures of the strength of each preference. An individual's personality type consists of the combination of one preference from each of the four dichotomous scales. There are sixteen possible combination of preferences, each resulting in a personality type. The personality type structure is defined by four letters.

The critical question is how often on retest do individuals come out the same type - that is - fall on the same side on each of the four dichotomous preferences, as in the original testing.

Carskadon (1979) reported seven-week test reliabilities on Form G for thirty-two male psychology students .79 for EI, .84 for SN, .48 for TF, and .63 for JP. Comparable reliabilities for twenty-four females in the same class were .86 for EI, .87 for SN, .87 for TF, and .80 for JP.

In summary when changes of type occur on retest, most changes affect only one preference, and those preferences with low original endorsement are the most likely to change.

2. Classroom Environment Index (CEI) was used to help determine students attitude toward classroom instructor, teaching style, and classroom environment.

The CEI is currently available only in the long form (CEI-971).
The CEI is designed to measure the psychological environment of the classroom. It has been shown to differentiate between classrooms, subjects, grades, and educational levels. The CEI is normally used for grades 5 through 12, but may also be applicable to certain college classes.

The CEI can be used to examine relationships among such variables as classroom environment, teacher personality, teaching style, creativity, and other facets of the teaching-learning process. The CEI produces 30 scale scores;

1. Abasement - Assurance
2. Achievement
3. Adaptability - Defensiveness
4. Affiliation
5. Aggression - Blame Avoidance
6. Change - Sameness
7. Conjunctivity - Disjunctivity
8. Counteraction
9. Deference - Restiveness
10. Dominance - Tolerance
11. Ego Achievement
12. Emotionality - Placidity
13. Energy - Passivity
14. Exhibitionism - Inferiority Avoidance
15. Fantasied Achievement
16. Harm Avoidance - Risktaking
17. Humanities, Social Sciences
18. Impulsiveness - Deliberation
19. Narcissism
20. Nurturance
21. Objectivity - Projectivity
22. Order - Disorder
23. Play - Work
24. Practicalness - Impracticalness
25. Reflectiveness
26. Science
27. Sensuality - Puritanism
28. Sexuality - Prudishness
29. Supplication - Autonomy
30. Understanding
The above scores are then combined to produce six first order scores and two second order scores called area scores.

First Order Scores:
1. Humanistic intellectual Climate
2. Group Intellectual Life
3. Achievement Standards
4. Personal Dignity
5. Orderliness
6. Science

Second Order Scores
1. Development Press
2. Control Press

Justice, Stern, and Walker (1984) reported Kuder-Richardson Formula 20 reliabilities for each scale, overall subjects in the final norm group. Ninety percent of the scale norm reliabilities were at or above .51 with a mean of .64. Reliabilities for the six first order factors ranged from .68 to .84 (x=.79), whereas reliabilities for the second order factors were .83 developmental press and .784 for control press. Thus the CEI provides a reliable measure of classroom environment across a broad range of ages and levels.

PROCEDURE FOR COLLECTION OF DATA

The procedure for collection of data was as follows:

1. Vocational teachers participating in the study were given the MBTI. Instructions were given for completing the computerized answer sheets.

2. Vocational teachers at the seven participating schools administered the MBTI and the CEI to their selected classes. The teachers were sent instructions on procedure to follow in marking the computerized answer sheets. Time was allowed for all students to complete the two surveys. The MBTI was administered in one class period and the CEI in two class periods.
ANALYSIS OF THE DATA

The MBTI was computer scored to determine each teacher's teaching style and each student's learning style. The CEI was computer scored to determine the 30 item scores, six first order scores, and two second order scores for each student.

Each of the 30 item scores, six first order scores, and two second order scores were identified by student and teacher personalities to test hypotheses. Test for significance was set at the .05 level using analysis of variance. Fischer's Protected Least Significant Difference (LSD) was used for mean comparisons.
CHAPTER IV

FINDINGS AND DISCUSSION

INTRODUCTION

This study was conducted to examine the relationship between teaching styles/learning styles and classroom environment as perceived by students.

The population of this study consisted of secondary high schools within 150 miles of Lincoln, Nebraska, which offer vocational agriculture programs. The sample used for this study was obtained by using a modified random sample from the population area. School administrators were given the opportunity to accept or reject an invitation to participate. Seven schools elected to participate. Thirty-four vocational teachers representing vocational agriculture, home economics, industrial arts, and business, were asked to select at least one vocational class to be included in this study. Six hundred and thirty-eight vocational students participated in this study. The students were allowed three class periods to complete the Myers Briggs Type Indicator and Classroom Environment Index. Data was collected and read from computer answer sheets. Tests for significance were set at the .05 level using analysis of variance. Fischer's Protected LSD was used for mean comparisons.

The findings and discussion presented in this chapter will be reported by each hypothesis. These sections will be followed by a summary of major findings.

Hypothesis 1

There is no relationship between student perceived classroom
environment and the instructor's teaching style by components of personality type.

Hypothesis one was rejected since significant differences were found to exist in 23 of the 30 classroom environment scale scores (Table 1). Each CEI scale is reported in order of most relationship to the MBTI type components.

Supplication-Autonomy scale was significantly different in all four Myers-Briggs preference areas, Extraverts(E)-Introverts(I); Sensing(S)-Intuitive(N); Thinking(T)-Feeling(F); Judging(J)-Perceiving(P). Introverts(I), sensing(S), feeling(F), and perceiving(P) type teachers created an environment which encourages self reliance (Autonomy). Extraverts(E), intuitives(N), thinkers(T), and judging(J) teachers created an environment where students in the classroom depend on one another for emotional support, assistance, and protection (Supplication).

