A DESCRIPTIVE STUDY OF CERTAIN SOCIO-PSYCHOLOGICAL CHARACTERISTICS OF SELECTED SECONDARY SCHOOL ENVIRONMENTS

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PREFACE

The problem of the dropout in our nation's schools is becoming of increasing importance. Increasing effort is being expended by education to reduce the rate of attrition and to retain our youth in the educational system so that they may emerge better equipped as successful productive citizens.

The purpose of this study was to test the feasibility of measuring and describing the psycho-social environment which surrounds and presses upon the high school student in the educational setting.

Since there is a national trend to meet the educational needs of the individual student it becomes important to attempt to devise ways in which the educational setting and atmosphere may be kept congruent to the student's needs. It is hoped that this study may make some small contribution to that end. The rewards have been most satisfying.

I would like to acknowledge my indebtedness to my committee: Drs. Victor Hornbostel, chairman; Gerald Leslie, Charles Larson, John Egermeier, and Clayton Morgan for their guidance and inspiration.

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CHAPTER I

INTRODUCTION

The term diversified certainly describes the student population in American education. In addition an implied lack of variety in facilities, programs and educational procedures for this great diversity in students is undoubtedly evident (36). Much of the recent federal legislation has been designed to aid communities to meet the diversified needs of each student.

In the past, efforts at educational improvement have shown considerable concern with facilities; with the quality, quantity and preparation of the teacher; with the adequacy and the appropriateness of the curriculum and the program; and with learning and teaching procedures, methods and techniques.

Ostensibly much of this concern has been directed toward meeting student-body needs and more recently even individual needs have come in for a share of consideration. Admittedly, however, most of the effort has been directed toward preparing the student to fulfill a

vocational role in an economic vacuum pump and consequently the "lion's share" of concern has been to prepare the general citizenry to meet their own physical needs in a complex society where even the definition of what constitutes a satisfaction of physical needs is both nebulous and far from being generally agreed upon.

For several years psychologists and sociologists have been interested in social and emotional needs and recently educators have been concerned with the learning atmosphere and its adequacy in meeting these needs. The concept of student-centered education has encompassed the idea that all the needs of all the students be met.

Recent studies have been directed toward a better knowledge of the influence of emotions and personality upon learning. Reports by Holland in 1961 and by Nichols and Holland in 1963 have demonstrated that the highest degree (educational aspiration level) planned by the student, at the time of graduation from high school, is related to the student's originality and achievement motivation in particular and to a variety of other personality characteristics.

A considerable body of evidence is being accumulated which seems to demonstrate that a student's field of study

and choice of vocation are indicative of certain personality traits, values and life goals. (4, 10, 11, 28, 48)

Holland (27) pointed out that different types of colleges attract different kinds of students with characteristic patterns of abilities, values, goals, family backgrounds and personalities.

Pace (35) pointed out that students tend to select colleges where the environmental press, defined subsequently, is somewhat congruent to their own personality needs. Different personal temperaments respond to different environmental treatments. There is a growing interest in the significance of the congruence between student needs and the natures and demands of the school environment.

Concepts of environment range from the idea which some psychologists hold that it is external stimuli to the idea of some anthropologists that it is the culture. It can be seen that from the extent to which a school environment may be at least a sub-culture, its influence on students may be great.

The interaction between person and environment is infinitely complex and it poses an important question: What variety of impacts may particular types of schools have on

the educational and personal development of particular types of students?

A number of studies have been aimed at answering some of the many facets to this question. Murray (34) offered the concept of environmental press as a means of viewing the environment in ways comparable to those used to deal with the personality of individuals. A few studies have indicated that the press of an educational institution may be a product of certain attributes of the student body including its collective personality characteristics.

Davie (13) noted that satisfaction, as a function of the interaction between an individual and his environment, may be viewed in two ways: (a) with emphasis on the individual's effort to satisfy his needs as he manipulates the environment, satisfaction being measured in terms of drive reduction, or (b) with emphasis on the environment as it imposes requirements to which the individual must adjust, satisfaction being interpreted as a measure of the proper fit of the adjustment.

Astin (1), in a study of educational productivity, showed that the proportion of high school seniors planning to major in the material sciences was highly related to several student and faculty press variables. On the other

hand, both Becker, et al, (8) and McFee (33) conclude that the results of scores on the College Characteristics Index (to be explained later) are independent of the adjustment and personality needs of the individual respondent.

