The Relationship of Moral Reasoning Level of Instructors to Their Teaching Style and Adult Student Perception of the Learning Environment

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THE RELATIONSHIP OF MORAL REASONING LEVEL OF INSTRUCTORS
TO THEIR TEACHING STYLE AND ADULT STUDENT PERCEPTION OF THE
LEARNING ENVIRONMENT

by

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THE RELATIONSHIP OF MORAL REASONING LEVEL OF INSTRUCTORS TO THEIR TEACHING STYLE AND ADULT STUDENT PERCEPTION OF THE LEARNING ENVIRONMENT

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The purpose of this study was to examine the relationship between instructor moral reasoning level, teaching style, and adult students' perception of the classroom environment. Rest's Defining Issues Test measured the independent variable, principled level of moral cognitive development. Teaching style was identified as either learner-centered or teacher-centered using Conti's Principles of Adult Learning Scale. Student perception of classroom environment was measured by Stern and Walker's Classroom Environment Index (Form 971). The possible influence of the demographic variables of (1) gender, (2) age range, and (3) level of education on principled moral reasoning level was explored. The sample consisted of 34 faculty teaching adult students at six area colleges and 519 students. There was a moderate significant relationship between moral reasoning level and teaching style indicated by Pearson's correlation coefficient. Step-wise regression showed that the utilization score on the Defining Issues Test when combined with the principled moral reasoning score moderated the amount of variance accounted for between the moral reasoning level and teaching style by a 12% increase. There was no significant correlation between teaching style and student perception of teaching style behaviors. There was significant moderate correlation between principled moral reasoning level and gender.
Dedication...

With loving memories...

To my parents...
ACKNOWLEDGEMENTS

The completion of this dissertation could not have been achieved without the cooperation of skilled and scholarly individuals forming the network of needed resources. Dr. Leverne Barrett, my adviser, sustained me in all my efforts with his knowledge, patience, and humor. He assumed the responsibility for guiding me through the dissertation process at the critical time of proposal presentation when my adviser, Dr. Robert Florell, retired. I am very grateful to Dr. Florell for his wise recommendation. My committee members, Dr. Robert Brown, Dr. Steve Eggland, and Dr. McLaran Sawyer were always there when needed for advise and assistance as this study progressed to its completion.

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CHAPTER 1

Introduction

Context of the Problem

Practitioners in the field of adult education regularly face a wide range of ethical issues, given the diversity of institutional and community-based educational policies, programs, and practices. To further complicate the issue, a major characteristic of adult education is its flexibility in responding to forces within society’s social, economic, and political structure. Pressures brought about by demands of these forces influence decisions and actions at all levels of administration and instruction.

This study will focus on the individual practitioner. Teachers are concerned with instructional success. Their explicit goal is to guide their students in becoming literate, competent, and knowledgeable persons. This goal becomes more complex when judgment factors such as fairness or justice, discipline, evaluation, confidentiality, and advising enter into the picture. These factors and many others encountered in the teaching/learning context can present moral dilemmas for the instructor. The teacher must balance the claims of justice, care, and truthfulness against each other as well as against nonmoral interests (Althof, 1990, p. 4). Educators of adult students bring to the classroom their own personal moral sense about what they ought and/or ought not do as practitioners. "Individuals’ basic values and beliefs affect both the way they teach and, in some cases, even what they teach" (Apps, 1979; Tom, 1984 cited in Brockett, 1988).
Statement of the Problem

The problem of whether or not developmental stages of moral reasoning can be related to instructor teaching styles and the learning climate of the classroom in an adult education setting will be the focus of this study. The teaching styles will be self-reported by each instructor. The learning climate will be reported by the instructors' students. An attempt will be made to answer the following questions:

1. Is developmental level of moral reasoning related to learner-centered and teacher-centered styles of instruction?

2. If there is a significant relationship between level of moral reasoning and the two teaching styles are there differences between students' perceptions of the classroom learning environment of learner-centered and teacher-centered instructors?

Discussion of the Problem

Ralph Brockett has identified three dimensions that encompass moral/ethical practice in adult education: (a) a personal value system, (b) one's responsibilities to multiple audiences (from students to administrators, colleagues, and community), and (c) teaching practices (Brockett, 1988, pp. 10 - 12).

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Figure 1: Brockett's Dimensions of Ethical Practice
These dimensions are assumed to be interactive in this study. The interactive model is presented as three interlocking circles. In the center of this model all dimensions share a common area of influence. This core area represents the structure or network of thinking patterns of intellectual and moral reasoning that have been forming since infancy. The structure is dynamic; restructuring as social interaction matures and new situations create different meanings and consequences for the individual. The instructor’s consideration of various options and alternatives leading to a moral or ethical decision can range from complex to simple combinations of conceptual operations.

Comparison of moral reasoning levels with performance of professionals has been attempted in a number of studies (Candee, 1977; Thoma and Rest, 1986; Volker, 1984). There are indications that developmental differences in moral reasoning relate to differences in professionals’ understanding of the moral aspects of their work. Identifying one’s developmental level of moral reasoning might provide insight concerning educators’ preferences in teaching practices that comprise their style of teaching. Research by Johnston and Lubomudrov has provided empirical evidence, though slight, of a relationship.
comprise their style of teaching. Research by Johnston and Lubomudrov has provided empirical evidence, though slight, of a relationship between elementary school teachers' moral reasoning levels and democratic/autocratic teaching styles (Johnston et al, 1987). James Rest (1989) points out that review of the literature supports the evidence of a relationship between measures of developmental levels of moral reasoning and performance.

How people solve hypothetical moral dilemmas does relate to how they behave in real-life situations; a necessary prerequisite for any claim that a similar relationship exists in a novel situation. A number of studies have found a relationship between moral judgments and clinical performance of medical interns (Candee, 1977 & Candee et al.'s, 1980); of student performance in teaching internships (Bergem, 1986); counselor education programs (Volker, 1984) and dental schools (Bebeau, Rest & Yamoora, 1983), and (Rest, Moral Forum, 1989, p. 15).

Therefore, it would seem that developmental cognitive moral reasoning is the basis for increasing complexity in decision-making/problem solving related to moral issues in real life contexts. These cognitive moral structures and how they may be related to teaching practices can be tapped by using (a) Rest's Defining Issues Test, (b) Conti's, The Principles of Adult Learning Scale, and (c) Stern's, Classroom Environment Index.

The dimension of teaching practice as it is affected by moral reasoning is of particular interest because of the value-laden interaction that occurs in the classroom. Personal beliefs and values, professional responsibilities, and teaching practice interact throughout the life career of educators "who are in a unique position to influence the minds and actions of clients and others with whom he or she interacts" (Singarella & Sork, 1983, pg. 246). "...teaching style is comprehensive..."
agreement that there is interaction between teaching practices, values, and beliefs, relating teaching practices to moral reasoning levels could have relevancy to adult educators insofar as instructors' ethical responses to ethically sensitive situations is a subset of moral behavior (Welfel & Lipsitz, 1983, p. 195).

Lawrence Kohlberg (1969) proposed a developmental moral reasoning theory to explain a person's capacity to make mature moral judgments. "Kohlberg defines morality as justice and fairness, and he believes that an individual's moral judgments reflect reasoning patterns rather than emotional processes. ... moral development is viewed as the rational, cognitive construction of ethical premises, rules and conclusions that motivate moral judgment" (Green, 1989, p. 199). Reasoning ability associated with moral judgment was studied using so-called moral dilemmas about which subjects were interviewed, their responses recorded and analyzed by trained specialists according to criteria that established levels of use of increasingly complex logic as they related to issues of fairness or justice.

The theory's application to teaching practice lies in the assumption that classroom instruction and management, and interactions with students can contain moral issues. The instructors' decisions and responses are behaviors that can be related to the developmental level of one's moral reasoning. His theory holds that there are six stages associated with the development of moral reasoning ability.

Kohlberg's colleague, James Rest, for his dissertation, developed an objective test, the Defining Issues Test (1969), which identified the six stages using multiple choice items related to Kohlberg's moral
dilemma stories. Rest's **Defining Issues Test** identifies developmental stages of moral reasoning based on the principle of justice or "fairness" in establishing rules, roles, and responsibilities in a social group (Rest, 1979, pp. 19 - 20). A teacher may understand rules as controlling mechanisms imposed by external authority in order to maintain order and stability or, he/she may view them as being arrived at through teacher/group consensus and maintained interdependently by the group. Both understandings represent different developmental stages of moral reasoning. The **Defining Issues Test** is reliable and has construct validity (see Chapter 3). The **DIT**, as it is referred to, will be used to measure level of principled moral development in this study.

Teaching styles in adult education have been studied by Gary Conti of Montana State University's Kellogg Center. His dissertation (1978) was devoted to developing an instrument based on educational principles appropriate for adult learners, the **Principles of Adult Learning Scale**, **PALS**, to measure collaborative (learner-centered) instruction vis-a-vis teacher-centered teaching styles. The scale surveys teaching behaviors specified under seven factors or subscales. The **Principles of Adult Learning Scale** has been tested for reliability and validity (see Chapter 3).

A basic premise of adult education is that the instructor's teaching behaviors should assist the learner to reach the goals of the educational experience in a positive way by working with adult students to achieve their perceived educational goals. Creating an environment that facilitates the learning process involves careful planning and management by the instructor. The learning environment encompasses
physical and human/interpersonal elements. Student evaluation of the
learning environment created by the instructor will be measured using
Stern's, Classroom Environment Index. Scores are obtained in six
areas: (a) humanistic intellectual climate, (b) group intellectual life,
(c) achievement standards, (d) personal dignity, (e) orderliness, and
(f) non-science. Its validity and reliability are discussed in Chapter
3. Additional information on selected variables concerning the instruc-
tors will be obtained by a short demographic survey.

Theoretical Perspective

The approach to this study has a two-fold orientation:
psychological and philosophical. Piaget's cognitive developmental
theory, Kohlberg's moral cognitive reasoning theory, and H. A Murray's
Need-Press theory based on perceptual psychology of interaction
comprise the psychological framework. Kohlberg derives the philosophi-
cal rationale for his theory of morality from the Platonic view of the
nature of virtue and his developmental theory of moral reasoning from
Piaget.

The educational philosophies of Dewey, Lindeman, and Knowles form
the bases for studying teaching style and the Principles of Adult
Learning Scale identifies teaching practices that reflect these
philosophical orientations. Perception of social interaction within the
learning situation involves a relationship between the instructor and
the adult learner. Instructor and student are exposed to the attitudes,
values, knowledge of one another, to teaching methods and other factors
in the learning environment that arise from the influence of the
institution itself.
Piaget's Theory of Cognitive Development

Two studies, Haan et al.'s (1982) and Walker (1986), examined the relationship between cognitive development and moral development. "Cognitive development was found to be a prerequisite for moral development (Walker, 1986, p. 122).

Piaget's stage theory of cognitive development has four important properties:

1. Piagetian stages are stable, cohesive, organized systems of interrelated actions and potential actions: structured wholes.

2. These stages occur in universal sequence. They cannot be skipped or rearranged.

3. Later stages are transformations of earlier stages. (Ontogeny recapitulates phylogeny) A new intellectual structure evolves that is more differentiated and integrated, building upon the preserved previous knowledge.

4. The progression to a higher stage of cognitive activity is irreversible once transformation into new cognitive structures has been achieved (Green, p. 170).

Piaget posited four developmental stages in human thought processes. The first stage is the sensorimotor stage of infancy and toddlerhood or the period of action knowledge. The 2 to 7 year old child's thinking is considered to be preoperational, specific mental images, memories, symbols and language is used by the child for relating to others and to objects. The concrete operational stage begins at approximately 7 years of age, lasting to 14 years or even into adulthood. Individuals in this stage can perform reversible logical and
mathematical transformations on either physically present objects or ideas that derive from physical experience (Green, p. 178). The third stage, the formal operational stage usually begins at age 14 years and lasts through adulthood. Simply and briefly, this stage is characterized by "if . . . then" logical relationships.

Development of reasoning ability is produced through the interaction of four change factors: biological maturation, physical experience, social experience and equilibration. Cognitive development is primarily the work of equilibration, the ongoing maintenance of the activities of accommodation and assimilation in balance. The achievement of a temporary state of balance being a cognitive change. Equilibration is achieved when insight into internal/external relationships or internal conceptual relationships becomes part of the person's reasoning structure that influences how new knowledge is acquired. The reasoning structures become more adept and flexible in adapting to novelty and unpredictability in the world (Flavell, 1963, p. 240, cited in Green, p.'67)." Assimilation, accommodation and equilibration are the internal principles of cognitive development.

There are three principles that link thinking to the person's reality as it is experienced: schemes, operations, and cognitive structures. A scheme is an organized, generalizable pattern (Green, p. 168). Schemes structure reality. Cognitive operations are reversible mental action patterns (Green, p. 169). Examples of operations are addition, substraction, multiplication, and division. Cognitive structures are those organized systems of underlying patterns of knowing, reasoning, and understanding that comprise a person's rules for
processing information or for connecting experienced events, past or present (Johnston, M., 1989, p. 45). These principles form the theoretical foundation for Kohlberg's theory of cognitive development of moral reasoning.

Lawrence Kohlberg: Theory of Cognitive Developmental Moral Judgment

Kohlberg's theory of cognitive developmental moral judgment (seeDefinitions pg. 13) proposes that the ethical concept of justice provides the rationale for deciding how one's activities should or could affect the other person. The elements of Kohlberg's theory that drive moral development are the development of parallel thought processes and their organization (cognitive development according to Piagetian theory), and contradictory beliefs that must be resolved either intrapersonally or interpersonally (cognitive conflict). Emotions can also trigger thinking about certain situations with resultant growth in moral reasoning development (Kohlberg, 1973).

There are six developmental stages of moral reasoning posited by Kohlberg:

Stage 1: obedience to authority and avoidance of punishment,

Stage 2: obedience given in order to get a reward (fair exchange interaction),

Stage 3: actions conform to stereotypical images promulgated by one's culture and society,

Stage 4: behavior is ordered according to law and order for the sake of maintaining the given social order,
Stage 5: Right action is defined in terms of general individual rights and standards that have been agreed upon through consensus by society as a whole.

Stage 6: Actions are governed by decisions of conscience based on universal principals of justice, the reciprocity and equality of human rights and respect for the dignity of human individuality. (Rest, 1979, pp. 22 - 23)

Kohlberg (1973) believed that development of logical reasoning through the progression of Piagetian stages was necessary for moral reasoning. Walker's study conducted in 1983 of the relationship between level of cognitive reasoning and stage of moral reasoning in adults supported Kohlberg's hypothesis concerning such a relation. This relationship is labeled, "structural parallelism", meaning that there is structural consistency within thought across contexts (Walker, 1986).

Earlier studies involving administration of IQ, Aptitude and Achievement measures with Rest's Defining Issues Test have been conducted; 83% of the 52 correlations reported were in the .20 to .50 range (Rest, 1979).

The exercise of moral reasoning is an organized thought process of weighing the claims of another person against one's own interest when they are in conflict. One must be able to weigh or balance the claims of others against one's own, therefore, one must be able to perceive what the other person's claims are. Robert Selman's research in social-cognitive reasoning has provided empirical evidence that children go through different stages of how they perceive and interpret other peoples' points of view in relation to his/her own. "The stage at which the moral claims of self and others are considered builds on the
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structurally parallel role-taking stage of understanding the perspectives of self and others (Selman, in Likona, 1976)." Other studies have demonstrated that role-taking has a necessary but not sufficient relation with stages of moral development (Giraldo, 1973; Hickey, 1972; Kuhn, 1973; Moir, 1972; Thower, 1972; as cited in Likona, 1976, p. 308).

The above review of studies concerning various factors that are part of the developmental process of moral reasoning point to a very complex interaction of the person with others (interpersonal) and with his/her inner (intrapersonal) belief systems. Cognitive conflict, emotion, and role-taking could be considered synergetic in their affect on development of moral reasoning.

Teaching Style: Theory and Principles in Adult Education

From its beginnings in the United States, the shapers of adult education, Lindeman, Bergevin, Knowles and Houle supported "person-oriented" teaching. They were and are proponents of Dewey's progressive philosophy of education. Some commonalities of their ideas of the type of teaching style that should be cultivated in adult education are: a) the curriculum should be learner-centered; b) learning episodes should capitalize on the learner's experience; c) learning should be problem-centered; d) adults are self-directing; e) the learner should participate in needs diagnosis, goals formation, and outcomes evaluation; and, f) the teacher should serve as a facilitator rather than a repository and dispenser of facts (Conti, 1985).

The "person-oriented" teacher traits were associated with attitudes toward progressive education; the "task-oriented", with
traditional attitudes about education. Progressive education, advocated by John Dewey, believed that learning was experiential and the learner should be an active participant in planning and evaluating the learning process. In contrast, a traditional education involved acquiring competency in a subject measured by some form of testing to see if change had occurred. The teacher planned the class material from a base of objectives, presented the material, and then measured the changes in behavior or mind content using criterion-referenced tests.

As research on teacher traits progressed and expanded the language designating clusters of teacher behaviors changed. "Person-oriented" became "learner-centered" and "task-oriented" became "teacher-centered" styles of teaching in adult education.

Perception and Behavior

Kidd (1959) examined the role of perception as it relates to the learner in How Adults Learn. He posited that "the learner reacts to all experience as he perceives it" (Ibid, p. 49). "... the most important aspect about experience and learning is the way the learner perceives his own experience as unique and private" (Ibid, p. 46). While Kidd emphasizes the aspects of the relationship between perception, experience, and learning, the Murray model of need-press proposes that behavior results from the interaction that occurs between the person and the environment.

Perception occurs when concrete opportunities are made available. Three of the major sources of perceptions in an educational context are (a) all of the material things used to assist learning that are present in the environment; (b) the experiencing of one's own physical,
emotional and thinking self; and, (c) interaction with classmates, other students, and the teacher. The character of the perceptions is affected by the interactions among the sources of perception within the learning context. "...the perceived environment is both personal and consensual. It includes a public world largely shared by other (nonprimitive, non-pathological) selves viewing each other as external people confronting the same external circumstances" (Macleod, 1951, as cited in Stern, 1970). Meaningfulness is provided by the person's perceptual field which Combs defines as "the entire universe, including himself, as it is experienced by the individual at the instant of action" (Combs & Snygg, 1959, p. 20). One could surmise that behaviors within the classroom are related to the perceptual relevance of the situation for both instructors and students.

Research Questions

The research questions that address the problem presented by this study are:

MAJOR QUESTIONS

1. Is there a relationship between developmental level of moral reasoning of instructors and their teaching style?

2. Is there a relationship between level of moral reasoning, teaching style, and the students' perception of classroom climate?

3. Are the differences in the students' perceptions of the classroom environment related to instructor moral reasoning stage scores and teaching style scores?
4. Is there a relationship between instructor "Principled thinking" scores (P scores), "Utilization" scores (U scores) on the Defining Issues Test of moral reasoning (DIT) and the subscale scores on the Principles of Adult Learning Scale (PALS)?

5. Do DIT scores differ between male and female faculty?

6. Do courses in philosophy and/or adult education courses or both at graduate level make a difference in the scores of principled moral reasoning as measured by the DIT and the instructors’ teaching style as measured by PALS?

Definitions

Adult learner. "Any adult who engages in some type of activity, formal or informal, in the acquisition of knowledge or skill, in an examination of personal attitudes, or in the mastery of behavior" (Hiemstra, R., 1976, p. 39).

Cognition. "The act or faculty of knowing or perceiving" (Funk & Wagnalls, 1957, p. 263).

Ethics. This project uses normative ethics which refers to a set of beliefs that serve as guides to action (Brockett, R. 1988, p. 3).

Learner-centered teaching style. A collaborative mode of teaching adult students that facilitates the development of a trusting relationship between instructor and learner while encouraging the student to be increasingly self-directed and responsible for their learning experiences (Conti, G., 1985, p. 221).
Justice. The primary regard for the value and equality of all human beings and for reciprocity in human relations (Lawson, M., 1983, p. 22).

Moral Judgment. Determining how the benefits and burdens of social cooperation are to be distributed, according to Kohlberg, by application of the universal ethical principle of justice (Rest, J., 1979, p. 20).

Moral Reasoning Development. The process of resolving interpersonal conflicts of social interaction based on the principle of justice resulting in the construction of more adequate and complex reasoning patterns, called stages (Rest, 1979, pp. 19 - 21).

Needs. "Organizational tendencies which appear to give unity and direction to a person’s behavior ... which can be inferred from the daily routine activities and feelings that are characteristic of individuals" (Richman et al, 1979, p. 1).

Press. The perceived social and physical characteristics present in environmental settings that either facilitate or impede the internalized personality needs of the individual (Richman et al, 1979, p. 1).