Deference-Restiveness scale was significant in the E-I, S-N, and T-F preferences. Deference is an environment where a strong consciousness of rank exists. This was created by teachers who were extraverts(E), sensing(S), and feeling(F). Restiveness, an environment where informal rank is not strongly acknowledged was created by introverts(I), intuitives(N), or thinking(T) teachers.

The scale Change-Sameness was significant in E-I, T-F, and J-P preferences. I, T, and J teachers created an environment where change was minimal, whereas E, F, and P teachers created an environment where change was evident as perceived by students.

Conjunctivity-Disjunctivity, identified student perception of
Table 1

Student Perceived Classroom Environment And The Instructor's Teaching Style By Components Of Personality Type*

<table>
<thead>
<tr>
<th>Classroom Environment Scales</th>
<th>E (n=21)</th>
<th>I (n=13)</th>
<th>S (n=28)</th>
<th>N (n=6)</th>
<th>T (n=21)</th>
<th>F (n=13)</th>
<th>J (n=30)</th>
<th>P (n=4)</th>
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<td>4.9</td>
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<td>5.5</td>
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<td>Dominance-Tolerance</td>
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<td></td>
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<td>5.8</td>
</tr>
</tbody>
</table>

Students: n=433 n=205 n=551 n=85 n=393 n=243 n=525 n=111

Note: *The mean scores are student perceived scores.
Significance at the .05 level. Follow-up using Fisher's protected least significant difference test.
Higher scores, on a 1-10 scale, refer to the scale to the left, lower scores refer to the scale on the right for word pairs. Scores for single word scales refer to that word.
classroom organization. This scale was significant in the areas of S-N, T-F, and J-P. S, F, and P teachers tended to build an environment which was more conjunctive (organized), whereas, N, T, and J teachers built an environment which was perceived as being more disjunctive, or disorganized by students.

Counteraction is a climatic factor which encourages students to take up challenges on their own part and be critical of other's decisions and not accept defeat. Counteraction was observed as being significant in the E-I, T-F, and J-P preference areas. E, F, and P teacher's students scored higher than I, T, and J teachers, on the counteraction scale.

The E-I, T-F, and J-P preference areas had a high relationship to the nurturance environment scale. E, F, and P teachers developed an environment which was more warm and friendly, whereas I, T, J teachers tended to have a climate that was perceived to be less warm and friendly.

Adaptability-Defensiveness, significant differences were found with the E-I, S-N type components. E and N teachers had an environment that was higher in adaptability (an environment where sanctions for making mistakes are high), while I and S teacher scores were higher in defensiveness, an environment where the individual was more certain to get away with a mistake or bad decision.

E-I, J-P teacher preference areas were significantly related to the scales of exhibitionism-inferiority avoidance and objectivity-projectivity. E and J teachers created an environment where students were more inclined to draw attention to themselves (exhibitionism), and
a climate characterized by distrust, suspicion, subjectivity and uneasiness (projectivity). I and P teachers were perceived to have classroom environments marked by an air of personal privacy (inferiority avoidance) and confidence in one's own and other's ability to assess situations objectively (objectivity).

S-N and J-P teachers preference areas were significantly different on the play-work scale. Students perceived the scale of play in which enjoyment and amusement was present, at a higher level with N and P teachers. Students with S and J teacher's classrooms were perceived to be more of a work environment which is persistently purposeful, serious and task oriented.

T-F and J-P teacher preference areas were significantly different on the reflectiveness scale. Teachers with F or P personality type components created an environment which students perceived as being more encouraging in seeking spiritual self satisfaction than T and J teachers.

The scales of sexuality-prudishness, energy-passitivity, and ego achievement were significantly different with the E-I teacher preference. E teachers were being perceived by students as building an environment that was filled with more heterosexual interests and activities (sexuality); reflecting an environment continuous in activity (energy); an environment which encourages people to feel as though they are part of something big (ego achievement). While I's classrooms were perceived as more inhibited with regard to sex (prudishness); a passive environment (passivity); and less encouraging of a feeling of a part of something big (ego achievement).
The S-N components were different in abasement-assurance, aggression-blame avoidance, dominance-tolerance, impulsiveness-deliberation, and sensuality-puritanism scales. N teachers created environments perceived by students as being more: filled with individual pride (assurance); tolerant of arrogance and gaminess (aggression); respectful and tolerant (tolerant); bossy or slow in decision making (deliberation); casual and comfortable (sensuality). S teacher classrooms scored higher in: abasement, an environment which degrades and humiliates the individual; blame avoidance, an environment which suppresses individual arrogance and hostility; dominance, a bossy type environment where jockeying for supremacy is an everyday affair; impulsiveness, an environment with toleration for spontaneous happenings; puritanism, an atmosphere that is marked by austerity, temperance, plainness, self-control, frugality, and self denial.

T-F teacher preferences were also found significantly different in the environment scales of achievement, narcissism, and science. Teachers with F as a personality preference had environments rated higher by students in narcissism, an environment in which much attention was paid to personal charm, beauty, vanity, and appearance (narcissism), while T teachers created a climate that was more encouraging to individuals initiative and creativity (achievement). T classrooms manifested strong interests in abstract, theoretical, creative, or intellectual undertakings (science).