Studies by Barton (7), Astin (2), Davis (15), Eddy (17), McConnell and Heist (32), Pace (35, 36, 37), Pace and McFee (38), Stern (48-51), Thistlethwaite (55) and others indicate that there are measurable environmental climates at colleges, which may vary from college to college; and that these climates have a bearing on the need patterns of individual students as well as on their learning activities.

There is a further indication that the reputation of a college or university tends to create an "image" of the institution as being a particular "kind" of a place. There is a further indication that (42) particular "kinds" of students tend to choose the institution with a particular "image" and thus, through a process of self-selection, contribute to the image.

There is some question as to whether the same condition may exist at the secondary level. Only in certain private secondary schools do the students have the right of selection. In a few public vocational schools the same right may also exist. In both cases, however, the

right to admittance may be conditional. In the vast majority of the public secondary schools students are compelled to attend a particular school on the basis of its location within the area where they reside. This raises the question as to whether secondary student bodies may be of a particular "kind" since there is a very restricted selective factor. Since the vast majority of secondary schools do not advertise for students and hence may not gain a very wide reputation, it is questionable as to whether the secondary school may have an environmental "image" in the sense that colleges have.

Regardless of the answers to these two questions there is certainly some interaction between the secondary student and his educational environment. It is with the measurement of these two factors that the present study is concerned.

Need For the Study

One of the most pressing problems in the secondary school today is that of the drop-out. A great deal of time and money is being expended by many groups and individuals in an attempt to understand the underlying causes for dropping out of school and to find ways of effectively reducing the number of drop-outs. Recent

studies have indicated that, among several reasons given for dropping out of school, one was that the drop-out expressed that he had not liked school and that it had not met his needs.

Such a feeling on the part of students could come about as a result of the environmental press which the school exerts upon the student. There is a definite need to find means of measuring the environmental press of secondary schools and to compare the congruency of such press to the personality needs of individual students.

Such measurement could furnish to secondary school administrators a vital part of the information necessary to enable them to provide a more inclusive and diverse educational program for a constantly changing student citizenry. Information contained in this survey may help to more nearly clarify some of the problems encountered in such measurement.

Statement of the Problem

The purpose of the present study was to measure and describe the student body personality needs at selected secondary schools as indicated by the response of a selected sample of students from each school to a standardized measuring instrument, the Stern Activities Index,

and to measure and describe the environmental press factors of the same secondary schools as indicated by the same samples of student responses to the measuring instrument, the High School Characteristics Index.

Specifically, the problem was to select five samples from a high school setting or environment, and to record observations of the indicated presence of need and press forces for each sample. Secondly it was necessary to compare the samples to determine any need and press differences which might exist among the five school samples. The question was whether the measurement of various high school settings would result in need and press differences among the samples.

Hypotheses

This study was concerned with measuring and comparing the existence, in certain selected high school samples, of any or all of thirty personality need variables (scales) of the student bodies represented by the samples as well as any or all of the thirty press variables in the environments presented by each of the selected school settings.

Since the main concern was with the measurement and description of environmental press, rather than individual

personality needs, it was not necessary to make a comparison of separate need items. However, since each variable was composed of ten separate measureable conditions (items) of press, with each condition being described by a separate statement or phrase, the study was concerned with measuring and comparing the separate press conditions (items) as well as the variables (scales).

It was anticipated that in all the sample observances that the frequency of the mean number of observations (scores) for some press items would vary sufficiently from a hypothetical population mean frequency of .5 that for those items a condition of environmental press could be said to exist.

It was further anticipated that a comparison of press items would reveal some that were significantly different from one another to indicate a difference in the level or intensity of some press items.

It was also anticipated that the means for the individual press-scales would differ sufficiently between samples to indicate a significant difference in that press factor among the samples and that clusters of these factoral differences would indicate differences in the environmental press between schools.

It was also anticipated that similar sample differences would exist for the need-scales.

Stated formally, the null hypotheses tested were:

(1) The mean of frequency scores of no sample press item will differ significantly (at the 95 percent confidence level) from a population hypothetical mean frequency of .5.