Stage of moral development. Transformations that occur in a person’s patterns or structures of thought. Stages are "structured wholes" of organized systems of thought that become increasingly complex as the next higher stage is reached. Thinking at a higher stage includes within it lower stages of thinking (Kohlberg & Hersch, 1977, pg. 54).
**Teacher-centered teaching style.** A mode of teaching that emphasizes the authority of the teacher as the manager of the learning environment, determining what conditions and practices are necessary to bring about desired behavioral change in the student (Conti, G. & Welborn, R, 1986, p. 20).

**Assumptions**

1. It is assumed that moral reasoning is a rational process that develops in stages over the lifetime of an individual and each stage requires more complex use of logic and problem solving capacity than the preceding stage.

2. It is assumed that moral behavior is a result of a process of interaction between reasoning complexity, emotion or affect, and the context of the social situation.

3. It is assumed that movement through stages is linear and is not reversible although lower stage thinking is incorporated into the new patterns of reasoning.

4. It is assumed these stages can be identified by objective testing methods.

5. It is assumed that developmental level of moral reasoning is linked to behavior.

6. It is assumed that learning-centered and teaching-centered styles of teaching will be present in the sample population.

7. It is assumed that consistency between thought structure and behaviors will be perceived by the instructors' students.
Delimitations and Limitations

1. The sample of instructors to be used in this study will be those who teach non-traditional adult students.

2. This study will not attempt to predict the causes of variances in moral reasoning (judgment).

3. The study will not evaluate the instructor as a "more" or "less" moral person.

4. Teaching styles cannot be derived empirically either from student perceptions of the teacher's classroom behavior or from teachers' self-reports on how classroom issues were handled as they represent ideal types of behaviors used to analyze clusters of teacher behaviors called styles.

5. Teacher characteristics may be significantly altered when perceived by students, for each student brings his/her own beliefs, attitudes, problems, feelings and personality structure into the classroom.
CHAPTER 2

Review of the Literature

Introduction

This review is divided into five sections: 1) the philosophical basis of Kohlberg's psychological theory of moral reasoning, 2) some of the issues this theory has generated, 3) the philosophical basis of Conti's Principles of Adult Learning Scale, 4) linkage of moral reasoning with teaching style behaviors, and 5) students' perception of classroom environment based on Murray's need-press model of human behavior and phenomenology.

The Philosophical Basis of Kohlberg's Theory

Kohlberg's psychological theory has precursors in Kant and Spencer through Piaget. His philosophical meaning of moral is derived from Plato. A brief summary of the major ideas of Kant and Spencer is provided because both, in addition to Piaget, influenced Kohlberg's theoretical basis for the developmental aspect in moral reasoning.

Plato

The origin of morality for Kohlberg is supported by Plato's notions about universal principles. These notions are:

First, virtue is ultimately one, not many, and it is always the same ideal form regardless of climate or culture.

Second, the name of this ideal form is justice.

Third, not only is virtue one; virtue is knowledge of the good. He who knows the good chooses the good.

Fourth, the kind of knowledge of the good which is virtue is philosophical knowledge or intuision of the ideal form of the good, not correct opinion or acceptance of conventional beliefs. (Kohlberg, 1970, p. 58)
The principle of justice is abstract and transcendent, a metaphysical concept that according to Kohlberg proceeds along a developmental path from childhood through adulthood. Kohlberg's definition of the final stage of developmental moral reasoning provides a more thorough understanding of his meaning of morality. In his article, "From Is to Ought: How to Commit the Naturalistic Fallacy and Get Away With It", (1971), he defines the final developmental stage:

Stage 6. The universal ethical principle orientation. Right is defined by the decision of conscience in accord with self-chosen ethical principles appealing to logical comprehensiveness, universality, and consistency. These principles are abstract and ethical (the Golden Rule, the categorical imperative); they are not concrete moral rules like the Ten Commandments. At heart, these are universal, principles of justice, of the reciprocity and equality of human rights, and of respect for the dignity of human beings as individual persons. (Kohlberg, 1971, p. 165)

Because Kohlberg is interested in the discussion of choices based on principle he subscribes to the formalist school of philosophy which maintains there are two kinds of ethics, normative and metaethics. "Normative ethics essentially refers to what people in general mean by moral or discussions of good and evil. Metaethics refers to conversations about moral discussion (Lawson, 1983, p. 60). Kohlberg is concerned with metaethical analysis of verbal justifications of moral decisions or reasoning. "All of his studies are based on verbal responses of subjects to moral dilemmas (Lawson, p. 60)" with follow-up analyses that place the responses at a stage of moral reasoning.

Immanuel Kant and Piaget

Kant viewed knowledge as being constructed from innate categories, schemata, and interactive constructs (Green, M., 1989, p. 162). His
thesis was that humans perceive the world as they want to see it not as it actually exists. "All our perceptions are filtered through structures and processes of our mind" (Ashley, D. & Orenstein, D., 1985, pp. 105 & 106). Blum (1988) points out that Kantian moral philosophy views moral principles of action to be derived from pure reason alone. Piaget and Kohlberg followed Kant’s pursuit of universal and abstract laws governing reasoning processes but from a developmental perspective. Piaget believed that categories of knowledge were not innate but evolved developmentally in stages as the child matured physiologically and socially. The person's intellectual development was a result of constructive combination and blending of information received through the child's senses, perceptions of reality, and their capacity to form concepts or images that give meaning to experience and environmental stimuli (Green, p. 162).

**Herbert Spencer and Piaget**

Herbert Spencer was an English psychologist. Being a cousin of Charles Darwin he was heavily influenced by Darwin's theory of evolution. Spencer proposed that all things were subject to a universal law which he called the *synthetic principle*.

There are four themes that dominate the synthetic principle. The first theme, ontogeny recapitulates phylogeny, is reflected in Piaget's belief that an individual's cognitive development parallels the development of scientific concepts in the historical advances of science. The brain moves from simple autonomic functions to complex symbolic functions. The second theme explicates two kinds of tension, the tension between an organism's tendency to consume its environment and the
environmental pressures that resist consumption, antagonistic tensions. Spencer defined these tensions as accommodation, the adjustment of one's inner structures to external relations (Spencer, 1902, pp. 388 - 389), and assimilation, the structural complexities that counteract external relations (Spencer, p. 496). These functions are an integral part of Piaget's theory. The third theme found concerns the ultimate goal of development, balance between internal functions and external forces. For cognitive functions to achieve balance the person must spontaneously regulate their adjustments to the world (accommodation) while simultaneously distorting information (assimilation) to "fit" his/her cognitive structure (Green, p. 163). This activity is called equilibration and is a fundamental concept in Piaget's theory. The fourth theme is stage theory of development (Spencer, 1897, vol.2, p. 513). Spencer proposed developmental stages that moved from the passive reception of sensations and reactive reflexes of infancy to the active relating of abstract symbols to objects and events that are experienced. Kohlberg's stage theory of moral reasoning development is derived from Piaget who was influenced by Kant's belief in the constructivist nature of knowledge and Spencer's stage theory of the development of reasoning capacity. 

Issues Raised by Kohlberg's Theory of Moral Reasoning Development

Kohlberg adapted Piaget's stage theory of reasoning development to explain the development of moral reasoning throughout the lifespan. Major questions have been asked by researchers (Gilligan, 1982; Kurtines & Greif, 1974; Rest, 1979) regarding his claims of invariance and irreversibility of the stages of moral reasoning development; the reduction
of moral reasoning to into a totally abstract realm of internal individual cognitive patterns; and, the gender bias in his sample populations.

Rest (1979) acknowledges that Kohlberg's simple stage model has four empirical discrepancies. Subject fluctuations over time between stages have been identified in intervention studies (e.g., Blatt and Kohlberg 1975; Turiel 1966). "...subjects are not simply "in" one moral stage or another, but fluctuate within a developmental range" (p. 55). Test characteristics of instruments or methods that attempt to assess cognitive structure can influence a subject's response. After reviewing numerous studies investigating the effects of test characteristics Rest concludes that "test characteristics make a significant difference in the manifestation of cognitive structure, and the differences have been much greater than we would have expected from a straight Piagetian view" (p. 56). Reasoning complexities that should be evident in one stage only have been demonstrated to appear in other more advanced stages of development when more advanced types of thinking would be expected. "... cognitive developmental research indicates that the development of cognitive structures proceed through different levels and that the development can extend years beyond the first manifestation of the structure, even if new structures have made their first manifestations in the meantime" (pp. 61 - 63). This phenomenon is called "decalage"; it describes an inconsistency of concept use across stages (p. 59). The subjects' responses to different testing methods produces discrepancies when scored for stage identification. Interviewing places emphasis on language abilities; an objective recognition-rating task asks for a subject's preference of one alternative over another.
Rest (1979) proposes a developmental stage model that allows for ongoing cognitive growth that occurs while a person progresses into and out of each level of more complex thinking. The model attempts to account for use of lower or higher stage reasoning in certain situations even though an individual tests out at a specific level. "The notion that a person 'has' or has not a stage is wrong. ... The question of developmental assessment should not be, 'What stage is a person in?' but rather, 'To what extent and under what conditions does a person manifest the various types of organizations of thinking?'" (p. 63).

Cultural and social environments provide circumstances that, according to cognitive developmentalists, the individual interacts with internally through reasoning processes. Kohlberg (1963) maintained that various stages of moral reasoning "represent structures emerging from the interaction of the child with his social environment, rather than directly reflecting external structures given by the child's culture" (p. 30). Social learning theorists' research provides evidence that supports the influence of cultural/social variables (e.g., Bandura & McDonald, 1963; Cowan, Langer, Heavenrich & Nathanson, 1969). Bandura's (1963) experimental study of the influence of social reinforcement and modeling behaviors of authority figures in shaping children's moral judgments demonstrated that "'children's judgmental responses are readily modifiable, particularly through the utilization of adult modeling cues'" (Quoted in Kurtines & Greif, 1974, p. 467). Rather than the stages of moral reasoning being invariant, the results of these studies imply that moral thought is responsive to external factors in the cultural/social milieu which precludes a preset order as in stage
theory. A study by Wiley (1986) indicated that teaching behaviors modeling fairness in discussion and behaviors promoted higher levels of moral reasoning in prison inmates.

Carol Gilligan with her volume, *In a Different Voice*, initiated the beginning of research into girls' and women's moral development. The stimulus for the research was Kohlberg's findings that women functioned at lower stages of moral development when compared with his initial all-male sample population. The empirical studies cited in her book revealed that the women described their decisions from a moral perspective of caring rather than a justice perspective. "For Gilligan morality is founded in a sense of concrete connection and direct response between persons, a direct sense of connection which exists prior to moral beliefs about what is right or wrong or which principles to accept" (Blum, 1988, p. 476). This personal, contextual perspective is quite different from the abstract, impersonal orientation of justice reasoning which characterizes Kohlberg's model. "For Kohlberg the ultimate moral concern is with morality itself - with morally right action and principle; moral responsiveness to others is mediated by adherence to principle" (Blum, pp. 476 - 477). The ethic of care sees caring action as an obligation rather than being justified by a universal principle. According to Noddings "we must 'justify' not-caring; that is, we must explain why, in the interest of caring for ourselves as ethical selves or in the interest of others for whom we care, we may behave as ones-not-caring toward this particular other" (Noddings, 1984, p. 95).

Gilligan identified three levels of moral reasoning from a care perspective: care as self-protective and self-concerned, care as altru-
istic, living up to others expectations in order to be accepted socially, and care as a balance of care for self and care for others. These levels were not empirically identified as evolving developmentally since the research design was not longitudinal but cross-sectional. According to Puka (1989) "her writings do not illustrate the holistic structure or functioning of care levels in any one respondent. ... Gilligan reconstructs the care sequence of development conceptually ... a reconstructed composite of responses across respondents" (p. 40 - 41).

Nona Lyons (1988) constructed an interview method based on real-life experiences of men and women and a coding system that identified their modes of self-definition and bases of moral choice. Though a longitudinal study, developmental changes in moral thinking and self-image were not specifically targeted in the analysis. What was found was that across the life span both care response and justice perspective was used as a bases for decision-making.

However, after age twenty-seven, women show increased consideration of rights in their conceptualization of moral problems or conflicts, although they still use considerations of response more frequently than rights in resolution of conflict (p. 39).

Developmental change was implied in the finding that there is a greater incidence of the care response in adolescent males than among the whole male sample. "In general, however, across the life cycle men's considerations of rights maintain greater consistency than do women's considerations of response" (p. 39). Two of the many implications evolving from the study will be highlighted. First, a morality of care, rather than being a temporary state of reasoning to be subsumed into a morality of justice advocated by Kohlberg, seems to be a life-
long concern. Second, research designs and methodologies must take into consideration sex as a variable. Lyons research "suggests both the difficulty in understanding sex difference and their importance to an improved understanding of theory and practice" (p. 43).

Moral Reasoning and Teacher Behavior

How the teacher views his/her role, the students' role, rights and responsibilities are manifested in teaching behaviors. That a teacher's level of moral reasoning influences teaching style has been demonstrated in several studies. Lubomudrov (1982) found a positive relation between moral development levels of teachers and their understanding of curriculum, teacher-student roles and management issues. The relationship between moral reasoning, autocratic teacher roles and democratic teacher roles was researched by Johnston and Lubomudrov (1987) in the elementary school setting. Teachers with DIT scores indicating highly developed patterns of reasoning about moral issues "had a more democratic view of teacher and student roles and saw rules as protecting individual students as well as the group's rights" (Johnston & Lubomudrov, p. 65). Teachers who saw their role as being in charge of the learning situation received DIT scores at the level of law and order maintenance. "The rules and the authorities who enforced the rules appeared inseparable" (Johnston & Lubomudrov, p. 71). These studies indicate that a relationship between complexity of moral reasoning and teachers' understanding of their duties does exist. Just how this finding fits into moral reasoning research can be clarified by Rest's four component model of moral reasoning/moral actions linkage.
Rest's Four Component Model of Moral Reasoning/Moral Actions

Augusto Blasi's review of research on moral cognition and moral action (1980) emphasizes the difficulty researchers were having at that time of linking moral cognition with moral action. "Morality is ultimately a characteristic of action, and moral development should lead to moral behavior, yet what actions are moral is not easily determined. ... the processes that fill the space between a concrete moral judgment and its corresponding action should be determined" (pp. 2, 40). Rest has developed a model for studying moral reasoning and moral actions that presupposes that the production of moral behavior is an interactive process involving a person's reasoning abilities, emotions and behavior within a particular situation. This study will be conducted within the framework of his four component model. He takes the point of view that "there are no cognitions completely devoid of affect, no affects completely devoid of cognitions, and no moral behavior that is independent of cognitions and affects ... although for research or theoretical purposes we can sometimes emphasize one or the other" (Rest, 1984, p. 19).

Component (1) involves becoming aware of the moral implications of one's behavior within a group or socially constructed situation; identifying possible courses of action; predicting or constructing mentally the consequences of each of these actions and deciding which action is more just, fair or morally right. Component (2) has the person deciding what ought to be done morally in the face of other conflicting value systems. Component (3) is characterized by the person deciding which action is the moral action and choosing to do the morally
right action rather than actions stemming from other values. Component (4) involves carrying out the action decided upon which involves self-regulation and executive skills. According to Rest the four components represent the processes involved in behaving morally not the general traits of people. Also, "since all four component processes co-determine behavior, the correlation of any one of them with behavior may not be high, but it is a mistake to conclude that the processes have nothing to do with behavior" (Rest, 1984).

Rest's Defining Issues Test (DIT), was constructed based on Kohlberg's theory of moral development. As an objective test, it identifies the subjects' ability to recognize which action of several alternatives given is the best moral action that can be taken when the choice is based on the principle of justice. Research using the DIT has indicated that there are behaviors which are definitely linked to moral reasoning (Malinowski, 1978; Marston, 1975; Rest, 1975; Sheehan, et al., 1981).

Thoma and Rest (1989), found a mild correlation between student teacher performance and their level of moral reasoning. In this study the teacher's ability to prioritize moral decisions, measured by the Utilization score (U score), was strongly significant in its relation to teacher behaviors, (.51). Welfel and Lipsitz (1983) noted that years of work experience had a mildly positive (.38) correlation with higher "P" scores (principled thinking) on the DIT. Other variables, gender and GPA, were not significantly correlated.
Teaching Style

Teaching practices, though multifaceted, are characterized by behaviors and ways of communicating that are unique to the instructor. Unique combinations of these practices have been called, teaching styles. Fisher and Fisher (1979) defined teaching style as the teacher's personal and unique repertoire of teaching behaviors and interpersonal interactions that persist even though curriculum design and instruction methods may change. Teaching style is a way of thinking about teacher behaviors and students' responses to these clusters of style behavior. "The concept of a teaching style is an analytic device that looks for connections between the way in which a teacher conceives of her mission in the classroom and the way in which students, on the whole, react to the way in which she deals with them on a day-to-day basis" (Schwartz & Merten, 1987, p. 352).

The process of developing a style of teaching over time requires a variety of decisions that reflect what an instructor believes will best benefit the student, the class as a group, and him/herself. The learner-centered or collaborative teaching style is the most widely advocated way of teaching adults according to adult education literature (Conti, 1985, p. 7).

Conti's teaching styles inventory is built on a model similar to Bennett's research with British elementary school teachers as reported in his 1976 book, Teaching Styles and Pupil Progress. Both surveys are
based on determining teacher behaviors that fall within two philosophical schools of education, Progressive and Traditionalist.

"Progressivism views education as having a dual function. In addition to promoting individual growth, its aim is to maintain and/or promote the good of society. Democracy, freedom, experience, responsibility, and participation are key words for progressives" (Conti, 1985 p. 10). The principles of adult learning advocated by progressivists like Dewey, Lindeman, Bergevin, and others emphasized the cooperative, collaborative learning environment as being most effective in assisting adults to learn. John Dewey in Experience and Education (1938) cautioned teachers not to impose their purposes and opinions upon the students in a dictatorial manner. "The way to avoid this danger ... is first, for the teacher to be intelligently aware of the capacities, needs, and past experiences of those under instruction..." (p. 85).

The traditionalists believe that "humans are controlled by their environment, the conditions of which can be studied, specified and manipulated. An individual's behavior is determined by the events experienced in an objective environment (Elias & Merriam, 1980, p. 83)". As a teacher-centered view of education, the instructor is the distributor of knowledge and is responsible for determining how the subject matter will be taught, what kinds of criteria will be used for grading, and the arrangement of the timetable for presentation of new material, for practice and memorization by students. Authority is centered in the instructor (Bennett, 1976, p. 38).

Bennett's study of teacher behaviors differentiated between progressive and traditional approaches to education by isolating eleven
basic behaviors that characterized each. The elements were translated into classroom behaviors within six major areas:

2. Teacher control and sanctions: degree of disciplinary rather than physical control.
3. Curriculum content and planning: allocation of teaching time, extent of time-tabling and homework, degree of pupil choice.
4. Instructional strategies: type of teaching approach.
5. Motivational techniques: whether intrinsic or extrinsic motivation is stressed.
6. Assessment procedures: type and quantity of evaluation. (Bennett, p. 38)

Schwartz and Merten's study (1987) of three teaching styles which they identified as nonpersonal, impersonal, and personal looked at how teachers with these styles regarded student achievement and performance. The nonpersonal teachers emphasized the role aspects of teaching in their interaction with students. The personal teaching style emphasized mutuality or reciprocity between students and teachers. The impersonal style emphasized a refusal to recognize the distinctly early-adolescent aspects of classroom behavior and required the students to "disassociate themselves from anything that is going on in their lives in order to pay attention to the teacher" (Schwartz & Merten, pp. 355, 358, 362). They concluded that nonpersonal and personal teaching styles emphasized achievement within the parameters of the pupils' developmental levels; impersonal style set high performance standards (based on national academic criteria) with little regard for the level of maturity of the students.
Conti bases his survey of teaching behaviors on the humanistic and progressive philosophies of Dewey, Lindeman and Knowles. His seven categories or factors in the Principles of Adult Learning Scale identify collaborative, learner-centered elements that reflect progressive teaching behaviors. Nonlearner-centered behaviors are teacher-centered.

The categories are:

1. Learner-Centered Activities: teacher-centered activity statements (12) that will receive "no" answers from instructors that support learner-centered instruction. Focuses on the location of authority in the classroom.
2. Personalizing Instruction: instructors plan a variety of activities that accommodate the students' learning needs.
3. Relating to Experience: Student's prior experiences are considered and utilized for learning. They consider basic questions about the nature of their society and how it affects them personally. Growth towards independence from stereotypes and unquestioned assumptions is encouraged.
4. Assessing Student Needs: Treating students as adults by conferencing and discussing learning needs and goals as perceived by the adult student.
5. Climate Building: An informal, friendly environment with acceptance of mistakes as part of learning discourages the competitiveness present in more behavioristic environs.
6. Participation in the Learning Process: Students are encouraged to develop their own goals as they relate to their learning needs. Students are also involved in developing criteria for evaluating their learning.
7. Flexibility for Personal Development: The teacher is a facilitator of the educational experience, learning is by discussion and discovery, the aim being personal growth.