The J-P teacher was also different in the affiliation scale. P teachers had a environment perceived as being more friendly and groupish than Js.
Analysis of the 30 scales extracted six first order environmental factors. When First order scores were compared, the E-I, S-N, T-F teacher components were significantly different in personal dignity (Table 2). Personal dignity score was derived from a combination of aggression, dominance, abasement, deference, counteraction and affiliation scales. E, S, and F teachers were perceived as creating classrooms with climates that were more friendly, tolerant and building of self confidence than I, N, and T teachers.

Group intellectual life, a first order score, was significantly different in the T-F, J-P teacher components. Group intellectual Life is a combination of harm avoidance, supplication, nurturance, objectivity, understanding, practicalness, and reflectiveness environmental factors. F and P teachers personality preferences created a more intellectual, reflective, objective thinking and practical classroom environment, while T and J teachers were perceived lower on these scales.

Humanistic intellectual climate was developed from the following environmental scores: fantasied achievement, change, reflectiveness, ego achievement, humanities social science, and understanding. The personality preference of J-P had a significant relationship to the scale of humanistic intellectual climate, this factor includes the aspects of achievement together with elements of contemplation and social concern. P teachers created a classroom higher in humanistic intellectual climate than J teachers.

Science (first order score), a high score on this factor involves an interest in the natural sciences, together with aspects associated
Table 2

Student Perceived Classroom Environment First Order And Second Order Scores
And The Instructor's Teaching Style By Components Of Personality Type *

<table>
<thead>
<tr>
<th>Classroom Environment Scales</th>
<th>Teacher's Personality Component</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>E</td>
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<tr>
<td>------------------------------</td>
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</tr>
<tr>
<td>First Order</td>
<td></td>
</tr>
<tr>
<td>Group Intellectual Life</td>
<td>36.1</td>
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<td>Humanistic Intellectual Climate</td>
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<tr>
<td>Personal Dignity</td>
<td>33.2</td>
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<tr>
<td>Science</td>
<td>11.9</td>
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<tr>
<td>Second Order</td>
<td></td>
</tr>
<tr>
<td>Development Press</td>
<td>126.9</td>
</tr>
</tbody>
</table>

Students

n=433 n=203 n=551 n=85 n=393 n=243 n=525 n=111

Note: *The mean scores are student perceived scores.
Significance at the .05 level. Follow-up using Fisher's protected least significant difference test.
Higher scores, refer to the scale to the left, lower scores refer to the scale on the right for word pairs. Scores for single word scales refer to that word.
with sexuality and egotism, showed significance in the F-T teacher personality preferences. A list of press scales from which the score was derived follows: science, sexuality, and narcissism. F teachers scored higher in the science (first order score), than did T teachers.

Area I, development press, is a sum of those first order environmental factors that were related to intellectual and interpersonal activities. Teachers with high scores in Area I were perceived as emphasizing intellectual achievement, personal development, warmth and respect as opposed to a more institutionalized adjustment oriented approach to high school education. Factors contributing to Area I were: humanistic intellectual climate, group intellectual life, achievement standards, and personal dignity. Area I scores were significantly different in the T-F and J-P personality preferences. F and P teachers had higher development press scores than did T and J instructors.

Hypothesis 2

There is no relationship between student perceived classroom environment and student components of personality type.

In seventeen of the thirty classroom environment scale scores, derived from student perception of vocational classes, there were significant differences. Therefore, hypothesis 2 is rejected.

Change-sameness proved to be different in the E-I, and J-P components (Table 3). Change, an environment which encourages innovation and does not suppress new ideas, saw relatively high correlation with students who were extroverted(E) and judging(J). Students who had a preference for introversion(I), and perceiving(P)
Table 3

Student Perceived Classroom Environment And Student Components Of Personality Types

<table>
<thead>
<tr>
<th>Student's Personality Components</th>
<th>E</th>
<th>I</th>
<th>S</th>
<th>N</th>
<th>T</th>
<th>F</th>
<th>J</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
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<td>3.9</td>
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<td>Adaptability-Defensiveness</td>
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<td>7.1</td>
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<td>Second Order</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Control Press</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>42.7</td>
<td>43.6</td>
<td>44.0</td>
<td>43.0</td>
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<tr>
<td>Development Press</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>130.0</td>
<td>127.0</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>n=407</td>
<td>n=229</td>
<td>n=411</td>
<td>n=211</td>
<td>n=347</td>
<td>n=275</td>
<td>n=200</td>
<td>n=422</td>
</tr>
</tbody>
</table>

Note: The mean scores are student perceived scores.
Significance at the .05 level. Follow-up using Fisher's protected least significant difference test.
Higher scores, refer to the scale to the left, lower scores refer to the scale on the right for word pairs. Scores for single word scales refer to that word.
rated higher the climate score in Sameness, an environment which is geared toward routine and convention.

Student components J-P were significantly different in the abasement-assurance scale. A confidence instilling environment was perceived at a higher level by percieving(P) students. Judging (J) students on this scale rated the environment as more degrading.

Achievement as a classroom environmental scale was significantly different with S-N student preferences. Ss perceived the environment to be one with more individual initiative and creativity than Ns. Ns did not score the classrooms as being as creative.

The student personality component J-P had a significant difference in the adaptability-defensiveness scale. J students saw the classrooms as being more adaptable where making mistakes were acceptable. P students rated the same classroom as not adaptable but restrictive.

E-I student component was significantly related to the affiliation scale. Extraverted(E) students rated the classroom higher, they rated it as a friendly, socializing environment. Introverts(I) perceived classrooms to be less friendly and groupish than E students.