(2) The mean of frequency scores of no sample press item will differ significantly (95 percent confidence level) from any other.

(3) There will be no significant difference (95 percent confidence level) in the means of an individual press-scale among the samples.

(4) There will be no significant difference (95 percent confidence level) in the means of an individual need-press scale among the samples.

Scope and Limitations

This study will be an attempt to show that (in spite of the limited chances which students have to select the high school they attend) it is both possible and feasible to measure and identify significant differences among various existing conditions of personality need and environmental press in selected high school settings.

The study is limited to five samples of high school age subjects and their responses to two instruments of measurement. There will be no attempt to generalize from either the samples or the instruments.

Chapter II contains a historical summary of the measurement of college environment. This information serves to support the content validity of the two instruments. Chapter III contains information concerning the research model and the statistical procedures used in the study. Chapter IV contains the findings from the statistical treatment of data and Chapter V lists conclusions and recommendations.

CHAPTER II

A HISTORICAL SUMMARY OF THE MEASUREMENT OF COLLEGE ENVIRONMENT

For many years a few psychologists, analysts and therapists have given their attention to the problem of trying to form an adequate and conceptual picture of the total personality. One of the most important concerns in these attempts has been to explain the energy, force or motivation which impells the organism into action and which in turn results in behavior.

Freud assumed that behavior is a result of a psychic energy, which he called the libido, and which he described as having been discharged by the instinctual drives. These drives express themselves in the form of desires for certain object choices by the person. Most important of these object choices are parts of the person's own body, the mouth, the anus and the genitals, after which comes a desire for the mother.

Later psychologists, including some of the neo-Freudians such as Horney and Fromm and others such as

Sullivan, Allport and Lewin have insisted that motives are learned and developed through interaction with the social and/or the cultural environment.

Adler saw the primary drive not as coming from the libido or sex but rather as an innate striving for mastery and power which would overcome the inferiority which comes from the early state of supreme dependency of the child.

Horney also rejected the libido concept and put in its place the drive to satisfy a need for security and safety in a potentially dangerous world.

All of these theorists attacked the problem of personality from a particular or restricted set of constructs. Murray was one of the first to utilize a broader approach.

Murray's Needs-System Personalogy

Murray's Personalogy (34) may be best described as a pluralistic rather than a particularistic system. He faced the problem of trying to form an adequate conceptual picture of a total personality by drawing on as many different schools of thought as possible. Besides a large staff at the Harvard Psychological Clinic, which was at his disposal, he brought together a number of experts with different orientations. Included among them were

Erickson, DuBois, Dyle and McKeel. The entire group worked together for over two years on the problem of constructing a conceptual scheme for personality which would allow them to handle a vast amount of case materials being collected on a group of subjects then under intense psychological study.

The group started with a concept of personal need which they defined as follows:

> A need is a construct (convenient fiction or hypothetical concept) which stands for a force (the physicochemical nature of which is unknown) in the brain region, a force which organizes perception, apperception, intellection, conation, and action in such a way as to transform in a certain direction as an existing, unsatisfying situation. (34)

The psychologists working on this study then produced a long list of needs drawn from the knowledge and experience of their various backgrounds which met the criteria set down in the definition. (See Table I.)

Murray and his colleagues also attempted to simplify and classify the effects of environment on the personality. They classified what happens to the person in terms of its effect or potential effect upon him. They called this effect environmental <u>press</u>.

> The <u>press</u> of an object is what it can do <u>to the subject</u> <u>or for the subject</u>--the power that it has to affect the well-being of the subject in one way or another. (34)

Thus Murray attempted to classify the behavior potential of the environmental press in exactly the same manner that he classified the behavior of a person in terms of a system of need analysis. In the end he adopted a number of items which may be used as criteria for the description of both needs and press. An adaptation of these, as taken from Hall and Lindzey, is shown in Tables I and II. (24)

Murray used these criteria to refer to the objectives which a person characteristically strives to achieve for himself and as organizational tendencies which appear to give unity and direction to his personality.

Institutional Application

The environmental press of an educational institution, then, would define what a student must cope with to clarify the direction of his behavior if he is to find satisfaction, reward and success within a particular environmental setting. Such a setting would include the cumulative rules, regulations, and personnel policies; classroom practices; student organizations and activities; interests, activities and practices of the staff and administration; and the physical features and facilities of the campus including classrooms, laboratories, living and eating facilities and the grounds.