(Conti, 1985, pp. 9 - 10)

Among the studies that have identified learner-centered and teacher-centered styles using the Principles of Adult Learning Scale was Conti's research of GED, ABE/ESL instructor teaching styles and the
adult student's preferences in regard to teaching practices. The instructors identified as collaborative and supportive with students' learning endeavors were most preferred by the ABE/ESL students. The traditional teacher-centered style was preferred by the GED students who learned better in the structured pre-test assessment, preparatory reading and exercises, and post-test format (Brookfield, 1986, p. 132). A study by Pearson (1980) of training and development managers indicated that ASTD professionals oriented to the Theory X (behavioristic) style of management were not as likely exhibit learner-centered teaching behaviors as were those ASTD professionals who subscribed to the Theory Y management style. Wiley (1986) studied the effects of learner-centered teaching style on moral reasoning development in prison inmates. The pre-/post-test design employed the Ethical Reasoning Inventory and the Principles of Adult Learning Scale. Analysis of covariance of teaching style and demographic variables with the ERI pretest scores as the covariate showed that learner-centered teaching style promoted moral reasoning development.

Teaching Styles and Student Perception

The students' frame of reference or perceptual field will affect how the instructor is perceived. Combs and Snygg in their book, Individual Behavior: A Perceptual Approach to Behavior, (1959), explain reality as each person's individually internal interpretation or assignment of meaningfulness to the everyday situation of the self and its environment. "Each one's behavior is determined not by the objective environment, but by a personal, individual way of perceiving which
is unique to that person and which is called the perceptual field" (p. 19). A study by Kerlinger and Pedhazur (1968) demonstrated that individuals with progressive attitudes toward education selected teachers with person-oriented traits, traits that are congruent with progressive educational beliefs. Those who had traditional educational beliefs chose teachers who exhibited teacher-oriented traits (p. 557).

Kidd (1959), in emphasizing the experiential background of the adult, notes that the adult student brings with him/her a large history of previous experiences. "Past experience may block, modify, or enhance ... it effects perception as well as how we solve problems and make decisions" (p. 46). These experiences also shape the student's conceptualization of the student/instructor relationship since they have been sources of perceptions forming the person's frame of reference. The nuances of this relationship is posited upon the instructor as the group leader of the social process of education. Dewey (1938) reiterates this principle when he states the second way to avoid being a classroom dictator is to allow the suggestion made to develop into a plan and project by means of the further suggestions contributed and organized into a whole by the members of the group. The plan, in other words, is a cooperative enterprise, not a dictation" (p. 85). This type interaction in a learning context will call upon the three sources of perception mentioned previously: a) all material things in the learning environment, b) experiencing of one's own total self, and c) interpersonal interaction.

Those who advocate the need-press model of H. A. Murray believe that personal and consensual perceptions are informed by needs which are
either met or impeded by what is happening in the internal and external environments. Murray defined need as "a nonobservable construct or intervening variable which belongs ... to the category of disposition concepts. It is a state, in short that is characterized by the tendency to actions of a certain kind" (Murray, 1951, p. 435). It is a construct inferred from observable behavior. Press is described as the external counterpart of internal personality needs (Stern, 1970, p. 7). Though events are external, each person has their own personal view of what is happening. Aggregates of individuals with similar views or common interests can experience similarities in environmental press. "The concept of press includes conditions that represent impediments to a need as well as those that are likely to facilitate its expression. ... Press are inferred from the social and physical characteristics of the environmental setting as perceived by the respondent" (Richman & Stern, 1979, p. 1).

Stern (1970) describes the interaction between needs and environmental press as complimentary to one another. An example he gives involves the need for affiliation which sets into motion certain behaviors by the person that will increase chances for meeting others. The environment the person engages has high press for interaction with others. The interactions between needs and press are not one-to-one or trait-by-trait; they are complex-by-complex sets of behaviors used adaptively by the individual to establish a balance of sorts between what they perceive to be their needs and what the environment they select provides to meet those needs.
CHAPTER 3
Methodology

Design of the Study

This study explored the possible relationship between three variables, principled level of moral (justice) reasoning, teaching style behaviors of instructors of adult students, and the influence of the relationship between these two variables on the classroom learning environment as perceived by the instructor's adult students. Since the research is aimed at discovering relationships among sociological and psychological variables in the real world social structure of the classroom an ex post facto or field study design was used. Kerlinger (1979) defines ex post facto research as "any research in which it is not possible to manipulate variables or to assign subjects or conditions at random. ... the basic logic of inquiry is fundamentally the same ... ... the conclusions are empirically not as strong" (p. 116) as in experimental studies. The researcher encounters several weaknesses inherent in this design namely, lack of control over the independent variable, sample randomness, problems of self-evaluation by subjects, and the risk of improper interpretation of data results. However, field studies such as this address the research problem onsite, as it occurs, has a theory orientation, and heuristic quality (Kerlinger 1964, pp. 371 - 389).

The Research Questions

The research questions were answered statistically by testing the null hypothesis. The question, the null hypothesis, and the instrument that measures the independent variable and dependent variables will be specified.
Question 1. Is there a relationship between developmental level of moral reasoning of instructors and their teaching style?

Null Hypothesis: There is no relationship between developmental level of moral reasoning of instructors and their teaching style.

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<td>Mean, SD Pearson correlation</td>
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<td>Teaching style</td>
<td>PALSB scores</td>
<td>Principles of Adult Scale</td>
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Question 2. Is there a relationship between level of moral reasoning of instructors, teaching style, and the students' perception of classroom environment?

Null Hypothesis: There is no significant relationship between principled moral reasoning of instructors, their teaching style, and the students' perception of classroom environment.

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Question 3: Are there differences in the students’ perceptions of the classroom environment related to instructor level of principled moral reasoning scores and teaching style scores?
Null Hypothesis: Differences in student perceptions of the classroom environment are not related to moral reasoning level scores or teaching style scores.

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Question 4: Is there a relationship between instructor principled moral reasoning scores (P scores) and Utilization (U scores) on The Defining Issues Test (DIT) and the subscale scores of the Principles of Adult Learning Scale?

Null Hypothesis: There is no significant relationship between instructor principled moral reasoning scores (P scores) and Utilization (U scores) on The Defining Issues Test and the subscale scores of the Principles of Adult Learning Scale (PALSB).

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<th>Statistic</th>
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<tr>
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<td>P scores</td>
<td>The Defining Issues Test</td>
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<td>Seven major characteristics of teaching</td>
<td>PALSB subscale scores</td>
<td>Principles of Adult Learning Scale</td>
<td>Pearson correlation</td>
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</table>

Question 5: Do The Defining Issues Test P scores differ between male and female instructors?
Null Hypothesis: There is no significant difference between the P scores of male and female instructors.

<table>
<thead>
<tr>
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<th>Data Source</th>
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<td>Demographic Survey</td>
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</tr>
<tr>
<td>Age range</td>
<td>Demographic Survey</td>
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</tbody>
</table>

Question 6: Do courses in philosophy and/or adult education at the graduate level make a difference in the scores of principled moral reasoning as measured by The Defining Issues Test and the instructors' teaching style as measured by the Principles of Adult Learning Scale?

Null Hypothesis 6a: There is no significant difference in P scores on The Defining Issues Test between subjects who have had a philosophy and/or adult education course(s).

<table>
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<th>Data needed</th>
<th>Data Source</th>
<th>Data Collection</th>
<th>Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of principled moral reasoning of P scores</td>
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<td>Demographic survey</td>
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</tr>
<tr>
<td></td>
<td>Adult education</td>
<td>Demographic survey</td>
<td></td>
</tr>
</tbody>
</table>

Null Hypothesis 6b: There is no significant difference in PALSE scores on the Principles of Adult Learning Scale between those who have had philosophy and/or adult education courses and those who have not.
Characteristics of the Population

The target population was identified as instructors of non-traditional adult students teaching in local post-secondary institutions and students in one of their classes. Cook and Campbell (1990) in discussing the difficulties of random sampling in field studies advised that "when target populations are specified it is necessary that research samples be 'representative' in some way" (p. 74). They also recommended obtaining opportunistic samples that "differ as widely as possible from each other. If each instance produced comparable effects, then one might begin to suspect that the effect would hold in many other kinds of schools" (p. 76). A wide range of conditions peculiar to adult education settings and adult learner schedules was represented in an attempt to achieve heterogeneity of the sample and also external validity (p. 76).

The representative institutions

The listed institutions represent a variety of adult education settings: a) university undergraduate and graduate programs, b) private colleges offering traditional four year degree programs and accelerated degree programs, c) undergraduate and graduate education in a military setting for officer and enlisted corps, and d) community college associate degree and certificate programs.

a) University of Nebraska, Lincoln - Offutt AFB Base Education program;
b) University of Nebraska, Omaha - The Continuing Education evening program and Offutt AFB Base Education program;
c) Bellevue College - day/evening classes and the BPS program in the Adult Continuing Professional Education department;

d) College of St. Mary - Weekend College - Lincoln;

e) College of St. Mary - Day, Evening & Weekend College - Omaha;

f) Metropolitan Community College - day and evening classes.

All offer a variety of programs and class scheduling (day, evening, and weekend programs) in order to make education for a degree more accessible to the adult learner who has many life responsibilities.

Permission to conduct the study was obtained from the respective school authorities. Listings of faculty were obtained from school catalogues, directories and schedules. Full-time and adjunct faculty taught at colleges other than their own institution, primarily in the evenings and on weekends. Therefore, faculty lists from the above institutions were double checked so that faculty would not be contacted twice. This tentative list of 194 faculty was reviewed by the appropriate school authorities for class cancellations or other changes before a final list was obtained. The population from which the final sample emerged consisted of 173 instructors.

The Sample Population

Sixty-seven faculty of the 173 canvassed responded. Sixty-five expressed a desire to be part of the study and two declined. The final sample consisted of 41 faculty who completed their surveys. Thirty-four (34) records were used in the data analysis because their Defining Issues Test (DIT) met reliability requirements, their Principles of Adult Learning Scale (PALS) questionnaire and the demographic surveys
were completed, and they returned their students' completed Classroom Environmental Index surveys.

There were 519 completed student surveys. The students attended primarily evening and weekend classes though some of these students attended day classes, too. Also, a small number of younger (below 21 years of age) students from traditional programs attended evening classes.

Characteristics of Volunteers in Field Design Research

Since the faculty and students involved in the study were volunteers who completed self-reports and personal perceptions, respectively, the characteristics of research study volunteers as identified by Rosenthal and Rosnow (1975) and reviewed in Borg and Gall (1983) were considered. The respondents who completed the research requirements might contribute to bias in the research. Characteristics of volunteers were arranged by decreasing confidence levels assigned to the possibility of biased self-report (Borg & Gall, 1983), in Clow, T. L., 1987, pp. 29 - 31).

Warranting Maximum Confidence

1. Volunteers tend to be higher in need for social approval than nonvolunteers.
2. Volunteers tend to be more social than the norm.

Warranting Considerable Confidence

3. Volunteers tend to be less authoritarian than nonvolunteers.
4. Volunteers tend to be less conforming than nonvolunteers when volunteering for research in general.
5. Volunteers tend to be more arousal seeking and unconventional.

Warranting Some Confidence

6. Volunteers tend to be more altruistic than nonvolunteers.
7. Volunteers tend to be more self-disclosing than nonvolunteers.

8. Volunteers tend to be higher in need for achievement than nonvolunteers.

9. Volunteers tend to be more anxious than nonvolunteers, especially when volunteering for standard, nonstressful tasks and especially if they are college students (Borg & Gall, pp. 252 - 253).

The first confidence level, warranting maximum confidence, seemed to relate to this study. The two characteristics falling in this category could contribute to bias since the difference between teacher self-reported teaching style and students' perceptions of instructor classroom behaviors was part of the design. This potential bias needed to be addressed since the faculty voluntarily completed the Principles of Adult Learning Scale and cooperated by asking their students to complete the Classroom Environmental Index on a voluntary basis. By their cooperation, the faculty could gain approval of the administration who endorsed the study and the students would gain approval of their instructors. The confidentiality of the study attempted to address this particular bias problem by assuring the participants that the administrators would not know who participated unless told by the participants. Providing the instructor sample with feedback of their teaching style and their students' score on the areas of the CETI was another way to encourage accurate self-report. Also, participation could have been ensured by the attractiveness of the incentive offered to those faculty respondents who completed all the research instruments. The effect of incentives on volunteer response rate has not been included in the categories of Borg and Gall. Some of the other characteristics falling within the other
categories may have affected their responses. However, the confidence levels of the remaining three were less, having the potential for contributing to an increasing amount of bias in field study design.

Instrumentation

Data for the independent variable, instructors' level of principled moral reasoning, was obtained using Rest's Defining Issues Test. Data for the dependent variables, teaching style and student perception of classroom learning climate, was obtained using Conti's Principles of Adult Learning Scale and Stern's Classroom Environment Index, respectively.

The Defining Issues Test

The Defining Issues Test (DIT) is a test of moral preference and recognition. It is an objective, paper and pencil test. The subject is asked to identify the crucial issues in six moral problems and judge personally in each case which are the important and significant issues that best contribute to solving the dilemma. The DIT uses a "P score" which is called principled moral reasoning, "represents the subject's reasoning about fairness issues" (Thoma, Rest, & Davison, 1987, p. 19). The score is arrived at by summing the weighted rank answers of stage 5 and stage 6. "...the DIT's P score locates a subject in terms of a continuous number representing the developmental continuum" (Rest, 1986, p. 5.1). The P score has a range of 0 through 95. "The U or utilizer score represents the relative utility of moral judgment information in decision-making about hypothetical moral dilemmas" (p. 4.15). The utilizer score is arrived at by an algorithm in which each DIT item is weighted and combined to produce action choice predictions. It is a
"method for identifying those subjects who are using concepts of justice in decision-making versus those subjects who are not using concepts of justice" (Rest, 1986, p. 171). Research on theUtilizer score is still in the experimental stage.

Reliability of the DIT was obtained by correlational studies with various versions of Kohlberg's test and the Comprehension of Moral Concepts test. "... the correlations go up to the .60s and .70s, averaging about .50" (p. 5.3). According to Rest, "the DIT has the most extensive data base yet collected on any single measure of moral judgment, and no other measure of moral judgment has demonstrated repeatedly such high reliability and validity" (Rest, in Maier, 1984).

Criterion group validity was established by testing graduate students (n=40) in moral philosophy and political science and ninth graders (n=270). Scores of the graduate students were expected to be higher than scores of the ninth graders. The principled moral reasoning mean score for the graduate students was 65; the ninth graders mean score was 20. The Defining Issues Test validity as a test for longitudinal development was studied in several groups over a four year period.

Several longitudinal studies are discussed in the 1979 book, Chapter 5, reporting significant upward trends over four years at three testings (F=20.1, p<.001) for the P score and the D score. Similarly, analyses of individual patterns of change show an upward trend (e.g., over four years 66% of the subjects move upward and only 7% move downwards). Cohort-sequential and time-sequential analyses indicate that this upward movement cannot be attributed to generational or cultural change, but rather can be attributed to individual ontogenetic change. Also, studies indicate that the longitudinal trends cannot be attributed to testing effects or sampling bias.

(Rest, 1990, pg.28)
"Among demographic variables, education is by far the most powerfully associated with DIT scores" (Rest, 1986, p. 7.1). The norms for the DIT were established using the variable, education, since it has the strongest correlation to the DIT. The norms used in this research are based on Rest’s work with college graduates (n = 270). The mean and standard deviation of 10 DIT indices are the norms for this group as reported in Rest’s 1986 DIT MANUAL (p. 7.2).

Principles of Adult Learning Scale

The Principles of Adult Learning Scale (PALS) is a 44 item Likert type scale composed of seven factors that describe learner-centered/teacher-centered teaching styles.

PALS is a summated rating scale with items that are approximately equal in assessing the degree of practitioner support of the collaborative mode. The sum of an individual's responses to the items can provide a score to indicate the degree of practitioner support of the collaborative teaching-learning mode when the score is interpreted in relationship to the normative scores established by this study (Conti, '79, p. 20).

Reliability has been established by test-retest methods. Construct validity was established by a national jury of adult education professors. "Content validity was established through field-testing in full-time public school programs. Criterion-related validity was confirmed by identifying the initiating and responsive actions in the items in PALS and then by comparing scores on PALS to scores on the Flanders Interaction Analysis Categories" (Conti, 1979). The correlations of .85, .79, and .82 were obtained between PALS and selected factors in Flanders Interaction Analysis Categories (FIAC). The test-retest method was used to determine its reliability. A coefficient of .92 was obtained (Conti, 1978, cited in Clow, 1987, p. 39). Factor analysis of
PALS items (Conti, 1983, p.9) using 778 cases produced seven discernible factors (the PALS subscales). Thirty-one items that comprise these factors loaded above .40; three loaded between .35 and .40; seven loaded between .30 and .35; three loaded below .30. The construct validity of PALS is supported by the factor analysis results.

"Scores [on PALS] may range from 0 to 220. The mean for the instrument is 146 with a SD of 20. These normative scores for PALS remain consistent across various groups (instructors) that practice adult education" (Conti, 1985, p. 8). Scores that are one standard deviation above the mean indicate learner-centered or collaborative teaching style. Those scores below one standard deviation indicate teacher-centered styles (Conti, 1986, p. 20). Mean scores for the seven factors are given in Appendix C.

PALS scores are obtained under seven factors which Conti concluded from his research were basic elements of an instructor's general teaching style in a classroom of non-traditional adult students. The seven factors are: 1) Learner-Centered Activities, 2) Personalizing Instruction, 3) Relating to Experience, 4) Assessing Student Needs, 5) Climate Building, 6) Student Participation in the Learning Process, 7) Flexibility for Personal Development. Conti (1985) provides the following descriptions for the seven factors. Learner-Centered Activities involve teaching behaviors "which allow initiating action by the student and which encourage students to take responsibility for their own learning" (p. 9). Instructors personalize instruction by utilizing a variety of instructional methods and developing learning objectives that take into consideration the students' individual motives and learning
abilities. "Instruction is self-paced. ... Cooperation rather than com-
petition is encouraged" (pp. 9 - 10). Factor 3, Relating to Experience,
means that instructors "plan learning activities that take into account
their students' prior experiences and encourage students to relate their
new learning" (p. 10) to their own every day experience. Through time
spent in individualized conferences and informal counseling the instruc-
tor can Assess Student Needs. "Then students are assisted in developing
short-range as well as long-range objectives" (p. 10) that will help
them in the learning process. The fifth Factor, Climate Building, in-
cludes facilitator activities that ensure an informal, friendly atmo-
sphere where dialogue and interaction with other students is encouraged.
"Periodic breaks are taken. ... Risk-taking is encouraged, errors are
accepted as a natural part of the learning process ... failures serve as
feedback to direct future positive learning" (p. 10). Participation in
the Learning Process, Factor 6, involves getting the students to "iden-
tify problems that they wish to solve and allow the students to partici-
pate in making decisions about the topics that will be covered in class.
...they also involve the students in developing the criteria for evalua-
ting classroom performance" (p. 10). Factor 7, Flexibility for Personal
Development, is "maintained by adjusting the classroom environment and
curricular content to meet the changing needs of the students" (p. 10).
Issues related to values are addressed in order to promote self-reflec-
tion on the part of the student, to stimulate understanding and personal
growth. See Appendix C for a breakdown of learner-centered and teacher-
centered items and a description of response scoring.
Classroom Environmental Scale

The Classroom Environmental Scale (CEI) is a measure of environmental press. In the adult education classroom there should be interactions and "rules" that, as perceived by the respondent, either facilitate the expression of needs or serve as impediments to needs. Stern's CEI is a 300 item survey. The items form 30 scales whose ratings have been factored into six subscales or first order categories (See Appendix D). The test can be split into two 150 item surveys and administered independently to split groups in the classroom. It is composed of statements describing either actions of the instructor and classmates or interactions with instructor and classmates. Each class of students in this research project was divided into two groups, group A answered items 1 through 150; group B answered items 151 through 300.