The J-P component had significant difference in the scales of conjunctivity-disjunctivity; counteraction; and deference-restiveness. Judging(J) students rated classrooms as more organized and efficient (conjunctivity); challenging, not accepting defeat (counteraction); and consciousness of rank (deference). Perceiving(P) students rated the same classrooms as more off-balance, unorganized (disjunctivity); accepting of others ideas (counteraction); and unacceptability of rank (restiveness).
The ego achievement scale was significant for the S-N student component. Ns perceived the environment as encouraging students to feel their efforts were important to the world, while S students did not rate this factor as high.

Exhibition-inferiority avoidance had a significant relationship in the J-P component. Ps felt the environment was more likely to draw individual attention and be highly regarded. Js preferred an environment which was marked by an air of personal privacy.

The Humanities, social science scale was significantly different in the thinking(T)-feeling(F) component. An environment which encouraged interest in manipulating or examining social objects symbolically through reflection, discussion, criticism, or empirical analysis was rated higher for Fs than Ts.

A difference was found in the impulsiveness-deliberation scale. Extraverts(E) identified with environments which tolerates impulsiveness more than introverts(I).

Two Scales nurturance and practicalness-impracticalness scales were significantly different in the J-P component. A warm friendly, nurturant environment where newcomers are welcomed (nurturance), and an environment which emphasizes effort in concrete, conventional, and visibly useful activities (practicalness) were rated higher by J students than P students.

Three scales, science, sensuality-puritanism, and understanding scales were found to be significant with the T-F preference. T students rated higher environments which encourage analysis and manipulation of physical objects through reflection, discussion,
criticism and empirical analysis (science). Ts rated classrooms higher than Fs as being casual and comfortable, they also rated the classrooms as being high more self-gratifying through sensual, exotic or esthetic experiences (sensuality); Ts rated the environment scale of understanding high where there is an orientation toward detached intellectualization. Feeling(F) students rated these environments with a less favorable score than thinkers(T).

Four first order scores had significance. First order scores consist of combinations of the 30 individual environmental scores.

Group intellectual life is a combination of harm avoidance, supplication, nurturance, objectivity, understanding, practicalness, and reflectiveness environmental factors. Significance in these scales were related to the J-P student component. J students rated classrooms higher in group intellectual life than P students.

The achievement scale consists of scores from the individual scales of energy, achievement, adaptability, conjunctivity, and emotionality. The achievement environmental scale showed significance in the S-N and J-P student personality preferences. S and J students rated classroom environment higher in achievement than N and P students.

A significant difference occurred in the orderliness scale. The orderliness scale is made up of a combination of scores from the impulsiveness, play, order, exhibitionism, and sensuality scales. J students identified their classroom as being more serious, and cautious than P students.

The thinking(T)-feeling(f) personality preference was
significantly different on the science (first order) scale. T student rated the classroom environment higher in science, a classroom characterized as involving natural sciences, together with aspects associated with sexuality and egotism.

Area I, development press, is a sum of those first order environmental factors that were related to intellectual and interpersonal activities. Students with high scores in area I were perceived as emphasizing intellectual achievement, personal development, warmth and respect as opposed to a more institutionalized adjustment oriented approach to high school education. Factors contributing to area I were: humanistic intellectual climate, group intellectual life, achievement standards, and personal dignity. Area I scores were significantly different in the T-F and J-P personality components. F and J students had higher development press scores than did T and P students.

Control press, a classroom environment in which there is emphasis upon orderliness, bureaucratic administrative procedures, and cautiousness. A high control press is associated with the absence of a press for science within the classroom environment. The factors that contribute to an area II score are orderliness, and absence of science. J students rated their classrooms higher in control press than P students.

Hypothesis 3

There is no relationship between student perceived classroom environment and student temperament (NF, NT, SP, SJ).

Significant differences occurred in six classroom environment
scale scores: abasement-assurance, achievement, change-sameness, counteraction, deference-restiveness, sexuality-prudishness, thus hypothesis 3 is rejected.

SJs and SPs were significantly different on the abasement-assurance scale (Table 4). A student with an SJ learning style rated higher classroom environments which tend to degrade and humiliate the individual, and discouraged self-confidence, while the SP learning style identified the environment which instilled confidence in the individual and encouraged individual pride.

The achievement scale, which encourages individual initiative and creativity, and promotes a can do mentality, had a significant difference between NF and SP student learning styles. The NF mean score indicated less sense of achievement in these classrooms than the SP learning style.

Change, an environment which encourages innovation and does not suppress new ideas, saw significant difference between the students who were SJ and NT, NF. SJ students scored the classroom higher in change than NF or NT students.

Counteraction, a climate which encourages individuals to take up challenges for their own part and to be critical of others, was significantly different between NT and NF, SJ learning styles. SJ student temperament rated a higher level of counteraction present in the climate than NT students, NT students did not rate classrooms as challenging. SJ and SP students were also significantly different SP students more willing to accept defeat than SJ students.