TABLE I

ILLUSTRATIVE LIST OF MURRAY'S NEEDS*

Need	Brief Definition
n Abasement	To submit passively to external force. To accept injury, blame, criticism, punishment. To surrender. To become resigned to fate. To admit inferiority, error, wrongdoing, or defeat. To confess and atone. To blame, belittle, or mutilate the self. To seek and enjoy pain, punishment, illness and misfortune.
n Achievement	To accomplish something difficult. To master, manipulate, or organize physical objects, human beings, or ideas. To do this rapidly and as independently as possible. To overcome obstacles and attain a high standard. To excel oneself. To rival and surpass others. To increase self-regard by the successful exercise of talent.
n Affiliation	To draw near and enjoyably cooperate or reciprocate with an allied other (an other who resembles the subject or who likes the subject). To please and win affection of a cathected object. To adhere and remain loyal to a friend.
n Aggression	To overcome opposition forcefully. To fight. To revenge an injury. To attack, injure or kill another. To oppose forcefully or punish another.
n Autonomy	To get free, shake off restraint, break out of confinement. To resist coercion and restriction. To avoid or quit activities prescribed by domineering authorities. To be unattached, irresponsible, to defy convention.

TABLE I (Continued)

Need	Brief Definition
n Counteraction	To master or make up a failure by re-striving. To obliterate a humiliation by resumed action. To overcome weak-ness, to repress fear. To efface a dis-honor by action. To search for ob-stacles and difficulties to overcome. To maintain self-respect and pride on a high level.
n Defendance	To defend the self against assault, criticism and blame. To conceal or justify a misdeed, failure or humilia-tion. To vindicate the ego.
n Deference	To admire and support a superior. To praise, honor or eulogize. To yield eagerly to the influence of an allied other. To emulate an exemplar. To conform to custom.
n Dominance	To control one's human environment. To influence or direct the behavior of others by suggestion, seduction, per-suasion, or command. To dissuade, restrain, or prohibit.
n Exhibition	To make an impression. To be seen and heard. To excite, amaze, fascinate, entertain, shock, intrigue, amuse or entice others.
n Harmavoidance	To avoid pain, physical injury, illness, and death. To escape from a dangerous situation. To take precautionary measures.
n Infavoidance	To avoid humiliation. To quit embar-rassing situations or to avoid condi-tions which may lead to belittlement; to scorn, derision, or indifference in others. To refrain from action be-cause of the fear of failure.

TABLE I (Continued)

n Nurturance	To give sympathy and gratify the needs of a helpless object; an infant or any object that is weak, disabled, tired, inexperienced, infirm, defeated, humiliated, lonely, dejected, sick, mentally confused. To assist an object in danger. To feed, help, support, console, protect, comfort, nurse, heal.
n Order	To put things in order. To achieve cleanliness, arrangement, organization, balance, neatness, tidiness, and precision.
n Play	To act for "fun" without further purpose. To like to laugh and make jokes. To seek enjoyable relaxation of stress. To participate in games, sports, dancing, drinking parties, cards.
n Rejection	To separate oneself from a negatively cathected object; to exclude, abandon, expel, or remain indifferent to an inferior object. To snub or jilt an object.
n Sentience	To seek or enjoy sensuous impressions.
n Sex	To form and further an exotic relationship. To have sexual intercourse.
n Succorance	To have one's needs gratified by the sympathetic aid of an allied object. To be nursed, supported, sustained, surrounded, protected, loved, advised, guided, indulged, forgiven, consoled. To remain close to the devoted protector. To always have a supporter.
n Understanding	To ask or answer general questions. To be interested in theory. To speculate, formulate, analyze, and generalize.