The CEI can be used to test students from grade 7 through graduate school "to examine relationships among such variables as classroom environment, teacher personality, teaching style, creativity, and other facets of the teaching-learning process" (Richman et al, 1979, p. 6). Scores are given for six first order factors, second order factors, and on thirty basic press scales. The six first order categories are: 1) Humanistic Intellectual Climate, 2) Group Intellectual Life, 3) Achievement Standards, 4) Personal Dignity, 5) Orderliness, and 6) Science. "The 6 first order environmental dimensions are combined to produce second order scores" (Richman, p. 8) in two areas, development press and control press. Development press scores represent the factors of humanistic intellectual climate, group intellectual life, achievement standards, and personal dignity. The control press area describes an
environment that reflects emphasis or deemphasis on orderliness, bureaucratic administrative procedures, and cautiousness. "High control press is associated with the absence of a press for science. (Orderliness, Non-science)" (Richman, p. 8).

Each item is answered as either True or False. Reliability coefficients in the six factors ranges from .68 to .83; in the Developmental and Control press factors the reliability is .83 and .74 respectively. Reliability coefficients for the thirty scales fall within the ranges of .17 (Fantasied achievement) and .80 in both Conjunctivity-Disjunctivity and Play-Work. The interrelation between need and press was validated by Stern's research on college culture which led to five culture factors into which students with certain needs fit: vocational, collegiate, expressive, intellectual and protective.

The cultures themselves, composites of student personality characteristics and environmental press, also correspond perfectly to the four subcultures proposed by Trow (1960). Trow's insight into the college setting led him to postulate two dimensions of student orientation: involvement with ideas and identification with their college. From these he was led to derive four subcultures: the academic, the collegiate, the nonconformist, and the consumer-vocational. These hypothesized entities have been confirmed, one might say, by the empirical evidence of the joint AI-CCL factor analysis. (Stern, 1970, p. 244).

The scales representing environmental press fell within the 5 third order factors of college culture. For information on normative data see Appendix D.

Data Collection

A pilot test was conducted during the summer quarter of 1991 using faculty and students of two colleges offering programs in management and business administration to military personnel at Offutt AFB, NE. The
Objectives of the pilot were: 1) to determine how complicated the procedure would be for recruiting faculty; 2) to determine whether or not there would be any response to the letter requesting the instructors to complete three surveys (a phone number was given in the letter); 3) to see how effective written instructions to the faculty were for taking their surveys; 4) to identify logistical problems that would be encountered with the faculty administering the CEI to their class of students; 5) to determine the best procedure for collecting both faculty and student surveys while not imposing on college administrative personnel; and, 6) to pinpoint any improvements or corrections that needed to be made on the demographic survey to be completed by the faculty.

Ten instructors were contacted by letter that included an enclosed self-addressed coded postcard which they would fill out and return as an indication of their willingness to participate. The letter explained the purpose of the study, the time element involved, where to pick up and return their packets, and that approval had been obtained from the area directors. An incentive of $5.00 was offered. Six instructors returned the postcards. These instructors received two packets each, their survey packet containing the DIT, PALS, the demographic survey, instructions on where to return the packet, and a #2 pencil; the students' packet containing general instructions for administering the instrument, the appropriate number of CEI's divided into parts I and II, bubble sheets, and the correct number of #2 pencils. Five of the instructors completed their packet correctly. Four of the instructors had their students on a volunteer basis participate in the study. Two
instructors contacted me personally and requested assistance. One instructor left a written message with administrative personnel that due to unforeseen problems participation in the study was not possible. Each instructor received the incentive.

Evaluation of the pilot results yielded the following conclusions:

1) Five out of the ten instructors called me for further explanation which was helpful in recruiting them;
2) the written instructions were modified for the fall study based on the questions raised by the pilot test sample;
3) the instructions for completing the surveys appeared to be effective since those returned were in correct form;
4) the completed surveys were returned by the respondents to each of the college's office and placed in a special container with my name on it. A convenient survey return procedure would need to be established at each of the colleges;
5) there were some changes that needed to be made in the demographic survey.

When the 1991 Fall semester began an initial announcement that introduced the study, the researcher, and provided statements of support from the program directors was distributed to a faculty population (N = 173) during the first week. At this time each administrative assistant in the office responsible for sending communications to the faculty was contacted, an explanation given about the study, and a container left for faculty to leave their packets. During the third week of the semester/quarter another mailing was sent out to the faculty. This mailing consisted of a letter explaining the purpose of the study,
assuring there would be complete confidentiality of the results, the
surveys to be used, availability of their scores, and the incentive
they would receive for participating, a gift entertainment coupon book
and a report to them on their scores and the interpretation of the
scores. Enclosed was a self-addressed coded postcard. The coding
number consisted of an assigned faculty number, two digits, and an
institutional number, three digits, totaling five digits. The postcard
was designed to obtain the following information: whether or not they
would participate, whether or not they wanted their survey results, the
number of students in the class that would be participating and a
mailing address. Sixty-five positive responses were received.

Two weeks later a second mailing of 108 flyers was sent to the
non-respondents of the population. This flyer was also self-addressed
and coded with a format identical to the postcard except for a brief
message. As soon as a response to participate was received faculty
survey packets were either delivered through the respective institutions
mail rooms or by postal service. All of the surveys in the faculty
packet were coded to match their mailed-in response postcard. Also,
each CEI answer sheet was coded with their instructor's code. Since the
CEI surveys were not yet available the faculty respondents were advised
to complete their surveys and the CEI packet would be delivered as soon
as possible at a later date which they were. Both sets of packets were
delivered by October.

Data Analysis

The Statistical Packages for the Social Sciences (SPSSx) was used
to analyze the statistical data. The probability level set for this
sample was p<.05. The Defining Issues Test (DIT) booklets were sent to the Center for the Study of Ethical Development to be scored. The Principles of Adult Learning Scale (PALSB) was hand scored. The Classroom Environmental Index (CEI) was scored by computer. The demographic survey instrument was coded for computer entry. All data scores were entered onto scanning sheets from which the raw data file was compiled.

Frequency distributions, means, and standard deviation procedures were performed on all the data. Correlations of The Defining Issues Test (DIT) P and U scores with total scale and sub-scale scores on the PALSB and the CEI were performed. Respondents' scores were compared to normative means and standard deviations given for each instrument. Step-wise regression was performed to determine the amount of variance that principled moral reasoning level (P scores) and action choices (U scores) could account for in the teaching style variable. A t-test of mean scores of CEID and CEIC was conducted to detect significant differences between the scores when their instructors had high or low DIT scores or reported their teaching style as learner- or teacher-centered. ANOVA was performed to determine if differences existed between the DIT P scores due to gender, level of education and age range. One-way anovas were conducted to detect significant differences in DIT P scores and PALSB scores due to post degree education courses in philosophy and adult education.
CHAPTER 4

RESULTS

The results section is organized and presented by hypotheses related to the research questions following a descriptive analysis of the sample population. The discussion of the descriptive data related to the sample population includes 1) a summary of sample response, 2) a presentation of five demographic characteristics used in the research project, and 3) presentation of the descriptive statistics of the subjects’ responses on the questionnaires measuring the independent variable, level of principled moral reasoning; and, the two dependent variables, teaching style and student perception of the classroom learning environment. Results of the research questions are then presented.

The instrument used to measure the independent variable was The Defining Issues Test, referred to as, the DIT. The DIT scores used in this study were the principled moral reasoning score (P score) and the utilization (choice of action) score (U score). Teaching style was measured using the Principles of Adult Learning Scale or PALS (variable label- PALSb). Student perception of classroom learning environment was measured using the Classroom Environmental Index or the CEI. Two variable labels were used to refer to the CEI, CEID and CEIC.

Description of the Sample Population

Summary of Sample Response

Postcard and flyer mailings recruited a total of 65 positive responses and two negatives out of a target population of 173 instructors. The total number of responses was 67, a 39% return. Thirty-eight percent of the population gave positive responses.
Table 1 illustrates the results of postcard and flyer mailings.

Table 1

<table>
<thead>
<tr>
<th>Number of responses to postcard &amp; survey packets</th>
<th>Mailed</th>
<th>Received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postcards to faculty</td>
<td>173</td>
<td>67</td>
</tr>
<tr>
<td>Faculty &amp; student survey packets</td>
<td>65</td>
<td>45</td>
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</tbody>
</table>

Sixty-five faculty packets accompanied by student packets containing The Classroom Environment Index questionnaire were delivered to the respondents. Forty-five packets were returned by November 15, 1991, the return date deadline. Four of the packets were not complete and were subsequently rejected from the sample population leaving a total of 41 completed packets. Seven of the 41 faculty Defining Issues Tests did not meet test criteria and these were removed leaving a total of 34 completed and acceptable packets or 52% of the 65 that returned packets for data analysis. Of the original population (173) 19.5% participated the study.

Data results biased by response rate was considered. T-tests of each week's DIT P scores showed no significant differences at p<.05 between the mean scores for week one and week two (t=-1.26, df=11), week one and week three (t=1.09, df=9), and week one and week four (t=2.03, df=7). Table 2 illustrates weekly t-test results.

Demographic Characteristics of the Sample

Four demographic characteristics of the respondents were utilized in this study. Table 3 summarizes these demographic variables. Ninety percent of the respondents had either a Masters or Doctoral degree. Eight sample subjects (23%, n=34) had taken a graduate course in adult
Table 2

T-test Results of Differences between Mean Scores of Defining Issues Test and Rate of Return

<table>
<thead>
<tr>
<th>Week</th>
<th># returns</th>
<th>Mean</th>
<th>T-statistic</th>
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</thead>
<tbody>
<tr>
<td>First</td>
<td>20</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Second</td>
<td>9</td>
<td>52.13</td>
<td>-1.26</td>
</tr>
<tr>
<td>Third</td>
<td>3</td>
<td>47.15</td>
<td>1.09</td>
</tr>
<tr>
<td>Fourth</td>
<td>2</td>
<td>36.65</td>
<td>2.03</td>
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</table>

(n=34)
Table 3

Demographic Variables Utilized in the Research Questions

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value label</th>
<th>f</th>
<th>percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of education</td>
<td>Bachelors degree</td>
<td>2</td>
<td>5.9</td>
</tr>
<tr>
<td></td>
<td>Masters degree</td>
<td>19</td>
<td>55.9</td>
</tr>
<tr>
<td></td>
<td>PhD/EdD</td>
<td>8</td>
<td>23.5</td>
</tr>
<tr>
<td></td>
<td>Doctor of Jurisprudence</td>
<td>4</td>
<td>11.3</td>
</tr>
<tr>
<td></td>
<td>Highschool diploma</td>
<td>1</td>
<td>2.9</td>
</tr>
</tbody>
</table>

| Post degree education           | Philosophy                   | 2   | 5.9     |
|                                 | Adult Education              | 8   | 23.5    |
|                                 | Both                         | 3   | 8.8     |
|                                 | None                         | 21  | 61.8    |

| Age ranges                      | 20 - 29 years                | 2   | 5.9     |
|                                 | 30 - 39 years                | 7   | 20.9    |
|                                 | 40 - 49 years                | 12  | 35.3    |
|                                 | 50 - 59 years                | 11  | 32.4    |
|                                 | 60 + years                   | 2   | 5.9     |

| Gender                          | Male                         | 23  | 67.3    |
|                                 | Female                       | 11  | 32.7    |
education, two (6%) in philosophy, three (9%) in both subjects and 21, (62%) had not taken a course in either subject. All of the sample’s demographic characteristics are given in Appendix A.

Descriptive Statistics of Independent and Dependent Variables

Descriptive statistics for the scores of the independent variables, P scores and U scores of the Defining Issues Test, and the dependent variables, teaching style scores of the Principles of Adult Learning Scale with its subscale scores, and the Classroom Environmental Index scores are presented in Table 4.

The principled moral reasoning (P) scores and utilization (U) scores in this study’s sample were above the norm mean scores. This sample’s mean (P) score was 48.51 (SD = 17); the mean (U) score, 0.21 (SD = .14). The (U) score standard deviation was considerably higher than the norm, indicating greater variance of scores from the mean in this sample than in the normative group. Normative data of the P and U scores reported by Rest (1986) for college graduates was determined by testing 270 graduates with the Defining Issues Test. The resulting mean for the DIT (P) score was 44.85 (SD = 15.06); the DIT (U) score mean was .094 (SD = .03), (p. 7.2).

The sample’s mean score on the Principles of Adult Learning Scale was (107.82; SD = 18.61), much lower than the Conti’s norm mean of 146 and well below the 2nd percentile score of 113. The mean score of 107 was over one standard deviation (-1.95) below the sample mean indicating that this faculty sample consistently practiced a teacher-centered style of classroom management (Conti, 1986, p. 20).
Table 4

Mean Scores of The Defining Issues Test, Principles of Adult Learning Scale & its Subscales, and The Classroom Environmental Index (n=34)

<table>
<thead>
<tr>
<th>Variable Label</th>
<th>Mean</th>
<th>SD</th>
<th>Norm X &amp; SD</th>
</tr>
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<tbody>
<tr>
<td><strong>Independent Variable</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Justice based principled reasoning</td>
<td>DITP</td>
<td>48.51</td>
<td>17.00</td>
</tr>
<tr>
<td>Priority of justiced-based choices for action</td>
<td>DITU</td>
<td>0.21</td>
<td>0.13</td>
</tr>
<tr>
<td><strong>Dependent Variables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PALS overall teaching style score</td>
<td>PALS</td>
<td>107.82</td>
<td>18.88</td>
</tr>
<tr>
<td><strong>PALS Subscales</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learner-centered activities</td>
<td>PICA</td>
<td>40.64</td>
<td>6.49</td>
</tr>
<tr>
<td>Personalized instruction</td>
<td>PI</td>
<td>22.03</td>
<td>4.80</td>
</tr>
<tr>
<td>Instruction related to experience</td>
<td>PRE</td>
<td>9.15</td>
<td>4.91</td>
</tr>
<tr>
<td>Assess student instructional needs</td>
<td>PASN</td>
<td>8.35</td>
<td>3.54</td>
</tr>
<tr>
<td>Creates climate for learning</td>
<td>PCB</td>
<td>3.62</td>
<td>1.81</td>
</tr>
<tr>
<td>Encourages student to plan</td>
<td>PPLE</td>
<td>10.77</td>
<td>3.95</td>
</tr>
<tr>
<td>individual learning goals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flexibility of instruction for student development</td>
<td>PFPD</td>
<td>13.41</td>
<td>3.66</td>
</tr>
</tbody>
</table>

CLASSROOM ENVIRONMENTAL INDEX (n=519)

<table>
<thead>
<tr>
<th>Variable Label</th>
<th>Mean</th>
<th>SD</th>
<th>Norm X &amp; SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom conducive to student development</td>
<td>CEID</td>
<td>119</td>
<td>10.62</td>
</tr>
<tr>
<td>Classroom management emphasizing teacher control</td>
<td>CEIC</td>
<td>50</td>
<td>4.08</td>
</tr>
</tbody>
</table>
Only two factors of the seven subscales had mean scores that were either equal to or above the applicable normative data. The first factor, (PCLA) Practices Learner-centered Activities, had a mean score of 40.64 (SD = 6.4) which was .36 standard deviations above the norm mean of 38 (SD = 8.3). The second factor, (PFPD) Instructor Flexibility that Encourages Student Personal Development, had a mean score of 13.41 (SD = 3.6) which was comparable to this factor’s norm mean score of 13 (SD = 3.9). Personalizing Instruction, (PI), was -1.32 standard deviations from its norm mean score of 33. Assessing Student Needs, (PASN), was -1.66 standard deviations below its norm mean of 14. Encourages Student Participation in Learning Process, (PPLE), was -1 standard deviation below its norm mean of 13. Relating Learning in Class to Life Experiences, (PRE), was -2.57 standard deviations below its norm mean of 16. Climate Building for Learning, (PCB), was -4.13 standard deviations below the factor’s norm mean score of 16.

The Classroom Environmental Index survey administered to the students had two scores representing two Areas that are composites of scores from six first order factors. Development Press, reflected by Area 1 scores, consisted of the first four first order factors: humanistic intellectual climate, group intellectual life, achievement standards, and personal dignity. The student sample’s mean score in Area 1 (CEID) was 118.87 (n = 519; SD = 10.62) and -.8 standard deviations below the norm mean of 138.16 (SD = 24.61). Area 2, Control Press, consisted of the last two first order factors: orderliness and science. The students’ mean score for Area 2 was 49.77 (SD = 4.08) and was .5 standard deviations above the norm mean of 43.25 (SD = 11.32).
Findings Related to the Research Questions

The questions asked in this research project were concerned with linkage of principled moral reasoning level with teaching behaviors that constitute two styles of teaching identified as learner-centered and teacher-centered, or a combination of both in which neither style is consistently manifested. Of secondary interest was the students' perception of their instructors' teaching style which was assumed to be of influence on the classroom psychological and physical environment.

**Question 1:** Is there a relationship between developmental level of moral reasoning and faculty teaching style?

The above question was tested with following null hypothesis.

**Null Hypothesis 1:** There is no significant relationship between developmental level of moral reasoning and teaching style.

The findings related to this hypothesis were achieved by calculating the Pearson correlation coefficients of the independent variable's principled reasoning score (P score) and the utilization score (U score) and the dependent variable, teaching style (PALSb). The correlation between the independent variable, (P score), and the dependent variable, teaching style (PALSb), was moderately significant ($r = .40, p<.05$). Therefore, the null hypothesis was rejected.

Table 5 illustrates the correlations between the independent variable P and U scores and dependent variable PALSb teaching style scores.
Table 5

Correlation between The Defining Issues Test Scores (P & U), Principles of Adult Learning Scale (PALS), Classroom Environment Index Scores (CEID & CEIC)

<table>
<thead>
<tr>
<th></th>
<th>P</th>
<th>U</th>
<th>CEID</th>
<th>CEIC</th>
<th>PALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>P Score</td>
<td>1.000</td>
<td>.02</td>
<td>.08</td>
<td>.07</td>
<td>.40*</td>
</tr>
<tr>
<td>U Score</td>
<td>1.000</td>
<td>-.11</td>
<td>-.03</td>
<td>-.13</td>
<td></td>
</tr>
<tr>
<td>CEID</td>
<td>1.000</td>
<td></td>
<td>-.19</td>
<td>-.20</td>
<td></td>
</tr>
<tr>
<td>CEIC</td>
<td>1.000</td>
<td></td>
<td></td>
<td>-.10</td>
<td></td>
</tr>
</tbody>
</table>

*p < .05, two-tailed. (n=34)
However, the mean score for the Principles of Adult Learning Scale indicated that a teacher-centered style was predominant in this sample. Johnston and Lubromudrov's (1987) study of democratic and authoritarian teacher behaviors demonstrated a relationship of high principled reasoning scores to democratic teaching behaviors. Findings in this present study differ from their 1987 report. Hilton's study (1989) of teacher affect and student perception of teacher affect, indicated there was no significant relationship between the P score and Factor 3 (democratic behaviors by the teacher). This study shows a correlation between principled moral reasoning scores and teacher-centered style which emphasizes the authority of the teacher as the manager of the learning environment.

Because there was a moderately significant correlation between the P score and the teaching style score regression analysis was performed to identify the central tendency of the relationship between level of principled moral reasoning (P) scores and teaching style scores. The DIT's utilization (U) scores also were entered into the equation to determine if they too, affected the scores of the dependent variable, teaching style. Table 6 shows an increase in the variance in The Defining Issues Test P and U scores that is associated with the dependent variable, teaching style (PALSB).

The variance accounted for in teaching style by the P scores in Step 1 was significant, $F(1,32) = 6.14, p < .05$. Variance in teaching style due to the U score (action choice) was significant, $F(2,31) = 3.4, p < .05$. Variance accounted for by the variable P (principled moral reasoning) x U (action choice) was significant, $F(3,30) = 3.82, p < .05$. 
Table 6

Step-wise regression analysis: Dependent variable = teaching style

<table>
<thead>
<tr>
<th>Variables</th>
<th>R</th>
<th>R²</th>
<th>df</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>P score</td>
<td>0.40</td>
<td>0.16</td>
<td>1/32</td>
<td>6.14*</td>
</tr>
<tr>
<td>U score</td>
<td>0.42</td>
<td>0.18</td>
<td>2/31</td>
<td>3.04*</td>
</tr>
<tr>
<td>P x U (mediating variable)</td>
<td>0.53</td>
<td>0.28</td>
<td>3/30</td>
<td>3.82*</td>
</tr>
</tbody>
</table>

*p < .05, one-tailed. (n=34)
R square was increased from .16 in Step One to .28 in the third step when U scores (action choices) were combined as a moderator with the principled thinking scores as a new variable, (PxU). Though Step 3 in the regression model indicates there is an improvement in the linear equation that can describe the central tendency in the relationship between the PxU scores of the DIT with teaching style scores, the associated variance is not large enough to reliably predict teaching style in this study sample. Table i in Appendix E demonstrates the incremental changes in variance as the U scores and the PxU variable were added in the regression equation. These changes were not significant statistically.

**Question 2:** Is there a relationship between principled moral reasoning of instructors, teaching style, and the students' perception of classroom environment?