Deference-restiveness was different between the NF and SJ learning
Table 4

Student Perceived Classroom Environment And Student Personality Types

<table>
<thead>
<tr>
<th>Classroom Environment Scales</th>
<th>NT</th>
<th>NF</th>
<th>SJ</th>
<th>SP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abasement-Assurance</td>
<td>5.3a,b</td>
<td>5.3a,b</td>
<td>5.6a</td>
<td>5.2b</td>
</tr>
<tr>
<td>Achievement</td>
<td>4.1a,b</td>
<td>3.9b</td>
<td>4.1a,b</td>
<td>4.3a</td>
</tr>
<tr>
<td>Change-Sameness</td>
<td>4.8b</td>
<td>4.7b</td>
<td>5.2a</td>
<td>4.9a,b</td>
</tr>
<tr>
<td>Counteraction</td>
<td>5.2c</td>
<td>5.6a,b</td>
<td>5.8a</td>
<td>5.4b,c</td>
</tr>
<tr>
<td>Deference-Restiveness</td>
<td>5.8a,b</td>
<td>5.5b</td>
<td>6.0a</td>
<td>5.7a,b</td>
</tr>
<tr>
<td>Sensuality-Prudishness</td>
<td>3.8a,b</td>
<td>3.7a,b</td>
<td>3.4b</td>
<td>4.0a</td>
</tr>
<tr>
<td><strong>First Order</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Achievement Standards</td>
<td>26.8a,b</td>
<td>26.7b</td>
<td>27.5a</td>
<td>26.8a,b</td>
</tr>
<tr>
<td>Orderliness</td>
<td>26.6b</td>
<td>25.2a,b</td>
<td>26.1a</td>
<td>24.9b</td>
</tr>
<tr>
<td><strong>Second Order</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Development Press</td>
<td>126.4b</td>
<td>127.4b</td>
<td>130.a</td>
<td>127.3b</td>
</tr>
<tr>
<td>Control Press</td>
<td>42.1b</td>
<td>43.1a,b</td>
<td>44.4a</td>
<td>42.6b</td>
</tr>
<tr>
<td></td>
<td>n=98</td>
<td>n=113</td>
<td>n=164</td>
<td>n=247</td>
</tr>
</tbody>
</table>

Note: * Significance at the .05 level. Follow-up using Fisher's protected least significant difference test. Higher scores refer to the scale to the left, lower scores refer to the scales on the right in word pairs. Scores for single word scales refer to that word. Means with the same letter (a, b, and c) are not significantly different.
styles. Deference is an environment where a strong consciousness of rank exists, SJ students rated these classrooms higher than the NFs. Restiveness an environment where informal rank is not strongly acknowledged was scored lower by NF students.

Between the SP and SJ student significant difference were found for the sexuality-prudishness environmental scale. SP students perceived the environment to be one which was more filled with heterosexual interests and activities, whereas SJ students tended to rate the climate as more restrained or inhibited with regard to sex.

Two first order scales showed significance between personality temperaments. Achievement standards, a measure of striving for success, accompanied by high levels of activity and effort. A list of the press scales which are combined are achievement, energy, adaptability, conjunctivity, and emotionality. NF student temperament were significantly different than SJ students. SJ students rated their classrooms higher in achievement.

The orderliness environmental factor, had a significant difference between the personality temperaments SJ and NT, SP. SJ students rated their classrooms higher in orderliness than did NT and SP students. The orderliness scale is a combination of the scales: impulsiveness, play, order, exhibition, and sensuality.

Area I showed difference between all 4 styles of NF, NT, SJ, and SP learning styles. Area I, development press, consists of the factors whose characteristics of the environment are related to intellectual and interpersonal activities. NT, NF, and SP students mean scores were lower in this area than SJ students.
In Area II, control press, significant differences were seen between SJ and NT, SP learning styles. Mean scores for SJ learners were higher for orderliness, bureaucratic administrative procedures, and cautiousness; whereas NT, and SP learners perception of this climate was not high in control.

**Hypothesis 4**

There is no relationship between student perceived classroom environment and student personality types.

Three classroom environment scale scores were significant at the .05 level with discreet personality types, therefore hypothesis 4 is rejected. The three scales were Achievement, conjunctivity-disjunctivity, and sexuality-prudishness.

The achievement environmental factor, had a significant difference between the personality type INFJ and the types ESFJ; ENFJ; ENFP; ISTJ; and INTP (Table 5). The INFJ tended to rate higher the achievement climate, whereas the other personality types rated achievement lower.

Conjunctivity-disjunctivity environmental scale had a significant difference with separate personality types. ESFJ, ENFJ, and INTJ, were significantly different from ESTJ, ISTP, ISFP, and INTP student personalities. ESFJ, ENFJ, and INTJ students perceived the classroom environment as more organized, efficient, and purposeful (conjunctivity). In comparison, ESTJ, ISTP, ISFP and INTP students perceived the classrooms as more of a environment which keep students disorganized.

ISTP and ISFP personalities scored classrooms higher in
Table 5

Student Perceived Classroom Environment
And Student Temperament*

<table>
<thead>
<tr>
<th>Student's Personality Type</th>
<th>Classroom Environment Scales</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Achievement</td>
</tr>
<tr>
<td>ESTJ (n=57)</td>
<td>4.5 a,b</td>
</tr>
<tr>
<td>ESTP (n=88)</td>
<td>4.4 a,b</td>
</tr>
<tr>
<td>ESFJ (n=36)</td>
<td>3.9 b</td>
</tr>
<tr>
<td>ESFP (n=67)</td>
<td>4.2 a,b</td>
</tr>
<tr>
<td>ENTJ (n=10)</td>
<td>4.1 a,b</td>
</tr>
<tr>
<td>ENTP (n=51)</td>
<td>4.2 a,b</td>
</tr>
<tr>
<td>ENFJ (n=12)</td>
<td>4.0 b</td>
</tr>
<tr>
<td>ENFP (n=72)</td>
<td>3.7 b</td>
</tr>
<tr>
<td>ISTJ (n=48)</td>
<td>3.9 b</td>
</tr>
<tr>
<td>ISTP (n=56)</td>
<td>4.3 a,b</td>
</tr>
<tr>
<td>ISFJ (n=23)</td>
<td>4.3 a,b</td>
</tr>
<tr>
<td>ISFP (n=36)</td>
<td>4.2 a,b</td>
</tr>
<tr>
<td>INTJ (n=8)</td>
<td>4.4 a,b</td>
</tr>
<tr>
<td>INTP (n=29)</td>
<td>3.8 b</td>
</tr>
<tr>
<td>INFJ (n=6)</td>
<td>4.8 a</td>
</tr>
<tr>
<td>INFP (n=23)</td>
<td>4.0 a,b</td>
</tr>
</tbody>
</table>

Note: *Significance at the .05 level. Follow-up using Fisher's protected least significant difference test.
Higher scores, refer to the scale to the left, lower scores refer to the scales on the right in word pairs. Scores for single word scales refer to that word.
Means with the same letter (a, b, c, and d) are not significantly different.
disjunctivity (disorganized) whereas INFJ scored classrooms higher in conjunctivity.