*Adapted from Murray, 1938, pp. 152-226

TABLE II

ABBREVIATED LIST OF PRESS*

1. p Family Insupport
   - a. Cultural Discord
   - b. Capricious Discipline
   - c. Family Discord
   - d. Parental Separation
   - e. Absence of Parent: Father, Mother
   - f. Parental Illness: Father, Mother
   - g. Death of Parent: Father, Mother
   - h. Inferior Parent: Father, Mother
   - i. Dissimilar Parent: Father, Mother
   - j. Poverty
   - k. Unsettled Home

2. p Danger of Misfortune
   - a. Physical Insupport, Height
   - b. Water
   - c. Aloneness, Darkness
   - d. Inclement Weather, Darkness
   - e. Fire
   - f. Accident
   - g. Animal

3. p Lack or Loss
   - a. of Nourishment
   - b. of Possessions
   - c. of Companionship
   - d. of Variety

4. p Retention, Withholding Objects

5. p Rejection, Unconcern, and Scorn

6. p Rival, Competing Contemporary

7. p Birth of Sibling

8. p Aggression
   - a. Maltreatment by Elder Male, Female
   - b. Maltreatment by Contemporaries
   - c. Quarrelsome Contemporaries

9. p Dominance, Coercion, and Prohibition
   - a. Discipline
   - b. Religious Training

10. p Nurturance, Indulgence

11. p Succorance, Demands for Tenderness

12. p Deference, Praise, Recognition

13. p Affiliation, Friendships

TABLE II (Continued)

14. p Sex

    a. Exposure
    b. Seduction: Homosexual, Heterosexual
    c. Parental Intercourse

15. p Deception or Betrayal

16. p Inferiority

    a. Physical
    b. Social
    c. Intellectual

* Adapted from Murray, 1938, pp. 291-292

It is estimated that no single institution will rate significantly either high or low in all the items but rather will have some of the items in a press pattern which may psychologically tend to point to some types of behavior as having the potential to produce some satisfaction and reward in that particular environment.

The work of Murray and his associates created a great deal of interest in others. It also raised some questions, among the latter are two which we shall consider in this chapter. The first is concerned with press. Do educational institutions have particular environments which may vary from school to school? The second question concerns the personal needs system. Is there enough similarity about the needs of persons in a particular group of students to form a pattern of needs for that group which may vary from similar groups in different school settings?

The Development of Measuring Instruments

Before either question could be answered it was necessary to find ways and to devise instruments for measuring the needs of persons and the press of environments. Measurement of personality (in terms of need) seems to have progressed faster than that of measuring environments in terms of press.

In 1941 Hathoway and McKinley published the Minnesota Multiphasic Personality Inventory. It contains 550 statements to which the subject is asked to rate himself. He marks each statement as true, false, or unable to say. The test results are expected to yield a profile which, when matched with the norms, will indicate whatever tendencies the subject may have in the direction of behavior disturbance or maladjustment. Included are the categories of depression, hysteria, psychopathic deviation, masculinity and feminity, paranoia, psychasthenia, schizophrenia, hypomania and social introversion.

In 1943 Murray published his Thematic Apperception Test (TAT). It had been developed shortly before the start of the work which developed the concepts of needs and press and was used, along with the Rorschach and other measuring instruments to gather data for that project.

The TAT consists of a series of pictures to which the subject is asked to respond with a story about the pictured events. Analysis of these stories is purported to reveal something of the personality of the subject including his psychological needs pattern.

Edwards released his Personal Preference Schedule in 1959. It contained a number of scales which were based directly on Murray's need items. It has proven to be one

of the more popular instruments used during the subsequent years.

These three are illustrative of some of the attempts to find instruments for the measurement of the human personality. They are highly subjective and serve to emphasize the problem encountered in attempts at objective measurement. Others have been designed for use with both individuals and groups.

The Activities Index

In the early 1950's Stern, Stein and Bloom (53) developed an instrument for measuring personality needs known as the Activities Index. It was developed for use at the University of Chicago in a series of psychological assessment studies conducted by the university examiner's office. Its function in the studies was to provide a broad measure of personality for use in predicting academic success in various types of educational programs.

It has since gone through a number of revisions. The current form consists of 300 true-false items organized into 30 scales of ten items each. A comparison of the 30 scales (as shown in Table III) will indicate that they are very similar to the list of psychological needs as expressed by Murray and his associate.

TABLE III

NEED-PRESS SCALE DEFINITIONS*

1. aba Abasement--ass Assurance: self-depreciation versus self-confidence.

2. ach Achievement: striving for success through personal effort.

3. ada Adaptability--dfs Defensiveness: acceptance of criticism versus resistance to suggestion.

4. aff Affiliation--rej Rejection: friendliness versus unfriendliness.