**Null Hypothesis 2:** There is no significant relationship between principled moral reasoning of instructors, their teaching style, and the students' perception of classroom environment.

The findings related to this null hypothesis were achieved by calculating the Pearson correlation coefficients between the independent variable P and U scores, and the dependent variables of student perception, CEID or Press for Development score and CEIC or Press for Control score (Table 5, p. 63). The correlation of P scores with CEID and CEIC scores was extremely low: P scores with CEID, r=.08; CEIC, r=.07. There was low negative correlation between the teaching style score, PALSB, and the student perception scores: PALSB with CEID, r =-.20; CEIC, r=-.10. There was no significant relationship between
the variables specified in the null hypothesis; therefore, the null hypothesis was accepted.

**Question 3:** Are the differences in the students’ perceptions of the classroom environment related to instructor level of principled moral reasoning scores and teaching style scores?

**Null Hypothesis 3:** Differences in students perceptions of the classroom environment are not related to moral reasoning level scores or teaching style scores.

The findings related to this null hypothesis were achieved by conducting a series of t-tests for differences in the mean scores of the dependent variables measuring student perception of classroom developmental press (CEID) and control press (CEIC) when compared with levels of principled moral reasoning and the two teaching styles.

T-tests for significant differences between the mean scores of student perception of classroom environments encouraging either student development (CEID) or teacher control (CEIC) when their instructor has either a high DIT P scores (scores of 51.7 through 73.3) or low P scores (scores of 46.7 through 11.7) were performed. There was no significant difference (t = -1.20, df=32; p>.05) between mean scores for student perceptions of classroom learning environments of instructors with either high or low DIT P scores. Based on these data the null hypothesis was accepted.

Table 7 illustrates the CEID Area 1, Development Press, mean scores (CEID = 116.69), as they are configured with Group 1, low DIT P scores, and Group 2 (CEID = 121.06), high DIT P scores.
Table 7

T-test for Difference in Student Perception of Development Press in Classroom Environments of High & Low Groups of Instructor DIT P Scores

<table>
<thead>
<tr>
<th>P Scores</th>
<th>n</th>
<th>CEID Mean</th>
<th>SD</th>
<th>t</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>17</td>
<td>116.69</td>
<td>10.06</td>
<td>-1.20</td>
<td>.24</td>
</tr>
<tr>
<td>Group 2</td>
<td>17</td>
<td>121.06</td>
<td>11.02</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 8

T-test for Difference in Student Perception of Control Press in Classroom Environments of High & Low Groups of Instructor DIT P Scores

<table>
<thead>
<tr>
<th>P Scores</th>
<th>n</th>
<th>CEIC Mean</th>
<th>SD</th>
<th>t</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>17</td>
<td>49.75</td>
<td>4.57</td>
<td>-.03</td>
<td>.98</td>
</tr>
<tr>
<td>Group 2</td>
<td>17</td>
<td>49.79</td>
<td>3.67</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Group 2, high DIT P scores, had a mean score (121) for development press that was higher than the student samples' CEID total mean score (118). The CEID mean of 121 in this t-test, though below the norm mean, indicates a possible trend in this sample towards perception of development press in classrooms of instructors with high DIT P scores. Table 8 illustrates the CEI's Area 2, Control Press (CEIC), mean scores as they were configured with Group 1 (49.75), low DIT P scores, and Group 2 (49.79), high DIT P scores. There was no significant difference in the two groups' CEIC mean scores (t=-.03, df=32; p>.05). Based on this data the null hypothesis was accepted.

A t-test performed to detect significant differences between student perception mean scores on the CEID, Area 1-Development Press, of learner-centered classroom environments and teacher-centered classroom environments, Table 9, revealed that in this sample there was no significant difference (t = 1.38, df=32, p>.05) between the mean score (CEID 114) of student perceptions of learner-centered instructors' classroom environment or teacher-centered instructors (CEID 120) and their classroom environment. Based upon these findings the null hypothesis was accepted. The CEID mean (120) associated with teacher-centered style was higher for perceiving developmental aspects in the classroom than the CEID mean (114) associated with learner-centered style.

Table 10 gives the results of a t-test for differences between the CEIC means scores of students' perceptions of classroom environments of the teacher-centered or learner-centered teaching styles of their instructors. There is no significant difference (t = -.14, df=32,
Table 9

T-test for Difference in Student Perception of Developmental Press in the Classroom Environment of Learner-centered/Teacher-centered Styles

<table>
<thead>
<tr>
<th>PALS Teaching Style</th>
<th>n</th>
<th>CEID Mean</th>
<th>SD</th>
<th>t</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher-centered</td>
<td>27</td>
<td>120</td>
<td>9.69</td>
<td>1.38</td>
<td>.18</td>
</tr>
<tr>
<td>Learner-centered</td>
<td>7</td>
<td>114</td>
<td>13.35</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 10

T-test for Difference in Student Perception of Control Press in the Classroom Environment of Learner-centered/Teacher-centered Styles

<table>
<thead>
<tr>
<th>PALS Teaching Style</th>
<th>n</th>
<th>CEIC Mean</th>
<th>SD</th>
<th>t</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher-centered</td>
<td>27</td>
<td>49.73</td>
<td>3.77</td>
<td>-.14</td>
<td>.89</td>
</tr>
<tr>
<td>Learner-centered</td>
<td>7</td>
<td>49.94</td>
<td>5.46</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
p > .05) between the mean scores of student perceptions of the classroom environment of instructors with teacher-centered teaching style (49.73) or learner-centered teaching style (49.94). Based upon these data, the null hypothesis was accepted.

The students' perception of a controlled classroom environment (CEIC mean score = 49.73) coincided with the teacher-centered teaching style of this faculty group. However, the classroom environment of instructors identified as practicing learner-centered instruction continued to be perceived, according to the students' CEIC mean scores (49.94) for the learner-centered teaching style, as a controlled learning environment. Such a result would agree with the over-all low mean score (119) for Area 1 - Development Press and the high Area 2 - Control Press student sample mean score (50). There was a perception of low development press and high control press in learner- and teacher-centered learning environments. These findings seemed to corroborate the overall student sample mean score (CEIC = 50) for perceiving teaching styles that indicated teacher control of the learning environment. The difference in group sizes related to teaching styles may be contributing to the difficulty of detecting a significant difference between mean scores.

Question 4: Is there a relationship between instructor principled moral reasoning scores (P scores) and Utilization (U scores) on the Defining Issues Test (DIT) and the subscale scores of the Principles of Adult Learning Scale?
Null Hypothesis 4: There is no significant relationship between instructor principled moral reasoning scores (P scores) and utilization scores (U scores) on the Defining Issues Test (DIT) and the subscale scores of the Principles of Adult Learning Scale (PALSB).

The findings related to this hypothesis were achieved by calculating the Pearson correlation coefficients for the independent variable, principled moral reasoning/utilization, and the dependent variable, Principles of Adult Learning Scale's seven subscales. Table 11 presents the correlations of the subscales of the Principles of Adult Learning Scale with the principled reasoning scores (P scores) and utilization scores (U scores) of The Defining Issues Test. The subscale, Personalized Instruction, was significantly correlated with the DIT principled reasoning "P" score. The correlation of .45 was significant at the .01 level. The subscale, "Encourages student to plan learning goals", was significantly correlated with the DIT utilization "U" score.

The negative correlation of the subscale, Encourages Student to Plan Learning Goals, indicated that the higher the utilization scores on the DIT, the lower the scores on the PPLE subscale of the PALS questionnaire. The negative correlation of -.40 was significant at the .05 level. Based upon these data the null hypothesis was rejected.

The moderate correlation of the Personalized Instruction subscale with the DIT principled moral reasoning scores could be interpreted two ways. First, in spite of the sample's predominantly teacher-centered style this correlation indicated a possible tendency of the instructors to encourage cooperation rather than competition in the classroom; to
Table 11

Pearson Correlation Coefficient Matrix of Defining Issues Test P scores and U scores and Scores on the Subscales of the Principles of Adult Learning Scale

<table>
<thead>
<tr>
<th>Subscales</th>
<th>Defining Issues Test (DIT)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>P scores</td>
</tr>
<tr>
<td>Learner-centered activity (PLCA)</td>
<td>.17</td>
</tr>
<tr>
<td>Personalized instruction (PI)</td>
<td>.45**</td>
</tr>
<tr>
<td>Instruction related to exp. (PRE)</td>
<td>.25</td>
</tr>
<tr>
<td>Assess student instructional needs (PASN)</td>
<td>.22</td>
</tr>
<tr>
<td>Creates climate for learning (PCB)</td>
<td>.21</td>
</tr>
<tr>
<td>Encourages student to plan learning goals (PFLE)</td>
<td>.14</td>
</tr>
<tr>
<td>Flexible instruction for std. development (PFPD)</td>
<td>.34</td>
</tr>
</tbody>
</table>

* p < .05; ** p < .01; two-tailed significance (n=34)
plan varieties of presentation methods; and to allow the students to pace themselves (Conti, 1985). This type of behavior is consistent with principled moral reasoning considerations of organizing activities by consensus, making sure that everyone, at one time or another, is considered in the planning and organizing process of activities; and that basic rights as students and individuals are upheld (Rest, 1990, p. 12).

The second approach acknowledges that the Personal Instruction (PI) factor has a high correlation, .85 at the .01 level, with the total PALS score (see Table ii, Appendix E). This significant correlation may indicate that conceptually the items in the PI factor were related to items in the other six factors whose scores make up the sum total of the PALS summated score. Therefore, the correlation of $r = .45$ resulted.

**Question 5:** Do The Defining Issues Test P scores differ between male and female instructors?

**Null Hypothesis 5:** There is no significant difference between the P scores of male and female instructors.

The findings related to this hypothesis were achieved by calculating the Pearson correlation coefficients for P scores with the demographic variable, gender. Second, an analysis of variance was conducted to test for the effects of gender, level of education and age on DIT P scores.

A moderate correlation coefficient of $r = .43$ between principled moral reasoning level and gender was significant at the .01 level. The analysis of variance showed that gender differences had a significant ($F=4.71$, df=1,32; $p<.05$) effect on DIT P scores (Table 12). Based upon these data the null hypothesis was rejected.
Table 12

Analysis of Variance of DIT P Scores by Instructor Gender, Level of Education & Age Range

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main effects</td>
<td>4008.81</td>
<td>9</td>
<td>445.42</td>
<td>1.93</td>
</tr>
<tr>
<td>Gender</td>
<td>1084.77</td>
<td>1</td>
<td>1084.77</td>
<td>4.71*</td>
</tr>
<tr>
<td>Level of education</td>
<td>2148.59</td>
<td>4</td>
<td>537.15</td>
<td>2.33</td>
</tr>
<tr>
<td>Age range</td>
<td>83.04</td>
<td>4</td>
<td>20.76</td>
<td>.09</td>
</tr>
<tr>
<td>Explained</td>
<td>4008.81</td>
<td>9</td>
<td>445.42</td>
<td>1.93</td>
</tr>
<tr>
<td>Residual</td>
<td>5529.02</td>
<td>24</td>
<td>289.03</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>9538.02</td>
<td>33</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p<.05
Instructor level of education \((F=2.33, \text{df} = 4,28; p>.05)\) and age ranges \((F=.09, \text{df}=4,28; p>.05)\) did not have a significant effect on DIT \(P\) scores.

The magnitude of the difference in \(P\) scores by gender was studied by Thoma (1984). "Across all studies \([56 (n =6863)]\) less than one-half of 1 percent of the variance in DIT scores is attributable to gender. ... While these findings are important with respect to charges of a gender bias on measures of moral judgment, the size of the effect is trivial..." (Rest, 1986, p. 113). Rest also recommends in his DIT Manual that when gender differences do occur other variables should be checked (Rest, 1986, p. 7.5) The suggested variables were education level and age range.

Ninety-one percent of this sample of instructors had graduate degrees. In spite of the homogeneity of the sample with respect to level of education, the 11 female instructors’ mean \(P\) score of 59 on the The Defining Issues Test was significantly different from the 23 male instructors’ mean \(P\) scores of 44. Other variables may be contributing to this difference that have not been identified in the research literature.

**Question 6:** Do courses in philosophy and/or adult education at the graduate level make a difference in the scores of principled moral reasoning as measured by The Defining Issues Test and the instructors teaching style as measured by the Principles of Adult Learning Scale?

Two null hypotheses were tested to answer this exploratory question.
Null Hypothesis 6a: There is no significant difference in P scores on The Defining Issues Test between subjects who have had a philosophy and/or adult education course(s).

The findings related to this hypothesis were achieved by conducting a one-way analysis of variance test for effects of taking courses in philosophy, adult education or both on the subjects mean scores of principled moral reasoning (P scores). A one-way anova (Table 13) indicates no significant difference ($F = .96, df = 3,30; p>.05$) in principled moral reasoning scores between groups with post degree education in philosophy, adult education, or if both courses had been taken. Based on this finding, the null hypothesis was accepted.

Table 13
One-way Analysis of Variance of Level of Principled Moral Reasoning by Post Degree Courses in Philosophy and Adult Education

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>835.57</td>
<td>3</td>
<td>278.52</td>
<td>.96</td>
</tr>
<tr>
<td>Within groups</td>
<td>8702.45</td>
<td>30</td>
<td>290.08</td>
<td></td>
</tr>
</tbody>
</table>

Null Hypothesis 6b: There is no significant difference in PALS scores on the Principles of Adult Learning Scale between those who have had philosophy and/or adult education courses and those who have not.

The findings related to this hypothesis were achieved by conducting a one-way analysis of variance (Table 14) to determine whether
taking of the specified courses by the instructors produced a difference in mean scores on the Principles of Adult Education Scale.

Table 14

One-way Analysis of Variance of Teaching Style by Post Degree Courses in Philosophy and Adult Education

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>1759.23</td>
<td>2</td>
<td>879.62</td>
<td>2.71</td>
</tr>
<tr>
<td>Within groups</td>
<td>9400.74</td>
<td>29</td>
<td>324.16</td>
<td></td>
</tr>
</tbody>
</table>

There were no significant differences in PALS mean scores between those who had taken a/an philosophy and/or adult education course(s) and those who had not (F = 2.71, df = 2/29, p > .05). Based upon these data the null hypothesis was accepted.

These two hypotheses were only of an exploratory nature. There were two reasons for inquiring into the effects of the two variables, post degree courses in philosophy and adult education. Studies (Rest, 1974, 1986 & Lawrence, 1979) indicated that graduate education in philosophy had a significant effect on the DIT P scores making them higher than other college graduates' P scores. Sixty-one percent (21 out of 34 subjects) in this study's instructor sample had not had courses in either philosophy or adult education, yet 50% of them had DIT P scores above 50. Two subjects had taken graduate philosophy courses (6%) and three had taken both philosophy and adult education courses (9%). The results of the one-way analysis of variance (Table 13) indicated that the courses in philosophy in this sample had not effected their DIT P scores.

Second, Douglass's (1982) research on the effects of professional training in adult education concluded that educators with professional
training in adult education had higher PALS scores than those who did not have the same training in adult education. Eight of the sample instructors had taken adult education courses (24%). The results of the one-way analysis of variance (Table 14) indicated that the course(s) in adult education did not cause significant differences in their teaching style score. The possibility that the education variable, courses in philosophy and/or adult education, was affecting the sample P scores and teaching style scores was ruled out.

Summary of Findings

Principled moral reasoning was found to be significantly correlated to teaching style in the adult education context. There was significant correlation of The Defining Issues Test (DIT) P scores with Factor 2, Personalizes Instruction, of the Principles of Adult Learning Scale. There was a significant negative correlation of the DIT Utilization scores with Factor 6, Encourages Student Planning of Individual Learning Goals, of the Principles of Adult Learning Scale. A step-wise regression analysis of The Defining Issues Test (DIT) P scores and U scores regressed on the Principles of Adult Learning Scale teaching style scores indicated that with the "mediating" variable, P x U, an increased amount of variance could be accounted for in the relationship between principled moral reasoning and teaching styles.

No significant relationship was found between principled moral reasoning level of the instructor sample and the student samples' perception of classroom learning environment. No significant relationship was found between the two teaching styles, learner- and teacher-
centered, and the student samples' perception of classroom learning environment.

T-tests were performed to ascertain whether or not the students' CEID and CEIC mean scores differed significantly if their instructors had high or low DIT P scores and were learner-centered or teacher-centered. There was no significant difference.

There was a significant difference between mean scores of males and females on The Defining Issues Test. Females scored higher on the DIT. The research literature has reported that gender differences on the DIT are not unusual and numerous studies attribute higher DIT P scores to age and education levels rather gender differences (Rest, 1986). An ANOVA procedure did not reveal any significant differences in principled moral reasoning scores from the effects of age or education on this sample but did account for significant gender effects on the DIT P scores.

Post degree education courses in philosophy and adult education did not effect principled moral reasoning level scores or teaching style scores. The research literature reports findings of higher DIT P scores were found in graduate students majoring in philosophy. The research literature attributes increased learner-centered teaching style behaviors with education and/or training in adult education philosophy and methods.
CHAPTER 5

Conclusions and Recommendations

The purpose of this study was to investigate the relationship between developmental level of moral reasoning and two teaching styles: a) learner-centered and b) teacher-centered. Students' perceptions of these styles within the context of adult post-secondary education were also examined.

Progressive levels of cooperation based on a justice principle within social contexts have been posited as stages of development in moral reasoning by Lawrence Kohlberg and James Rest. "A moral judgment stage is defined by its notion of how cooperation is organized - in particular, how the benefits and burdens of cooperation are allocated, how rights and obligations are derived. In short, our stages represent different concepts of justice" (Rest, 1986, p. 161). The basic philosophical principles that are the foundation of adult education emphasize cooperative, collaborative, participative (learner-centered teaching style) classroom environments. Therefore, the rationale that structures this study rests on the assumption that Kohlberg's theory of moral justice reasoning and the basic principles of adult learning are conceptually related.

Rest's Defining Issues Test was used to gather data on the instructors' level of principled moral reasoning. Gary Conti's Principles of Adult Learning Scale identified through self-report by faculty, their teaching style. Stern's Classroom Environmental Index provided data from one class per instructor on the students' perceptions of the physical and psychological milieu of their classroom as either encouraging student development or as being controlled by the instructor.
Conclusions

Conclusions with respect to the research questions have been arrived at after studying the statistical data and their interpretation. The characteristics of the faculty sample were key factors in understanding the conclusions drawn from the statistical analysis. The sample was heterogeneous in respect to a) institutional representation, b) subject matter taught, and c) full time professors or adjunct instructors working in a variety of careers. They were homogeneous in the following variables: a) all but two had masters or doctoral degrees (91%); b) all taught adult students at the undergraduate level; c) 74% were over the age of 30, and; d) 62% had not taken a post-degree course in either philosophy or adult education.

1. There was a statistically significant, though low moderate (r=.40) positive relationship between faculty level of moral reasoning, measured by The Defining Issues Test, and teaching style, measured by the Principles of Adult Learning Scale. The respondents' teaching style mean, (M=107), indicated a highly teacher-centered style sample. The teacher-centered orientation of the sample is representative of the predominant approach to teaching at all levels of education in the United States (Conti, in Galbraith (ed), 1990). Stickney-Taylor and Sasse (1990) found that educators (n=34) in community college, adult (ABE/GED) or higher education with academic preparation in adult education tested out as preferring traditional teacher-centered instruction.

The .40 correlation of teacher-centered style with high DIT P scores could be interpreted as coincidental, since the literature
reports high P scores associated with democratic teaching behaviors rather than authoritarian teaching behaviors. Johnston (1989) found that teachers with P score ranges of 34 to 51 demonstrated a more complex understanding and differentiated view of students and curriculum, "a more integrated view of the teaching-learning process, and an increased ability to take the perspective of students" (p. 57). Or, the interpretation could be that teaching style, when highly consistent as in this teacher-centered sample, has a significant relationship with principled moral reasoning.

Instructors in this sample with high principled reasoning scores (68% with P scores of 42 and above that were .5 SD's above or below the sample mean of 107), could represent a complex level of principled moral reasoning resulting in teaching behaviors characterized by consistency in communication of course objectives, presentation methods, evaluation of the adult students, and adherence to the institutional policies. This would represent a commitment to the students that all would have an equal starting base of information from which to guide their own learning experience rather than how learner- or teacher-centered the instructor. This interpretation does not support the findings of Johnston's study (1989) in the elementary school setting.

Principled moral reasoning accounted for statistically significant variance in teaching style according to step-wise regression analysis. Adding of the DIT P score combined with the utilization score to the regression equation seemed to improve the amount of variance associated with teaching style. The implication of these results would be that there is a linkage between level of moral reasoning processes leading to
choice of action based on the ethical principle of justice and teaching behaviors.