The third environmental scale which had difference at a significant level was sexuality-prudishness. Sexuality is an atmosphere filled with heterosexual interests and activities; prudishness, is an atmosphere which is restrained or inhibited with regard to sex. INFJ personality type was significantly different from almost all other types (except ENTJ and ISFP). INFJs rated the environmental scale of sexuality higher than the other personality types.

ENTJ students had a mean score higher in sexuality while ESFJ, ISTJ, ISFJ and INFP scored prudishness higher.

ESFJ, ISFJ, INFP student personalities were significantly different from ISFP students. ISFPs scored sexuality high while ESFJ, ISFJ, and INFP scored prudishness at a higher level.

SUMMARY

Chapter IV reported the results of the relationship between student perceived classroom environment, and teaching and learning styles. A comparison was made between the individual scales of classroom Environment Index and Myers-Briggs Type Indicator.

Statistical analysis of the hypotheses were reported. Of the 4 null hypotheses, all were rejected. When analyzing the relationship between classroom environment and individual scale scores, significance was found between teaching style components, learning style components, learning style, and personality type.
Chapter V
Summary, Conclusions, and Recommendations

Summary

This study attempted to determine if there was any relationship between teaching style and student learning style with classroom environment.

Students and teachers were asked to complete the Myers-Briggs Type Indicator and Classroom Environment Index. The Myers-Briggs Type Indicator, is a questionnaire designed to identify differences in personality type. The Classroom Environment Index is a questionnaire designed to measure factors that influence classroom environment.

The population of this study consisted of teachers and students in secondary schools within 150 miles of Lincoln, Nebraska, which offered vocational agriculture programs. The sample used in this study was obtained by using a modified random sample. Seven schools elected to participate. Thirty-four vocational teachers representing Vocational Agriculture, Home Economics, Industrial Arts and Business were asked to select at least one vocational class to participate in the study. Fifty-two classes were involved with 638 vocational students participating. Tests for significance were set at the .05 level using analysis of variance. Fischers protected least significant difference test was used for mean comparisons.

SUMMARY OF FINDINGS

Based on the data presented in Chapter IV, the following results and conclusions are presented:

1. Hypothesis #1, there is a relationship between student perceived
classroom environment and instructor's teaching style by component of personality type. This relationship was found in 23 environmental factors. Personality type components of instructor's teaching style are related to these climate factors:

- Supplication-Autonomy
- Deference-Restiveness
- Ego Achievement
- Counteraction
- Adaptability-Defensiveness
- Exhibition-Inferiority Avoidance
- Change-Sameness
- Reflectiveness
- Objectivity-Projectivity
- Sexuality-Prudishness
- Conjunctivity-Disjunctivity
- Practicalness-Impracticalness
- Abasement-Assurance
- Aggression-Blame Avoidance
- Dominance-Tolerance
- Impulsiveness-Deliberation
- Sensuality Puritanism
- Achievement
- Play-Work
- Energy-Passivity
- Narcissism
- Science
- Affiliation

Significance was also found on first order and second order scales.

2. Hypothesis #2, there is a relationship between student perceived classroom environment and student components of personality type. That relationship was found in 17 environmental factors. Student personality type components are related to these climate factors:

- Chance-Sameness
- Achievement
- Affiliation
- Counteraction
- Ego Achievement
- Humanities, Social Science
- Nurturance
- Science
- Understanding
- Abasement-Assurance
- Adaptability-Defensiveness
- Conunctivity-Disjunctivity
- Deference-Restiveness
- Exhibitionism-Inferiority Avoidance
- Impulsiveness-Deliberation
- Practicalness-Impracticalness
- Sensuality Puritanism

Overall the student J-P personality component showed more relationship to classroom environment than did any of the other three preference areas (E-I, S-N, T-F).

3. Hypothesis #3, there is a relationship between student perceived classroom environment and student temperament (NF, NT, SP, SJ). Five individual environmental factor scales, two first order scales, and
both second order scales were found to have a relationship with temperament.

4. Hypothesis #4, there is a relationship between student perceived classroom environment and student personality types. Significance appeared in three of the environment scales (achievement, conjunctivity-disjunctivity, and sexuality-prudishness). However, no relationship was found by the grouping of environmental factors into first order and second order scores.

CONCLUSIONS

The first conclusion drawn, is that an instructor's teaching style does have an effect on classroom environment as perceived by students. Extraverted teachers created environments fitting extraversion(E) students. Extraverted(E) teachers were perceived by students as creating classrooms where climates were more friendly, tolerant, and building of one's self confidence.

Supplication, adaptability, and exhibitionism were scales where a high relationship with extraversion was also found. Extraverts create environments: where students learn to deal with criticism of others because their actions are constantly subjected to evaluation and review (adaptability); students depend on one another for emotional support, assistance and protection(supplication); students were inclined to draw attention to themselves and where students were highly regarded (exhibitionism).