Finally, one could conclude that the high scores of the instructors in three of the subscales contributed to the moderate .40 correlation of DIT P scores with the Principles of Adult Learning Scale. The instructors scored above the norm (M=40/NM=38) on the main factor in PALS, Learner-Centered Activities. This factor was concerned with the amount of authority the instructor exercised in managing the learning activities. Learner-centered instructor behaviors described by Conti (1985) in this subscale are those that allow the students to initiate learning activities and encourage student responsibility for learning.

The second factor that the instructors rated themselves highly (M=22) though not as high as the norm (M=31) was Personalized Instruction. The instructor behaviors emphasized in this factor were personalizing the course objectives, pace of the class, and teaching methods to meet the unique needs of the adult students (Conti, 1985, p. 9).

The third subscale with high scores (M=13) was Flexibility of Instruction for Student Development. The norm for this subscale was M = 13. The instructor behaviors emphasized in this factor included maintaining flexibility in course content and in the learning environment in order to accommodate changing instructional needs of the students. Discussions related to various issues affecting student development and goals would be encouraged so that the adult students could acquire a deeper understanding of those elements in life that affect their personal growth (p. 10).
Two caveats must be considered with this conclusion. First, it must not be assumed that the performance of faculty in this particular sample and situation would be comparable to that of faculty in different institutions or learning contexts with different purposes. High or low, teaching-style scores are not indicators of teaching effectiveness, only of teaching style. These scores do not indicate quality of the outcome in the learner. Second, reasoning based on the ethical principle of justice contributes to only a fraction of the decision-making that is involved in developing a teaching style that leads to a style of classroom management.

Though it is safe to assume there are other values and constructs that affect the development of teaching styles, there is increasing evidence (Holt, et al, 1980; Johnston, 1989; Johnston & Lubomudrov, 1987; Sheehan, et al, 1980; and Thoma & Rest, 1989), that the building of a cooperative and participative learning climate by the instructor is associated with levels of principled moral reasoning scores. Sheehan et al. (1980) found in their study of physician clinical performance and its relationship to level of moral reasoning found that a high level of clinical performance was associated with high scores in principled moral reasoning. The study was not concerned with democratic or authoritarian approaches to patient care but with accurate, safe, and efficient clinical performance. Table v, Appendix E, is a Cross Tabulation of high, medium, and low P scores by teaching style scores. The distribution of learner-centered scores (5) were associated with high P scores and medium range P scores (2) and the lowest P score range matched with the cell containing the lowest PALS scores which were two standard
deviations below the norm. However, 15 or 68% of the 22 high P scores clustered around the sample mean score cell.

2. There was not a significant relationship between the variables, teaching style and students' perceptions of teaching style. Even though there was a moderate correlation of moral reasoning level to teaching style there was not a significant relationship between moral reasoning level and student perceptions. The mean score (118) for the students' perception of a developmental oriented classroom was .8 standard deviations below the norm mean of 138. Their mean score on the control factor of the GEl was 49.8, .5 standard deviations above the norm mean of 43.

Stern constructed the Classroom Environmental Index based on the premise that when individuals come together for a common purpose or have common interests they can experience similarities in perceptions of the situation (Stern, G. & Richman, J., 1979, p.1). This instrument has provided an indication that student sample perceived an environment that emphasized orderliness, bureaucratic administrative procedures, and cautiousness which could be considered consistent with teacher-centered teaching style. Learner- and teacher-centered styles were both perceived as high in Control Press rather than each style being perceptually differentiated by the students.

The relationship between teacher self-reports of their teaching styles and how students perceive teacher performance was studied by Hilton (1989). As in this study, he did not find a significant relationship between student perceptions of the instructors and their use of democratic procedures in the classroom. What he did find was a
significant relationship between student perceptions of teachers and their grade and course level. Scotney's research (1986) on teachers' knowledge and understanding of learner-centered teaching and their classroom performance also involved student assessment. There was no significant relationship between student assessment and the total PALS score. There was a moderately positive relationship between factor 5, Climate Building, and his student assessment instrument.

3. Even though the subjects' principled moral reasoning score was moderately related to the summated score of the Principles of Adult Learning Scale, t-tests showed no significant differences in student perceptions of teacher-centered instructors or learner-centered instructors in Area I - Development Press or Area II - Control Press. The t-test results indicated that neither teaching style, regardless of the instructors' Defining Issues Test P score, was clearly identified by the students. Clow (1987), using a modified Principles of Adult Learning Scale for student reporting, found a significant difference between the instructors' self-reports and the students' reports of their perceptions of teaching style. While the instructors reported themselves to be more collaborative, the students viewed them as teacher-centered as was found in the present study. Stickney-Taylor and Sasse (1990) used an adapted form of Hadley's (1975) Educational Orientation Questionnaire with faculty (n=72) and adult students (n=1,060). The faculty self-reports of educational orientation were in three categories: pedagogical, neutral, and andragogical. There was a significant difference between the scores (they were lower) of students with pedagogical orientation towards education who perceived the faculty as learner-centered and
students of andragogical orientation who perceived the instructors as having andragogical teaching behaviors. "Students rated adult educators to have exhibited andragogical behaviors regardless of the student's educational orientation" (p. 61).

All three of these research studies which involved student perception have totally different findings. This could be an indication of how difficult it is to measure perception of another person's behavior without the capability to control variables as in experimental design research.

4. There was a significant relationship, .45 at p<.01, between the PALs subscale factor, Personalized Instruction, and principled moral reasoning (P score). The Personalized Instruction factor was the most strongly related factor to the total PALs mean score, .85 at p<.01, refer to Table ii in Appendix E. Also, the strength of this relationship with the P score was slightly more that the total PALs mean score (.40 at p<.05) with the DIT P score.

There was a significant negative relationship between factor 6, Encourages Student Participation to Plan Learning Goals and Evaluate Them, and the action choice dimension of the moral reasoning score, the U score, -.40 at p<.05. Given the highly traditional teaching style of the sample this correlation should not be surprising since the commitment to deciding the content of the course, presentation of its content and evaluation of student performance would be considered a critical function and the total responsibility of the instructor.

5. Rest (1987, 1990) reported that education is the only demographic variable on which to base norms for all Defining Issues Test
indices (p. 20). Analysis of variance showed no significant differences between P scores of faculty with bachelors degrees, masters degrees, PhD or JD degrees. Also, age range had no significant effect on DIT P scores. However, there were significant differences between DIT P scores and gender.

The female subjects in this study had a higher mean DIT P score (Mean = 59) than their male counterparts, (Mean = 44). Both genders were homogeneous in two characteristics as a sample, age and education. This homogeneity is not considered a biasing factor in their responses since,"two meta-analyses of about 10,000 subjects indicate that age/education accounts for 30 to 50 percent of the variance in DIT scores" (Rest, 1986, p.176).

The data base for Kohlberg's initial studies in moral reasoning were based on all male samples. Studies that included female subjects did not control for education and job differences and males inevitably scored higher. Kohlberg maintained that "the attainment of stages four and five depends upon experiences of participation, responsibility, and role taking in the secondary institutions of society ... from which women have been and still are, to a large extent, excluded" (Benhabib, S., 1987, p. 157). One apparent difference between this study’s sample of women and Kohlberg's is that Kohlberg's female subjects were usually housewives while the women in this study had Masters degrees and were part of the professional educational community. They were either teaching full-time or worked at a career and taught as adjuncts. They had responsibilities for which they were accountable to the administration and to their students.
Gilligan and Attanucci, (1988) showed that males and females in a sample of educationally advantaged subjects focused either on the justice principle or the caring principle in arriving at decisions or in justifying choices they had made. There were sex differences in the direction of orientation.

Of the thirty-one men who demonstrated focus, thirty focused on justice; among the twenty-two women who demonstrated focus, ten focused on justice and twelve on care. Care focus, although not characteristic of all women, was almost exclusively a female phenomenon in three samples of educationally advantaged North Americans.

(Gilligan, 1988, p.xix)

Differences do exist; discovering and understanding the variables that mediate these differences will give an improved understanding of moral reasoning theory and practice.

6. In a sample of 40 graduate students of philosophy and theology Rest (1974), the principled moral reasoning score was 65. If any of the subjects' in this study had taken courses in philosophy the group means in both the DIT P score and U score could be affected. Five out of 34 subjects in this study had taken philosophy courses. The sample mean score for principled moral reasoning (M = 48) was 4 points above the norm (M = 44) for the normed group of college graduates and both were in the upper third category of P scores. One-way analysis of variance showed no significant difference in P scores between those who had taken philosophy courses and those who had not
Eleven of the subjects had taken adult education courses. One-way analysis of variance of those subjects with adult education preparation and those without showed no significant difference in PALS scores of teacher-centered or learner-centered styles of teaching. Douglass, (1982), conducted a study of hospital-based and Cooperative Extension adult educators (n=280). The data analysis found that a significant relationship existed between professional training in adult education, defined as three or more graduate courses, and the instructors learning-centered scores on the Principles of Adult Learning Scale. Dinges (1981) studied 264 ABE instructors' demographic characteristics and their relationship to learning-centered teaching style. Those instructors with 10–12 hours of adult education course work favored the learner-centered teaching style as reported by their PALS score.

**Recommendations from the Findings**

1. Studies which take into account the mediating factor of student perceptions in teacher/student interactions must control for certain processes that influence or bias the perceptions. Student attitude and motivation, student expectations of the instructor, student grade level and course level, difficulty of subject matter, length of time since the adult student last attended classes, student information processing styles, group affiliations and career responsibilities are other variables that could be considered.

2. Stern's Classroom Environmental Index should be used in conjunction with Conti's Principles of Adult Learning Scale in future studies of this nature so that a larger sampling of both teaching styles is represented. The CEI results for Classroom Development Press were
approaching the norm mean with students of instructors who practiced learner-centered instruction and comprised only seven out of 34 instructors. Since the PALS items have low moderate intercorrelations on the factor analysis, careful study of the details of the factor analysis should be considered when considering this scale for use in a study.

3. Teacher inservice education about principles of adult education, needs of the non-traditional student, facilitative methods and self-directed study for adult students would increase the sensitivity of collegiate level instructors towards the unique characteristics of their adult students.

4. Build teacher inservice education programs around issues and problems that are encountered when planning class objectives, content, and activities. Explore the enabling characteristics of the institution's culture and policies that would encourage a more learner-centered environment. Explore the constraints placed upon the instructors and students by the course content, time limits, organizational culture and policies. Discussion of these elements can increase awareness of the many actions that can be taken to create a learning environment that emphasizes cooperative learning and a challenging yet supportive environment for the adult student.

5. Educators working in the field of adult education could be provided with opportunities for learning about adult cognitive development, life-span development, characteristics of adult learners, the dynamics of the group process, ways to create a psychological and physical climate for learning, and the circumstances when students prefer or need structured course content and when they do not.
Recommendations for Further Research

1. Non-verbal communication by the teacher is an ongoing process that influences perception. Studies that identify verbal and non-verbal communication behaviors associated with learner-centered and teacher-centered styles could clarify specific behaviors that would be associated with the factor items delineated in the Principles of Adult Learning Scale. "According to metacommunication theory, any communication conveys both content and information as to how the content is to be taken. How the content is to be taken is strongly influenced by the relationship of the people who are communicating" (Luft, 1984, p. 130).

2. Studies that incorporate justice and caring orientations to moral reasoning would provide a multidimensional approach to assessing moral reasoning. The field of adult education encompasses a variety of areas of professional practice involving interaction with adult students from a nurturing standpoint and an equity standpoint.

3. Development of an instrument comparable to the DIT but with situations and items that are specific to the reality of practice in the field of adult education would be of great benefit in the study of ethical practice and its relationship to effective teaching methods.

4. A combined quantitative and qualitative research design would provide a different perspective on how instructor's make their decisions concerning the classroom management and teaching methods. Use of curvilinear statistical procedures may provide another dimension to the analysis of the "moral reasoning to real life application" area of research.
The DIT Utilization score is still in the experimental stage which means that findings using this score are difficult to explain. Interviews with instructors would add the "action choice" dimension, and assist the researcher in forming a data base for Rest's Component 3 processes that involve moral actions stemming from moral decision-making.
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learning mode and teaching practices in the classroom (part-time teacher, continuing education). From an unpublished abstract listing, Dissertations Using the Principles of Adult Learning Scale. Available from Dr. Gary Conti, Kellog Center, Montana State University, Bozeman, MT. 59717.


## Frequency Table of Demographic Variables

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Opinions about Social Problems

The purpose of this questionnaire is to help us understand how people think about social problems. Different people have different opinions about questions of right and wrong. There are no "right" answers to such problems in the way that math problems have right answers. We would like you to tell us what you think about several problem stories.

You will be asked to read a story from this booklet. Then you will be asked to mark your answers on a separate answer sheet. More details about how to do this will follow. But it is important that you fill in your answers on the answer sheet with a #2 pencil. Please make sure that your mark completely fills the little circle, that the mark is dark, and that any erasures that you make are completely clean.

The Identification Number at the top of the answer sheet may already be filled in when you receive your materials. If not, you will receive special instructions about how to fill in that number.

In this questionnaire you will be asked to read a story and then to place marks on the answer sheet. In order to illustrate how we would like you to do this, consider the following story:

FRANK AND THE CAR

Frank Jones has been thinking about buying a car. He is married, has two small children and earns an average income. The car he buys will be his family's only car. It will be used mostly to get to work and drive around town, but sometimes for vacation trips also. In trying to decide what car to buy, Frank Jones realized that there were a lot of questions to consider. For instance, should he buy a larger used car or a smaller new car for about the same amount of money? Other questions occur to him.

We note that this is not really a social problem, but it will illustrate our instructions. After you read a story you will then turn to the answer sheet to find the section that corresponds to the story. But in this sample story, we present the questions below (along with some sample answers). Note that all your answers will be marked on the separate answer sheet.
First, on the answer sheet for each story you will be asked to indicate your recommendation for what a person should do. If you tend to favor one action or another (even if you are not completely sure), indicate which one. If you do not favor either action, mark the circle by "can't decide."

Second, read each of the items numbered 1 to 12. Think of the issue that the item is raising. If that issue is important in making a decision, one way or the other, then mark the circle by "great." If that issue is not important or doesn't make sense to you, mark "no." If the issue is relevant but not critical, mark "much," "some," or "little" -- depending on how much importance that issue has in your opinion. You may mark several items as "great" (or any other level of importance) -- there is no fixed number of items that must be marked at any one level.

Third, after you have made your marks along the left hand side of each of the 12 items, then at the bottom you will be asked to choose the item that is the most important consideration out of all the items printed there. Pick from among the items provided even if you think that none of the items are of "great" importance. Of the items that are presented there, pick one as the most important (relative to the others), then the second most important, third, and fourth most important.

**SAMPLE ITEMS and SAMPLE ANSWERS:**

**FRANK AND THE CAR:**

- **Great**
- **Some**
- **No**
- **Much**
- **Little**

| 0 0 0 0 | 1. Whether the car dealer was in the same block as where Frank lives. |
| 0 0 0 0 | 2. Would a used car be more economical in the long run than a new car. |
| 0 0 0 0 | 3. Whether the color was green, Frank's favorite color. |
| 0 0 0 0 | 4. Whether the cubic inch displacement was at least 200. |
| 0 0 0 0 | 5. Would a large, roomy car be better than a compact car. |
| 0 0 0 0 | 6. Whether the front suspension was differential. |

<table>
<thead>
<tr>
<th>1 2 3 4 5 6 7 8 9 10 11 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most important item</td>
</tr>
<tr>
<td>Second most important</td>
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<tr>
<td>Third most important</td>
</tr>
<tr>
<td>Fourth most important</td>
</tr>
</tbody>
</table>

Note that in our sample responses, the first item was considered irrelevant; the second item was considered as a critical issue in making a decision; the third item was considered of only moderate importance; the fourth item was not clear to the person responding whether 200 was good or not, so it was marked "no"; the fifth item was also of critical importance; and the sixth item didn't make any sense, so it was marked "no".

Note that the most important item comes from one of the items marked on the far left hand side. In deciding between item #2 and #5, a person should reread these items, then put one of them as the most important, and the other item as second, etc.
DEFINING ISSUES TEST
University of Minnesota
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HEINZ AND THE DRUG: ○ Should Steal ○ Can't Decide ○ Should not steal

1. Whether a community's laws are going to be upheld.
2. Isn't it only natural for a loving husband to care so much for his wife that he'd steal?
3. Is Heinz willing to risk getting shot as a burglar or going to jail for the chance that stealing the drug might help?
4. Whether Heinz is a professional wrestler, or has considerable influence with professional wrestlers.
5. Whether Heinz is stealing for himself or doing this solely to help someone else.
6. Whether the druggist's rights to his invention have to be respected.
7. Whether the essence of living is more encompassing than the termination of dying, socially and individually.
8. What values are going to be the basis for governing how people act to each other.
9. Whether the druggist is going to be allowed to hide behind a worthless law which only protects the rich anyhow.
10. Whether the law in this case is getting in the way of the most basic claim of any member of society.
11. Whether the druggist deserves to be robbed for being so greedy and cruel.
12. Would stealing in such a case bring about more total good for the whole society or not.

ESCAPED PRISONER: ○ Should report him ○ Can't decide ○ Should not report him

1. Hasn't Mr. Thompson been good enough for such a long time to prove he isn't a bad person?
2. Every time someone escapes punishment for a crime, doesn't that just encourage more crime?
3. Wouldn't we be better off without prisons and the oppression of our legal system?
4. Has Mr. Thompson really paid his debt to society?
5. Would society be falling what Mr. Thompson should fairly expect?
6. What benefits would prisons be apart from society, especially for a charitable man?
7. How could anyone be so cruel and heartless as to send Mr. Thompson to prison?
8. Would it be fair to all the prisoners who had to serve out their full sentences if Mr. Thompson was let off?
9. Was Mrs. Jones a good friend of Mr. Thompson?
10. Wouldn't it be a citizen's duty to report an escaped criminal, regardless of the circumstances?
11. How would the will of the people and the public good best be served?
12. Would going to prison do any good for Mr. Thompson or protect anybody?

Most Important Item ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○
Second most important ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○
Third most important ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○
Fourth most important ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○
<table>
<thead>
<tr>
<th>Option</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐</td>
<td>Is the principal more responsible to students or to parents?</td>
</tr>
<tr>
<td>☐</td>
<td>Did the principal give his word that the newspaper could be published for a long time, or did he just promise to approve the newspaper one issue at a time?</td>
</tr>
<tr>
<td>☐</td>
<td>Would the students start protesting even more if the principal stopped the newspaper?</td>
</tr>
<tr>
<td>☐</td>
<td>When the welfare of the school is threatened, does the principal have the right to give orders to students?</td>
</tr>
<tr>
<td>☐</td>
<td>Does the principal have the freedom of speech to say “no” in this case?</td>
</tr>
<tr>
<td>☐</td>
<td>If the principal stopped the newspaper would he be preventing full discussion of important problems?</td>
</tr>
<tr>
<td>☐</td>
<td>Whether the principal’s order would make Fred lose faith in the principal.</td>
</tr>
<tr>
<td>☐</td>
<td>Whether Fred was really loyal to his school and patriotic to his country.</td>
</tr>
<tr>
<td>☐</td>
<td>What effect would stopping the paper have on the student’s education in critical thinking and judgment?</td>
</tr>
<tr>
<td>☐</td>
<td>Whether Fred was in any way violating the rights of others in publishing his own opinions.</td>
</tr>
<tr>
<td>☐</td>
<td>Whether the principal should be influenced by some angry parents when it is the principal that knows best what is going on in the school.</td>
</tr>
<tr>
<td>☐</td>
<td>Whether Fred was using the newspaper to stir up hatred and discontent.</td>
</tr>
</tbody>
</table>

**Most important item:**

1. Is the principal more responsible to students or to parents?
2. Did the principal give his word that the newspaper could be published for a long time, or did he just promise to approve the newspaper one issue at a time?
3. Would the students start protesting even more if the principal stopped the newspaper?
4. When the welfare of the school is threatened, does the principal have the right to give orders to students?
5. Does the principal have the freedom of speech to say “no” in this case?
6. If the principal stopped the newspaper would he be preventing full discussion of important problems?
7. Whether the principal’s order would make Fred lose faith in the principal.
8. Whether Fred was really loyal to his school and patriotic to his country.
9. What effect would stopping the paper have on the student’s education in critical thinking and judgment?
10. Whether Fred was in any way violating the rights of others in publishing his own opinions.
11. Whether the principal should be influenced by some angry parents when it is the principal that knows best what is going on in the school.
12. Whether Fred was using the newspaper to stir up hatred and discontent.

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<thead>
<tr>
<th>Option</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐</td>
<td>The woman’s family is in favor of giving her the overdose or not.</td>
</tr>
<tr>
<td>☐</td>
<td>Is the doctor obligated by the same laws as everybody else if giving an overdose would be the same as killing her.</td>
</tr>
<tr>
<td>☐</td>
<td>Whether people would be much better off without society regimenting their lives and even their deaths.</td>
</tr>
<tr>
<td>☐</td>
<td>Whether the doctor could make it appear like an accident.</td>
</tr>
<tr>
<td>☐</td>
<td>Does the state have the right to force continued existence on those who don’t want to live.</td>
</tr>
<tr>
<td>☐</td>
<td>What is the value of death prior to society’s perspective on personal values.</td>
</tr>
<tr>
<td>☐</td>
<td>Whether the doctor has sympathy for the woman’s suffering or cares more about what society might think.</td>
</tr>
<tr>
<td>☐</td>
<td>Is helping to end another’s life over a responsible act of cooperation.</td>
</tr>
<tr>
<td>☐</td>
<td>Whether only God should decide when a person’s life should end.</td>
</tr>
<tr>
<td>☐</td>
<td>What values the doctor has set for himself in his own personal code of behavior.</td>
</tr>
<tr>
<td>☐</td>
<td>Can society afford to let everybody end their lives when they want to.</td>
</tr>
<tr>
<td>☐</td>
<td>Can society allow suicides or mercy killing and still protect the lives of individuals who want to live.</td>
</tr>
</tbody>
</table>

**DOCTOR’S DILEMMA:**

- ☐ He should give the lady an overdose that will make her die
- ☐ Can’t decide
- ☐ Should not give the overdose

**Most important item:**

1. The woman’s family is in favor of giving her the overdose or not.
2. Is the doctor obligated by the same laws as everybody else if giving an overdose would be the same as killing her.
3. Whether people would be much better off without society regimenting their lives and even their deaths.
4. Whether the doctor could make it appear like an accident.
5. Does the state have the right to force continued existence on those who don’t want to live.
6. What is the value of death prior to society’s perspective on personal values.
7. Whether the doctor has sympathy for the woman’s suffering or cares more about what society might think.
8. Is helping to end another’s life over a responsible act of cooperation.
9. Whether only God should decide when a person’s life should end.
10. What values the doctor has set for himself in his own personal code of behavior.
11. Can society afford to let everybody end their lives when they want to.
12. Can society allow suicides or mercy killing and still protect the lives of individuals who want to live.
WEBSTER:  ○ Should have hired Mr. Lee  ○ Can't decide  ○ Should not have hired him

1. Does the owner of a business have the right to make his own business decisions or not?
2. Whether there is a law that forbids racial discrimination in hiring for jobs.
3. Whether Mr. Webster is prejudiced against Orientals himself or whether he means nothing personal in refusing the job.
4. Whether hiring a good mechanic or paying attention to his customers' wishes would be best for his business.
5. What individual differences ought to be relevant in deciding how society’s rules are filled?
6. Whether the greedy and competitive capitalistic system ought to be completely abandoned.
7. Do a majority of people in Mr. Webster’s society feel like his customers or are a majority against prejudice?
8. Whether hiring capable men like Mr. Lee would use talents that would otherwise be lost to society.
9. Would refusing the job to Mr. Lee be consistent with Mr. Webster’s own moral beliefs?
10. Could Mr. Webster be so hard-hearted as to refuse the job, knowing how much it means to Mr. Lee?
11. Whether the Christian commandment to love your fellow man applies to this case.
12. If someone’s in need, shouldn't he be helped regardless of what you get back from him?

| Most important item | 1 1 1 1 1 1 1 1 |
| Second most important | 0 0 0 0 0 0 0 0 |
| Third most important | 0 0 0 0 0 0 0 0 |
| Fourth most important | 0 0 0 0 0 0 0 0 |

STUDENTS:  ○ Take it over  ○ Can't decide  ○ Not take it over

1. Are the students doing this to really help other people or are they doing it just for kicks.
2. Do the students have any right to take over property that doesn’t belong to them.
3. Do the students realize that they might be arrested and fined, and even expelled from school.
4. Would taking over the building in the long run benefit more people to a greater extent.
5. Whether the president stayed within the limits of his authority in ignoring the faculty vote.
6. Will the takeover anger the public and give all students a bad name.
7. Is taking over a building consistent with principles of justice.
8. Would allowing one student take-over encourage many other student take-overs.
9. Did the president bring this misunderstanding on himself by being so unreasonable and uncooperative.
10. Whether running the university ought to be in the hands of a few administrators or in the hands of all the people.
11. Are the students following principles which they believe are above the law.
12. Whether or not university decisions ought to be respected by students.

| Most important item | 0 0 0 0 0 0 0 0 |
| Second most important | 1 1 1 1 1 1 1 1 |
| Third most important | 1 1 1 1 1 1 1 1 |
| Fourth most important | 1 1 1 1 1 1 1 1 |
DIRECTIONS FOR THE
PRINCIPLES OF ADULT LEARNING SCALE

The following survey contains statements describing teaching behaviors that could apply to instructors of adult, non-traditional students. Each statement can be answered to reflect how frequently you use these teaching behaviors in the classroom environment or in planning for class activities. The frequency responses are: (0) Always, (1) Almost always, (2) Often, (3) Seldom, (4) Almost never, (5) Never. Read each item carefully. On the separate answer sheet please respond the way you most frequently practice the described action by circling the corresponding number. NOTE: The response, (0) Always, begins with a zero! If the item does not apply to you, circle the (5) Never.

1. I allow students to participate in developing the criteria for evaluating their performance in class.

2. I use disciplinary action when it is needed.

3. I allow older students more time to complete assignments when they need it.

4. I encourage students to adopt accepted middle class values.

5. I help students diagnose the gaps between their goals and their present level of performance.

6. I provide knowledge rather than serve as a resource person.

7. I stick to the instructional objectives that I write at the beginning of the program.

8. I participate in the informal counseling of students.

9. I use lecturing as the best method for presenting my subject material to adult students.

10. I determine the educational objectives for each of my students.

11. I determine the educational objectives for each of my students.

12. I plan units which differ as widely as possible from my student's socio-economic backgrounds.

13. I get a student to motivate himself/herself by confronting him/her in the presence of classmates during group discussions.

14. I plan learning episodes to take into account my student's prior experiences.
15. I allow students to participate in making decisions about the topics that will be covered in class.

16. I use one basic teaching method because I have found that most adults have a similar style of learning.

17. I use different techniques depending on the students being taught.

18. I encourage dialogue among my students.

19. I use written tests to assess the degree of academic growth rather than to indicate new directions for learning.

20. I utilize the many competencies that most adult students already possess to achieve educational objectives.

21. I use what history has proven that adults need to learn as my chief criteria for planning learning episodes.

22. I accept errors as a natural part of the learning process.

23. I have individual conferences to help students identify their educational needs.

24. I let each student work at his/her own rate regardless of the amount of time it takes him/her to learn a new concept.

25. I help my students develop short-range as well as long-range objectives.

26. I maintain a well-disciplined classroom to reduce interferences to learning.

27. I avoid class discussion of controversial subjects that involve value judgments.

28. I allow my students to take periodic breaks during class.

29. I use methods that foster quiet, productive deskwork.

30. I use tests as my chief method of evaluating students.

31. I plan activities that will encourage each student's growth from dependence on others to greater independence.

32. I gear my instructional objectives to match the individual abilities and needs of the students.

33. I avoid issues that relate to the student's concept of himself/herself.

34. I encourage my students to ask questions about the nature of their
35. I allow a student’s motives for participating in continuing education to be a major determinant in the planning of learning objectives.

36. I have my students identify their own problems that need to be solved.

37. I give all students in my class the same assignment on a given topic.

38. I use materials that were originally designed for students in elementary and secondary schools.

39. I organize adult learning episodes according to the problems that my students encounter in everyday life.

40. I measure a student’s long-term educational growth by comparing his/her total achievement in class to his/her expected performance as measured by national norms from standardized tests.

41. I encourage competition among my students.

42. I use different materials with different students.

43. I help students relate new learning to their prior experiences.

44. I teach units about problems of everyday living.
SCORING PALS

Learner-centered Items: 1, 3, 5, 8, 10, 14, 15, 17, 18, 20, 22, 23, 24, 25, 28, 31, 34, 35, 36, 39, 42, 43, and 44.

The following values are assigned to these items: Always = 5
Almost always = 4
Often = 3
Seldom = 2
Almost never = 1
Never = 0

Teacher-centered Items: 2, 4, 6, 7, 9, 11, 12, 13, 16, 19, 21, 26, 27, 29, 30, 33, 37, 38, 40, 41.

The following values are assigned to these items: Always = 0
Almost always = 1
Often = 2
Seldom = 3
Almost never = 4
Never = 5

Omitted items are assigned the value, 9.

ITEMS AS THEY RELATE TO EACH FACTOR:

Factor 1: Learner-centered activities
-- 2, 4, 11, 12, 13, 16, 19, 21, 29, 30, 38, 40.

Factor 2: Personalizing instruction
-- 3, 9, 17, 24, 32, 35, 37, 41, 42.

Factor 3: Relating learning in class to life experiences
-- 14, 31, 34, 39, 43, 44.

Factor 4: Assessing student needs
-- 5, 8, 23, 25.

Factor 5: Climate building for learning
-- 18, 20, 22, 28.

Factor 6: Student participation in the learning process
-- 1, 10, 15, 36.

Factor 7: Flexibility for personal development.
-- 6, 7, 26, 27, 33.
SCORING PALS

The Principles of Adult Learning Scale is based on a modified Likert scale. PALS is a "summed rating scale that assesses the degree of practitioner support of the collaborative (learner-centered) mode. The sum of an individual's responses to the items can provide a score to indicate the degree of a practitioner's support of the collaborative teaching-learning mode when the score is interpreted in relationship to the normative scores established by this study" (Conti, 1979, p. 20). Each item or statement describing a teacher behavior can be responded to on a scale of 0 to 5; each increment in the scale corresponds with the respondents' belief or perception of how frequently they use the specified actions. Responses that are learner-centered (collaborative) are assigned the high number values (5, 4, 3); the teacher-centered responses are assigned the low number values (0, 1, 2). The scale is divided into equal increments between these two teaching style behaviors to measure varying degrees of their presence in the instructional activity of the educator. (See previous page, Scoring PALS)

Normative scores for the PALS as given in "Principles of Adult Learning Scale", a presentation by Conti to the Twentieth Annual Adult Education Research Conference, 1979.

<table>
<thead>
<tr>
<th>Raw Score</th>
<th>T-Score</th>
<th>Percentile</th>
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<tbody>
<tr>
<td>190</td>
<td>70</td>
<td>98</td>
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<td>179</td>
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</tr>
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<td>168</td>
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<td>157</td>
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</tr>
<tr>
<td>146</td>
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<td>50 **</td>
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<tr>
<td>135</td>
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<td>7</td>
</tr>
<tr>
<td>113</td>
<td>30</td>
<td>2</td>
</tr>
</tbody>
</table>

** The 50th percentile, represented by the score 146, is the reference point in which scores of 146 and above indicate learner-centered teaching style. The scale has a standard deviation of 20.
Factor scores are calculated by summing the value of the responses for each item in the factor.

**Factor Score Values**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Mean</th>
<th>SD</th>
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<tr>
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<td>8.3</td>
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<tr>
<td>2</td>
<td>31</td>
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<td>6</td>
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<td>3.5</td>
</tr>
<tr>
<td>7</td>
<td>13</td>
<td>3.9</td>
</tr>
</tbody>
</table>
ANSWER SHEET

Please circle the number which most closely describes your teaching practices. The responses are: 0 = Always, 1 = Almost always, 2 = Often 3 = Seldom, 4 = Almost never, 5 = Never

Example: 1. 5 4 3 2 1 0
If the item does not apply to you, circle 5.

1. 5 4 3 2 1 0
2. 5 4 3 2 1 0
3. 5 4 3 2 1 0
4. 5 4 3 2 1 0
5. 5 4 3 2 1 0
6. 5 4 3 2 1 0
7. 5 4 3 2 1 0
8. 5 4 3 2 1 0
9. 5 4 3 2 1 0
10. 5 4 3 2 1 0
11. 5 4 3 2 1 0
12. 5 4 3 2 1 0
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38. 5 4 3 2 1 0
39. 5 4 3 2 1 0
40. 5 4 3 2 1 0
41. 5 4 3 2 1 0
42. 5 4 3 2 1 0
43. 5 4 3 2 1 0
44. 5 4 3 2 1 0

...
INSTRUCTIONS FOR CEI (CLASSROOM ENVIRONMENT INDEX)

Some of the items in this questionnaire may appear to be irrelevant for this age group of student. However, it has proven to be a valid and reliable instrument in the college classroom.

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.


1) The questionnaire is answered voluntarily by the students.

2) HALF of the volunteering students receive Part I; the other HALF, --- Part 2. BOTH TESTS BEGIN WITH #1 ON ANSWER SHEET

3) Fill in age and sex on the answer sheet.

4) If questionnaire is completed outside of classtime, it must be returned to the instructor by the next class period.

5) Return of the #2 pencils would be greatly appreciated if not too inconvenient for you.

********** Return the test booklet with the answer sheet. **********

RETURN ALL QUESTIONNAIRES TO
CLASSROOM ENVIRONMENT INDEX

Form 971 (Part I)

George G. Stern and William J. Walker

There are 150 statements in this booklet. They are for the purpose of describing what goes on in schoolrooms all over the world, from the primary level through the university. The statements have to do with classroom activities, teaching methods, rules and policies, etc. Some may not be typical of your school because things are different from one classroom to another and from one country to another. You are to decide which statements are characteristic of your classroom and which are not. Your answers should tell us what you believe your classroom is actually like rather than what you might personally prefer it to be. You won't know the answer to many of these statements, because there may not be any really definite information on which to base your answer. Your responses will simply mean that in your opinion the statement is probably true or probably false about your classroom.

Do not omit any item.

DIRECTIONS

On the special answer sheet please print the information requested. In the space for Class or Level include an exact identification of the specific classroom for which you are completing this questionnaire. For example: 7th grade English, Miss Carter, 4th period; Chemistry 101, section 3, Prof. Smith. Then as you read each statement in the booklet, blacken space

T - when you think the statement is generally TRUE or characteristic of your classroom; is something which occurs or might occur; is the way others in the classroom tend to feel or act.

F - when you think the statement is generally FALSE or not characteristic of your classroom; is something which is not likely to occur; is not the way others in the classroom typically feel or act.

Be sure to fill in the whole space between the dotted lines on the answer sheet with a heavy black mark. Use a number 2 or softer lead pencil. Erase errors completely. Notice that the numbers on the answer sheet are arranged across the answer sheet, not down.

YOU MUST ANSWER EVERY ITEM.

Work rapidly, going through the entire list of statements as quickly as you can. Please do not make any marks in this booklet.

The items in Part One of this booklet are numbered 1 through 150.

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Syracuse University
Syracuse, New York, U. S. A.
Legend: T — when you think the statement is generally true or characteristic of your classroom, is something which occurs or might occur, is the way others in the classroom tend to feel or act.
F — when you think the statement is generally false or not characteristic of your classroom, is something which is not likely to occur, is not the way others in the classroom typically feel or act.

1. The teacher seldom makes comments that embarrass students.
2. Students have a good deal of respect for those who do well in this classroom.
3. Errors and failure are talked about openly so that others may learn from them.
4. Students in this classroom have little to say to one another.
5. Students seldom mark or mutilate books or furniture in this classroom.
6. The students in this classroom differ greatly in national origin, religion, color, or social class.
7. Most classroom periods are well planned.
8. The teacher supports students who speak up openly and freely in the classroom.
9. Students often go to this teacher for advice.
10. A few students tend to monopolize classroom discussions.
11. Not many students in this room are actively involved in projects intended to improve the school.
12. Students learn that they are not only expected to have ideas but to do something about them.
13. Classroom discussions are often exciting, with a lot of active student participation.
14. Students in this room dress in unusual and striking ways.
15. Students in this room really expect to be somebody in the community some day.
16. You need permission to do anything in this classroom.
17. Students usually manage to pass in this classroom even if they don't work too hard.
18. Students welcome criticism from fellow students.
19. Group spirit in this classroom is good.
20. No one in this classroom has a chip on his shoulder.
21. Students in this classroom seek variety and novelty.
22. Each lesson is clearly related to what the teacher is trying to accomplish.
23. There are procedures available to a student who feels he has been marked unfairly.
24. Most students look up to the teacher with admiration.
25. Some students in this classroom enjoy seeing others get into trouble.
26. Very few students in this room are either interested or active in student government.
27. Students get very excited just prior to school athletic events.
28. Students put a lot of energy into everything they do in this classroom.
29. When a student does a project or wins a prize, everybody hears about it.
30. The teacher sometimes gets us to imagine what it would be like to be an outstanding scholar or scientist.
31. Students are seldom kept waiting when they ask the teacher for help.
32. This teacher encourages students to exert a great deal of effort.
33. Students usually welcome criticism from the teacher.
34. It is easy to make friends in this classroom.
35. It is easy to stay out of trouble in this classroom.
36. The class seldom has the same type of lesson from day to day.
37. The teacher has made the basic organization of the lessons very clear.
38. When they don't do well, most students try hard to improve.
39. In the first few days of class the teacher made it clear that he was running things.
40. Most students complain bitterly if they think the work is unreasonable.
41. The teacher encourages students to become interested in politics.
42. The teacher often gets very excited or emotional about things.
43. Students in this classroom seem listless and easily tired.
44. There are several show-offs in the room.
45. Most members of the class have definitely decided upon a life's career.
46. The teacher very often makes you feel like a child.
47. A student can bluff his way through the work in this classroom.
48. The teacher closely supervises all classroom activities.
49. A student who is somehow "different" from the rest of the students is not likely to be well accepted.
50. Students sometimes get into disagreeable arguments with the teacher over marks.
Legend:  
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F — when you think the statement is generally false or not characteristic of your classroom, is something which is not likely to occur, is not the way others in the classroom typically feel or act.

51. Everyone in this room has pretty much the same opinions and beliefs.

52. The teacher never runs out of material before the end of the day's session.

53. Students don't hesitate to complain to the teacher.

54. Most students are eager to do what the teacher wants.

55. If you're not in the right group in this room, you're likely to be left out of things.

56. Students in this room are not likely to take part in school or community clean-up campaigns, beautification projects, etc.

57. The students in this class get so high-spirited that the teacher has difficulty controlling the group.

58. Students often get so involved in their work that they do much more work than is required.

59. Many students in this class seem to lack confidence in their own ability.

60. Most students in this room want to live lives pretty much like their parents.

61. Students are made to take the blame for things whether they did them or not.

62. The teacher does not set very difficult goals.

63. Students have to get up in front of the room to speak no matter how embarrassed they might be.

64. Everyone is helped to know one another.

65. The teacher sometimes gets quite hostile toward students.

66. New ideas are frequently tried out in this room.

67. Directions are usually clear so everyone knows what to do.

68. When students don't like some classroom rule or procedure, they really work to get it changed.

69. Some students are stubborn and unmanageable in this room.

70. Student leaders expect you to go along with what they say in this room.

71. The teacher seldom expresses concern over such problems as air and water pollution, over-population, etc.

72. Most students in this room respond to ideas and events in a pretty matter-of-fact, mild-mannered way.

73. The day-to-day classroom activities do not require sustained or intensive effort.

74. Most students in this room like to draw attention to themselves.

75. Most students in this room would prefer to become a doctor or teacher rather than an explorer, pilot, or astronaut.

76. The teacher seldom makes you feel that you are wasting his time.

77. Examinations in this room are thorough and really test how much a student has learned.

78. Parents are regularly informed about a student's progress.

79. The teacher obviously dislikes several students in the room.

80. Some students in this room are unpleasantly aggressive.

81. Most students act and dress pretty much alike.

82. The introduction of new skills and concepts is carefully organized by the teacher.

83. If the work happens to be particularly difficult, most students in this room won't even bother to try it.

84. Students frequently disagree with the opinions expressed by the teacher.

85. There are no favorites in this class; everyone gets treated alike.

86. Student discussions on national and international news are encouraged in this classroom.

87. The teacher creates a calm and tranquil atmosphere.

88. Students get so wrapped up in various activities in this room that they often lose all sense of time or of other things going on around them.

89. There are several colorful and controversial personalities in this class.

90. Most students are more concerned with the present than with the future.

91. The names of students doing unsatisfactory work are sometimes posted in the room or written on the board.

92. Students achieve complex skills and understandings in this classroom.

93. Students are made to explain why they did something when the teacher doesn't like what they have done.

94. The teacher usually refuses to listen to explanations by students who are in trouble.

95. Students who dislike the teacher don't hide their feelings.

96. You never know what the teacher is likely to try next in this classroom.

97. Classroom demonstrations are carefully planned and conducted.

98. Most students do not go to the teacher for help when they are having difficulty.

99. There is an undercurrent of resistance to authority in this classroom.

100. Being on the good side of the teacher is important.
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F - when you think the statement is generally false or not characteristic of your classroom, is something which is not likely to occur, is not the way others in the classroom typically feel or act.