A relationship between student perceived classroom environment and sensing preference for teachers was also found. Sensors, use their five senses to observe, they are practical and tend to see only what is
occurring in the present moment. Sensing teachers were perceived as more organized. This is a characteristic of sensing judging (SJ) teachers who represented 76.5 percent of the sample. To appear organized to a classroom of students who are predominantly sensing (2:1) should be easy for an SJ teacher because sequential order is their strength. The teaching strategy used in the classroom by sensing teachers would seem very appealing to similar personality type students. NF, NT, and SP students would feel less comfortable in the SJ teaching style.

Feeling teachers, are those who take into account anything that matters or is important to himself/herself or to other people, they make decisions on the basis of personal values. The nurturance scale was highly related to this personality component (.0001). Feeling (F) type teachers were perceived as being more warm and friendly than thinking (T) teachers. A feeling teacher would appear more concerned and friendly to students because of need to please others and a genuine concern for their welfare. Thinking (T) teachers are less aware of students emotions and may therefore create a less friendly climate.

The J-P component of personality type was also related to classroom environment. Judgers (J) are people who live in a planned, decided, orderly way, wanting to regulate life, and control it. Students with J teachers perceived the classroom to be more of a work environment which was consistently purposeful, serious and task oriented. Because of the high number of perceiving (P) students, 67 percent compared with the high number of Judging (J) teachers, 88 percent of the classrooms were perceived as more of a work oriented
environment. This again is very characteristic of the J personality type and is positively related to classroom environment.

Student learning style and personality type as measured by the MBTI is related to student perceived classroom environment. The judging(J)-perceiving(P) component of student personality type consistently had the greatest effect on classroom environment especially in the classroom environment scales of confidence building, tolerance, conventionalism, disorganization, friendliness and creativity. This may be due to the imbalance of numerous J instructors teaching such a high percentage of P students. J teachers created environments that were orderly and structured which was fine for J students but confining for the majority of students who were Ps.

The T-F component had a high relationship with the Humanities, and Social Science environmental scale. Feelers(F) rated the classroom higher when the environment encouraged interest in manipulating or examining social objects symbolically through reflection, discussion, criticism or empirical analysis. This is incongruent with the characteristic of a feeling(F) type personality. Feelers(F) take into account anything that matters or is important to themselves or other people, whereas thinking students are more concerned with logical results.

Student learning styles (NF, NT, SJ, SP,) also affect classroom environment. Significance was found in the control press. SJs, known to be traditional, responsible, and dependable students, perceived classrooms as more orderly, followed bureaucratic administrative procedure, and cautious. This finding is characteristic of the
learning style of a SJ. This result may be due to the high number of students having SJ teachers (453). Research by Dunn and Dunn (1978) shows that the stronger the match between student style and teacher style the more possibility of learning. Significant differences within three environmental classroom scales with discrete personality types indicates there are relationships.

When complete personality types were analyzed, differences were identified for students less frequently in individual environment factors and not found in first order and second order environment factors. This may be because of several previous years of learning to adjust, and having had different teaching styles and learning styles in many classrooms. Also when using the 16 personality types the sample size per cell becomes smaller.

RECOMMENDATIONS

1. It is recommended that more emphasis be given to allow students in schools to increase their awareness of teaching style/learning style through classroom instruction.

2. It is recommended that more emphasis be given in schools for teachers to increase instructor's awareness of teaching style and learning style through inservice education.

3. It is recommended that more emphasis be placed on teaching style and learning style in teacher preparation classes.

4. It is recommended that further studies be conducted to determine the relationship between teacher and student personalities and classroom environment.
5. It is recommended that studies be conducted to determine the relationship between satisfaction with classroom environment and academic achievement.
BIBLIOGRAPHY


Brown, R. (1978). The Effects of Congruency Between Learning Style and Teaching Style on College Student Achievement. *College Student Achievement*.


Fraser, B.J. (1985). *Classroom Environment*. Croom Helm, NH.


APPENDIX A

INSTRUCTIONS FOR TEACHERS
Instructions

General

1. Use a #2 pencil, blacken dots also in identification section.
2. Use a separate answer sheet for each test, don't write in booklets.
3. Keep answer sheets separate and labeled by section for each test.

Classroom Environment Index -- for students

Note: Because of the length of this test you may wish to give it in two separate periods. Part 1 (150 questions) one period and part 2 (150 -300) in another period.

1. Teachers: This test should only be given to those students who you will have for a long period of time (more than 1 semester) i.e. Vo-Ag 9 and 10.
2. Name - everyone put in their own name and blacken dots.
3. Grade
4. Bottom side 1, under identification number place code for this class in columns A and B. If "other" is used specify at top right of answer sheet.

<table>
<thead>
<tr>
<th>Code</th>
<th>Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Drafting</td>
</tr>
<tr>
<td>02</td>
<td>Woods</td>
</tr>
<tr>
<td>03</td>
<td>Plastics</td>
</tr>
<tr>
<td>04</td>
<td>Metals</td>
</tr>
<tr>
<td>05</td>
<td>Auto</td>
</tr>
<tr>
<td>06</td>
<td>Building Trades</td>
</tr>
<tr>
<td>07</td>
<td>Agriculture</td>
</tr>
<tr>
<td>08</td>
<td>Special Voc. Needs</td>
</tr>
<tr>
<td>09</td>
<td>Family Living</td>
</tr>
<tr>
<td>10</td>
<td>Foods</td>
</tr>
<tr>
<td>11</td>
<td>Clothing</td>
</tr>
<tr>
<td>12</td>
<td>Distributive Ed</td>
</tr>
<tr>
<td>13</td>
<td>Diversified Occupations.</td>
</tr>
<tr>
<td>14</td>
<td>Accounting</td>
</tr>
<tr>
<td>15</td>
<td>Office</td>
</tr>
<tr>
<td>16</td>
<td>Typing</td>
</tr>
<tr>
<td>17</td>
<td>Computers</td>
</tr>
<tr>
<td>18</td>
<td>Business Law</td>
</tr>
<tr>
<td>19</td>
<td>General Business</td>
</tr>
<tr>
<td>20</td>
<td>Other (specify)</td>
</tr>
</tbody>
</table>

5. First 150 (part 1 questions use answer sheets marked with #1 at top right.
6. 151 - 300' (part 2) use answer sheet marked #2 (top right) starting with 151 as #1 on the answer sheet.
7. Explain that these questions pertain to this classroom only and that they should answer honestly.
Myers-Briggs Type Indicator (MBTI)

1. Name (student name) print and blacken dots.
2. Sex.
3. Grade.
4. Identification number lower left, side, place code for class in columns A and B.

<table>
<thead>
<tr>
<th>Code</th>
<th>Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
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<td>04</td>
<td>Metals</td>
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<td>08</td>
<td>Special Voc. Needs</td>
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<td>Family Living</td>
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<tr>
<td>10</td>
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<td>13</td>
<td>Diversified Occupations.</td>
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<tr>
<td>14</td>
<td>Accounting</td>
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<tr>
<td>15</td>
<td>Office</td>
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<td>Typing</td>
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<td>17</td>
<td>Computers</td>
</tr>
<tr>
<td>18</td>
<td>Business Law</td>
</tr>
<tr>
<td>19</td>
<td>General Business</td>
</tr>
<tr>
<td>20</td>
<td>Other (specify)</td>
</tr>
</tbody>
</table>

Column C, enter your school code. It is: _________

5. Answer first 100 questions only, skip any not sure of; answer the questions as they prefer to be, not what someone else the questions as they prefer to be, not what someone else thinks they should be.

6. Teachers - There are extra answer sheets for the MBTI if you wish to test classes other than what we discussed at the workshop. The exact number of extras is on an attachment.

Organizational Climate Index (OCI)

This is for teachers only. Take it in the context of your schools environment, especially as it impacts on you as a vocational educator. Individual results will be shared with no one.
1. Enter your name.
2. Identification section enter your school code in column C.
APPENDIX B

DISTRIBUTION OF
MYERS-BRIGGS TEACHER PERSONALITY TYPES
### Distribution of Myers-Briggs Teacher Personality Types

<table>
<thead>
<tr>
<th>SENSING TYPES WITH THINKING</th>
<th>SENSING TYPES WITH FEELING</th>
<th>INTUITIVE TYPES WITH THINKING</th>
<th>INTUITIVE TYPES WITH FEELING</th>
<th>N</th>
<th>%</th>
<th>I</th>
</tr>
</thead>
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<td>INFJ</td>
<td>INTJ</td>
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<td>ISFP</td>
<td>INFJ</td>
<td>INFP</td>
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<td>ESFP</td>
<td>ENFP</td>
<td>ENTP</td>
<td>4</td>
<td>11.8</td>
<td>0.29*</td>
</tr>
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<td>ESFJ</td>
<td>ENFJ</td>
<td>ENTJ</td>
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<td>%= 0.0</td>
<td>%= 0.0</td>
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<td>0.25*</td>
<td></td>
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<td>I= 0.0</td>
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<td>11.8</td>
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<td>5.9</td>
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<td>I= 0.0</td>
<td>I= 0.0</td>
<td>I= 0.0</td>
<td>32.4</td>
<td>1.22*</td>
<td></td>
</tr>
</tbody>
</table>

**Legend:** % = percent of total choosing this group who fall into this type.
I = self selection index; ratio of % of type in group to % in sample.

**NOTE CONCERNING SYMBOLS FOLLOWING THE SELECTION RATIOS:**
* Indicates significance at the .05 level, i.e., chi sq. > 3.8;
# Indicates significance at the .01 level, i.e., chi sq. > 6.6;
* Indicates significance at the .001 level, i.e., chi sq. > 10.8.

(UNDERSCORE) Indicates Fisher's exact probability used instead of chi-square.
APPENDIX C

DISTRIBUTION OF
MYERS-BRIGGS STUDENT PERSONALITY TYPES
Distribution of Myers-Briggs Student Personality Types

<table>
<thead>
<tr>
<th>Sensing Types</th>
<th>Intuitive Types</th>
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<td>WITH FEELING</td>
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</tr>
</tbody>
</table>

LEGEND: % = PERCENT OF TOTAL CHOOSING THIS GROUP WHO FALL INTO THIS TYPE. I = SELF SELECTION INDEX; RATIO OF % OF TYPE IN GROUP TO % IN SAMPLE.

NOTE CONCERNING SYMBOLS FOLLOWING THE SELECTION RATIOS:
- IMPLIES SIGNIFICANCE AT THE .05 LEVEL, I.E., CHI SQ. > 3.8;
- IMPLIES SIGNIFICANCE AT THE .01 LEVEL, I.E., CHI SQ. > 6.6;
- IMPLIES SIGNIFICANCE AT THE .001 LEVEL, I.E., CHI SQ. > 10.8.

(UNDERSCORE) INDICATES FISHER'S EXACT PROBABILITY USED INSTEAD OF CHI-SQUARE.