101. Students from this classroom are deeply interested in the problems of the local community.
102. It is not easy to hurt the feelings of students in this classroom.
103. Students put a lot of effort into their homework.
104. Classroom activities are often reported in the school newspaper.
105. Students are encouraged to be imaginative when they write.
106. When you get in trouble with this teacher, the other teachers soon know about it.
107. It isn’t necessary to work very hard to get a high mark from this teacher.
108. Students pay careful attention to comments the teacher writes on their papers.
109. Students from this classroom spend a great deal of time together outside the classroom.
110. There are occasional fights just before or after the classroom session.
111. Tests and textbooks have been the same for several years.
112. Most students follow a systematic plan of study in this classroom.
113. Most students in this classroom keep trying no matter how discouraged they get.
114. Students generally treat this teacher with courtesy and respect.
115. Students have to act like all the others in order to be in with the group.
116. Strong positions are taken in this room regarding civil liberties and minority groups.
117. Several students in this room are moody and temperamental.
118. The classroom is boring.
119. Most students like to fool around in this classroom.
120. The teacher encourages us to think about exciting and unusual careers.
121. Certain students seem to enjoy humiliating their classmates.
122. This teacher has the reputation of being easy.
123. Students look forward to receiving their marks in this class.
124. The teacher welcomes opportunities for friendly talks with students.
125. The room is always a mess because the students deliberately throw papers and rubbish around.
126. The teacher rarely tries new or different ways of doing things.
127. It is hard to plan for exams because students seldom know what they will be tested on.
128. The teacher is willing to hear student complaints.
129. Students seldom make fun of the teacher.
130. Many students in this room argue just for the sake of arguing.
131. Both the teacher and the students in this room are actively concerned about ways to make this world a better place to live in.
132. Students in this classroom tend to hide their deeper feelings from each other.
133. The teacher’s intense involvement in classroom activities seems to be contagious.
134. Many students in this room are somewhat timid, bashful, and shy.
135. There is little sympathy for ambitious daydreams of the future.
136. The teacher seems to take pleasure in humiliating certain students.
137. The teacher openly praises students who do the best work.
138. When students receive their tests or other materials back, they often discuss the teacher’s comments with others in the classroom.
139. Everyone in this classroom is warm and friendly.
140. If a student gets angry in this room he is likely to hide his feelings.
141. Although there are assigned textbooks, the teacher rearranges the materials and adds many new things of his own.
142. It is easy to take clear notes in this classroom when you have to.
143. Students often continue to work outside of the classroom on problems they had difficulty with.
144. Students do not idolize this teacher.
145. There are several students in this room who seem to have too high an opinion of themselves.
146. Students in this room have little interest in discussions of school policy.
147. Very few things in this room arouse much excitement or feeling.
148. The teacher is busy all the time.
149. It would be difficult to embarrass any of the show-offs in this room.
150. Students in this room often daydream about adventurous careers.
The teacher rarely advises students to go to the health office when they appear to be sick.

The teacher and students in this room are concerned with literary, musical, artistic, or dramatic activities.

In this classroom there is very little joking and laughing.

The teacher becomes extremely annoyed with students who seem to be daydreaming.

Most of the students here would be very helpful to a new student who was not familiar with the classroom routine.

In this classroom no one needs to be afraid to express a point of view which is unusual or unpopular.

The teacher has a formal set of rules and procedures intended to make the classroom run smoothly.

The teacher has a tremendous sense of humor.

The things learned in this classroom will be of great value in later life.

The teacher is interested in books and movies dealing with psychological problems.

The classroom is well supplied with books and magazines on science.

The teacher really enjoys good food and likes to talk about it sometimes.

There is quite a lot of going out together among the students in this classroom.

The teacher shows concern for the feelings of the students in this room.

In classroom discussions, papers and exams, the main emphasis is on breadth of understanding and critical judgment.

Students in this classroom would prefer a fast car to a safe one.

Discussions comparing differences in the style and development of current music forms - rock, soul, jazz, etc. - frequently occur in this classroom.

Students in this classroom are always coming up with new fads and expressions.

Students in this room take a great deal of pride in their personal appearance.

The teacher goes out of his way to be available to give extra help to anyone who needs it in this room.

Even if this teacher did like some students better than others, everyone here has the same opportunity to get good marks.

We tend to have a systematic daily classroom routine.

Humorous cartoons and pictures are often displayed in the room.

Most of what is learned in this classroom is of obvious practical value.

Students are given plenty of time to think about classroom questions.

In this classroom there are not many opportunities for the discussion of scientific topics.

The view from the windows of this classroom is not particularly beautiful or pleasing.

Several boys have selected seats to be near girls they like.

Outside the classroom the teacher is friendly and often chats with the students.

Quite frequently students will get together on their own and talk about things they have learned in this classroom.

Posters, drills, or slogans stressing physical safety are to be found in this classroom.

Few students in this classroom would be interested in a film about writers or poets.

Students frequently do things on the spur of the moment in this classroom.

Looking and acting "right" is important to the teacher and students in this classroom.

There is no interest in this class in collecting packets of food, clothing, books, etc., to help others.

If the student does something wrong the teacher is usually understanding and gives him the benefit of the doubt.

Students take great pains to keep their essays, worksheets, and notebooks neat and legible.

The teacher sometimes includes foolish questions in an exam just to make students laugh.

Despite the satisfaction that some students get from this classroom, they would agree that it has little to do with earning a living.

The teacher likes students to use a lot of imagination and creativity and gives encouragement to those in this room who do.

It would not be appropriate to submit the work that students do in this classroom to a science contest or science exhibit.

Little goes on in this classroom that contributes to one's sense of pleasure in the physical experience of sound, color, texture, etc.

Some of the books read in connection with this classroom include references to sex.

The person who is always trying to "help out" is likely to be regarded as a nuisance in this room.

We rarely discuss serious subjects in this classroom or try to get to basic causes.

Students in this classroom are seldom reminded to take preventative measures against illness.

Students in this classroom seldom read books which deal with political or social issues.

Students seldom start things unless they have thought them through with great care.

Students in this classroom spend a lot of time decorating their notebooks and book covers.

Students often run errands and do other personal favors for this teacher.
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201. Students are sometimes penalized without fully understanding the reason for it.
202. In this classroom the mottos seems to be "a place for everything and everything in its place."
203. Having a good time comes first with most students in this classroom.
204. The teacher is good at operating the instructional equipment — projectors, recorders, etc. — in this classroom.
205. Students really don’t think very deeply about ideas presented in this classroom.
206. Students in this classroom have very little interest in science.

207. There is no student art work on display in this room.
208. Students in this classroom are not particularly concerned about modesty in speech or dress.
209. Students usually select their own topics or projects.

210. The teacher is a real scholar.
211. Procedures to be followed in case of fires, air raids, or earthquakes, etc., are prominently posted in the classroom.
212. Students from this classroom seldom get together to discuss current social problems and issues.

213. Some students don’t seem to have much control over their behavior in this classroom.
214. Students in this room who are not neatly dressed are likely to have this called to their attention.
215. Students show deep concern when a classmate is having a difficult time or is in trouble in some way.

216. If a student prepares a report or essay carefully, the teacher will give him a good mark, even if the teacher doesn’t agree with him.
217. The attendance is carefully checked each class period.
218. New jokes and funny stories get around this classroom in a hurry.

219. The skills developed in this classroom will continue to be useful throughout a person’s lifetime.
220. In this classroom there is little concern for serious religious or ethical matters.

221. Students in this classroom are encouraged to plan their own science lab projects.

222. Students occasionally kick off their shoes to be more comfortable.
223. In this classroom the teacher usually knows who is going out with whom.
224. The teacher takes the attitude that students in this classroom should work out their own problems.

225. On written work in this classroom, neatness and proper style count more than intelligence and insight.
226. Quite a few students from this classroom smoke.

227. Students in this classroom seldom talk about modern literature or poetry.

228. Students in this room sometimes make sudden comments that have little to do with the lesson.

229. No one seems to notice if a student comes to the class with new clothing or a different hair style.

230. The teacher encourages the students in this room to develop an attitude of service to their fellow man.

231. The teacher treats questions in the classroom as if the students were criticizing him personally.

232. The classroom often looks a little untidy.
233. Everyone has a lot of fun in this classroom.
234. Students in this room are skillful in working together to solve problems.

235. Students in this classroom would enjoy discussing different ideas of truth.
236. This classroom provides an opportunity to work in a well-equipped science laboratory.

237. The teacher makes a point of wearing clothes that are comfortable as well as attractive.

238. Students from this classroom fall in love or get crushes on each other rather easily.
239. The teacher is not interested in students’ personal problems.

240. The teacher does little more than repeat what is in the textbook.

241. Any condition that might be considered a physical hazard (loose floor board, drafty room, etc.) is quickly corrected.
242. Students in this room like to talk about the words of current popular songs that refer to matters of social significance.

243. Students rarely say the first thing that occurs to them.

244. The teacher encourages the students in this room to be well dressed and well groomed.
245. Students from this classroom really support community fund drives.

246. There is a feeling of distrust and suspicion in this room.

247. The teacher finds it difficult to keep to any routine.
248. The teacher enjoys himself in the classroom and wants others to have a good time too.

249. The classroom atmosphere is practical, emphasizing efficiency and usefulness.

250. The teacher welcomes the students’ own ideas on serious matters.
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251. In this course there is not much use of effective audio-visual aids to develop scientific concepts.
252. Much has been done with pictures, colors, and decorations to make the room pleasing to the eye.
253. There is a lot of horseplay between the sexes in this classroom.
254. One nice thing about this classroom is the personal interest the teacher takes in the students.
255. The teacher is deeply interested in what he teaches.
256. Everyone here is "safety-first" conscious, making sure nobody will get hurt.
257. Students frequently discuss drugs, crime, pollution, and other current social problems in the classroom.
258. There is much shouting and yelling as students enter or leave the classroom.
259. Good manners and making a good impression are important in this room.
260. The teacher is actively interested in charities and community services.
261. The teacher always seems to think the students are up to something and makes the worst of even small happenings.
262. Most students carefully preserve their classroom notes, tests, and other instructional materials.
263. The teacher seldom tells jokes or funny stories in class.
264. The teacher stresses the practical use of this subject in helping students to get a good job.
265. Long, serious classroom discussions are common.
266. Students from this classroom frequently work in the science lab on their own time during free periods or after school.
267. There are no paintings or sculpture in this room.
268. Students sometimes tell jokes in this class that some people would consider dirty.
269. The teacher is always willing to help you.
270. In this class there is a lot of interest in learning for its own sake, rather than just for marks.
271. Few students in this classroom bother with raincoats, hats, or other special protection against the weather.
272. This teacher is concerned with problems and issues in modern society.
273. Students frequently speak up in this classroom without worrying about what they are going to say.
274. Some students in this classroom are so wrapped up in their own concerns that they seem unaware of the existence of others.
275. When someone is out sick for a while, the other students in this room let him know he is missed.
276. Students who do good work get good marks in this room, even if the teacher doesn't happen to like them personally.
277. Storage shelves and bookcases are carefully labeled.
278. The teacher in this room takes himself very seriously and rarely smiles or jokes with the students.
279. Learning to work with others is emphasized in this classroom.
280. Students are seldom encouraged to think about their own personal values and beliefs in this class.
281. Scientific method is emphasized in this classroom.
282. Eating candy is not allowed.
283. In this classroom couples frequently sit together, hold hands, whisper, or pass notes.
284. In this room students seldom share their problems with each other.
285. This classroom is outstanding for the emphasis and support given to "genuine scholarship and sound thinking."
286. The teacher in this classroom shows little concern for the health of the students.
287. Most students in this classroom are not interested in television programs dealing with social and political problems.
288. Many classroom activities are unplanned and spontaneous.
289. Students here have a great deal of social poise.
290. If the teacher were ill, students in this classroom would send a get-well card.
291. This teacher seems moody and hard to understand.
292. The teacher in this classroom is extremely methodical and systematic.
293. The teacher in this classroom likes to tell amusing stories about his personal life.
294. Most students from this classroom are interested in careers in business, engineering, management, and other practical affairs.
295. The kinds of questions asked in this classroom promote deep thinking.
296. Several students from this classroom have conducted their own personal scientific experiments at home.
297. The teacher has put a lot of effort into making this room pleasing and comfortable.
298. Frank discussions about sex are not uncommon among the students in this classroom.
299. A student having difficulty with this course can expect to be helped by his classmates.
300. The really satisfying thing about this classroom is the intensity and depth of the discussions we sometimes get into.
1. Abasement - Assurance

Aba

Reflects an environment which tends to degrade or humiliate the individual. Discourages self-confidence. Sanctions boat-rocking.

Ass

Environment which instills confidence in the individual and encourages individual pride.

2. Achievement

Ach

Encourages individual initiative, creativity, and striving to surmount obstacles. Promotes a can-do mentality.

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.

3. Adaptability - Defensiveness

Ada

Reflects an environment where sanctions for making mistakes are high; where people learn to deal with others because their actions are constantly subjected to evaluation and review.

Bla

An environment which suppresses individual arrogance and hostility.

4. Affiliation

Aff

A friendly, groupish environment which discourages social detachment or independence.

Bla

An environment which suppresses individual arrogance and hostility.

5. Aggression - Blame Avoidance

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.
6. Change - Sameness

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.

Sam

An environment which is geared toward routine and convention. Little change takes place over the years.

7. Conjunctivity - Disjunctivity

Cnj

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

Daj

An environment which keeps people off balance because of its disorganized and rambling nature. Those in key positions do not convey their expectations of others well.

8. Counteraction

Ctr

A climate which encourages individuals to take up challenges for their own part and to be critical of others’ decisions which affect them. Encourages individuals not to accept defeat.

9. Deference - Restiveness

Dfr

An environment where a strong consciousness of rank exists. Behavior which does not reflect acknowledgement of rank is discouraged.

Rst

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

10. Dominance - Tolerance

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 dominate others through

Tol

An environment characterized by mutual respect and tolerance. Egalitarianism and non-intervention are highly valued.
assertiveness or manipulation.

11. 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.

12. Emotionality - Placidity

Emo

Plc

The environment is marked by intense, open emotional expression.

An environment marked by restraint, dignity, and control. Calm, collected, mild mannered.

13. Energy - Passivity

Eny

Pas

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

A sluggish, slow, passive, climate, lacking vigor or enthusiasm.

14. Exhibitionism-Inferiority Avoidance

Exh

Inf

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.

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 extroversion, and keep public display to a minimum.

15. 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.
16. Harm avoidance - Risktaking

Har

A sheltered environment, particularly with regard to physical danger. Prudence and caution are admired; cavalier attitudes are thought to be foolish and adolescent.

17. 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.

18. Impulsiveness-Deliberation

Imp

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

19. 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.

Risk

Reflects a devil-may-care attitude. 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.

Del

Environment which discourages snap judgements or quick action. Restraint and reflectiveness are highly regarded.
20. **Nurturance**

*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.

21. **Objectivity - Projectivity**

*Obj*  
An environment marked by confidence in one's own and in others' ability to assess situations objectively.

*Pro*  
An environment characterized by distrust, suspicion, subjectivity and uneasiness.

22. **Order - Disorder**

*Ord*  
Compulsive organization in the immediate physical environment manifested in a preoccupation with neatness, orderliness, arrangement, and meticulous attention to detail.

*Diso*  
An environment characterized by disorder, confusion, neglect, messiness, or disarray. Pattern or arrangement is lacking and little attention is paid to detail.

23. **Play - Work**

*Ply*  
A climate characterized by sustained pursuit of enjoyment, entertainment, and amusement. A nonchalant attitude toward work.

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

24. **Practicalness-Impracticalness**

*Prac*  
Environment which emphasizes efforts in concrete, pragmatic, conventional, visibly useful, or tangible productive activities to the relative exclusion of more abstract, speculative, creative, or intellectual undertakings.

*Imp*  
Environment which manifests strong interest in abstract, speculative, theoretical, creative, or intellectual undertakings and indifference toward practical affairs.
25. Reflectiveness

Ref

A climate which encourages contemplation, introspection, or preoccupation with private psychological, aesthetic, spiritual, or metaphysical experience. Encourages the seeking of spiritual self-satisfaction.

26. Science

Sci

Environment which encourages analysis and manipulation of physical objects through reflection, discussion, criticism, and empirical analysis.

27. Sensuality - Puritanism

Sen

A casual, comfortable atmosphere which emphasizes self-gratification through sensual, exotic or aesthetic experience. An atmosphere that is marked by austerity, temperance, plainness, self-control, frugality, and self-denial.

28. Sexuality - Prudishness

Sex

An atmosphere filled with erotic heterosexual interests and activities. An atmosphere which is restrained or inhibited with regard to sex. An ascetic environment which denies sexual pleasure.

29. Supplication - Autonomy

Sup

An environment where people depend on one another for emotional support, assistance, and protection. An environment which encourages autonomy and self-reliance. Individuals tend not to cater to one another.
30. Understanding

Und

An environment oriented toward detached intellectualization, in-depth problem solving analysis, theorizing, or abstraction.
First Order Scores

Analysis of the 30 scales extracted six first order environmental factors. They are listed and defined below. The definition of each score is followed by a list of the press scales from which the score was originally derived.

1. Humanistic Intellectual Climate

This factor has much in common with the Intellectual Climate factors of other Indexes. It includes aspects of achievement together with elements of contemplation and social concern.

(Fantasied achievement, Change, Reflectiveness, Ego achievement, Humanities-Social Science, Understanding)

2. Group Intellectual Life

Similar to the Group Life factors of other Indexes, this factor includes an intellectual dimension as well. It includes aspects of intellectuality, reflectiveness, objective thinking, and practically. It lies closer to the development axis than does Humanistic Intellectual Climate.

(Harm avoidance, Supplication, Nurturance, Objectivity, Understanding, Practicalness, Reflectiveness)

3. 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.

(Achievement, Energy, Adaptability, Conjunctivity, Emotionality)
4. Personal Dignity

This factor indicates individual responsibility and personal autonomy. It is characterized by tolerance, self-confidence and friendliness.
(Aggression, Dominance, Abasement, Defference, Counteraction, Affiliation)

5. Orderliness

Classrooms scoring high on this factor would be characterized by caution, seriousness, and austerity. This factor lies close to the control axis.
(Impulsiveness, Play, Order, Exhibitionism, Sensuality)

6. Science

A high score on this factor involves an interest in the natural sciences, together with aspects associated with sexuality and egotism.
(Science, Sexuality, Narcissism)

Second Order Scores

The 6 first order environmental dimensions are combined to produce second order scores. These Area Scores are defined below. The factors that contribute to each area score are listed after the area description.

Area I - Development Press:
The first four factors consist of those characteristics of the environment that are related to intellectual and interpersonal activities. They are similar to factors previously extracted from
the College Characteristics Index and the High School Characteristics Index.

(Humanistic intellectual climate, Group intellectual life, Achievement standards, Personal dignity)

Area II - Control Press

The Control Press factors describe the degree to which there is emphasis upon orderliness, bureaucratic administrative procedures, and cautiousness. Self-aggrandizement is de-emphasized. The high control press is associated with the absence of a press for science. (Orderliness, Non-science)

### Classroom Environment Index Form CEI - 971

**INDIVIDUAL NORMS: N = 939**

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Table 1

Incremental Changes in Variance Associated with Regression Analysis of Moral Reasoning Level and Teaching Style

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* p<.05
Table ii

Intercorrelation of the Principles of Adult Learning Scale Total Score with its Subscale Scores

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<th>PASN</th>
<th>PCB</th>
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two-tailed significance: * p < .05; ** p < .01 (n=34)
Table iii

One-way analysis of variance of teaching style by subjects taught.

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(n=34)
Table iv

Intercorrelations of Independent Variables

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<th>Post Level</th>
<th>Subj. Teaching</th>
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* p<.05; ** p<.01
### Table v

**Distribution of teaching style scores to Level 5-Principled thinking scores**

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<th>Teaching style</th>
<th>Learner-centered</th>
<th>+.5 to -.5 SD's of the sample mean</th>
<th>Below -.5 SD of sample mean</th>
<th>Row Total</th>
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<td>Low 10 thru 26.7</td>
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**Column Total** | 7 | 18 | 9 | 34

*Note. Teaching style score categories: Learner-centered = 123 thru 158; 1/2 SD above and below mean = 97 thru 118; below -.5 SD = 67 thru 96.*