5. agg Aggression-- bla Blame Avoidance: friendliness versus inhibition.

6. cha Change--sam Sameness: flexibility versus routine.

7. cnj Conjunctivity--dsj Disjunctivity: planfulness versus disorganization.

8. ctr Counteraction--inf Inferiority avoidance: restriving after failure versus withdrawal.

9. dfr Deference--rst Restiveness: respect for authority versus rebelliousness.

10. dom Dominance--tol Tolerance: ascendancy versus forbearance.

11. e/a Ego Achievement: striving for power through social action.

12. emo Emotionality--plc Placidity: expressiveness versus restraint.

13. eny Energy--pas Passivity: effort versus inertia.

14. exh Exhibitionism-- inf Inferiority Avoidance: Attention-seeking versus shyness.

TABLE III (Continued)

15. f/a Fantasied Achievement: daydreams of extraordinary public recognition.

16. har Harm Avoidance--rsk Risktaking: fearfulness versus thrill-seeking.

17. hum Humanities, Social Science: interests in the Humanities and the Social Sciences.

18. imp Impulsiveness--del Deliberation: impetuousness versus reflection.

19. nar Narcissism: vanity.

20. nur Nurturance--rej Rejection: helping others versus indifference.

21. obj Objectivity--pro Projectivity: detachment versus superstition (AI) or suspicion (EI).

22. ord Order--dso Disorder: compulsive organization of details versus carelessness.

23. ply Play--wrk Work: pleasure-seeking versus purposefulness.

24. pra Practicalness--ipr Impracticalness: interest in practical activities versus indifference.

25. ref Reflectiveness: introspective contemplation.

26. sci Science: interests in the Natural Sciences.

27. sen Sensuality--pur Puritanism: interest in sensory and esthetic experiences.

28. sex Sexuality--pru Prudishness: heterosexual interests versus their inhibition.

29. sup Supplication--aut Autonomy: dependency versus self-reliance.

TABLE III (Continued)

30. und Understanding: intellectuality.

*Taken from Stern, 1963, pp. 2-3.

The 300 items in the Index are sentences describing commonplace activities which the authors believe are illustrative of the need structure as described by Murray. The subject accordingly records his likes or dislikes for each item of activity. A working manual has been developed to describe the Index and its norms in detail. (47, 52)

Many of the persons concerned with personality during these years were disappointed in the information they could glean from a measurement of personality alone. Many of them felt that the forces impinging upon the individual might constitute an important adjunct to personality.

Murray had insisted that this was so. He had emphasized the fact that in his theory needs and press are interrelated so that needs are fundamental to press. It must be noted that press does not represent objects and persons in one's environment in any real sense but rather press represents the perceptual meaning which the individual attaches to those environmental objects and persons.

In simplest terms a press is a self-perceived property or condition, of an outside object or person, which either aids or impairs the efforts of the individual to meet his needs or to reach a given goal. Thus press has direct implications for individual behavior in his efforts to satisfy his need strivings.

It seems logical, then, that anyone attempting to measure the personality needs of a person may also be interested in measuring that person's environment in terms of press and thus attempt to extract and classify those portions which may have a bearing on the subject and his adjustment.

Attempts to Measure Press

In the middle 1950's Stern moved from Chicago to Syracuse University in New York. There he met and began working with Pace. The two of them became interested in the relation of personal need and environmental press. Theirs is perhaps the outstanding work in this area but they were not alone. Others were working along similar lines.

From these environmental studies, which will be reviewed later in the chapter, it is clear that a variety of concepts had been found to be useful--such as role, reference group, interaction system, press and congruence.

While others were interested in environment for a variety of reasons Pace and Stern were interested in identifying the college environment and the ways in which it might function educationally and psychologically to influence student happiness, growth and success. They decided to pursue the needs-press concept of Murray and

subsequently a College Characteristics Index was constructed to measure the college press. This Index (CCI) is similar to and designed to serve as a companion piece to the Activities Index.

The College Characteristics Index (CCI)

The CCI consists of 300 statements about college environment to which the subject may respond by indicating "true" or "false." The 300 statements are organized into thirty scales of ten items each, with each press scale corresponding to a needs scale that is included in the Activities Index.

The individual items are statements about college life. They refer to classroom activities, teaching techniques, courses, curriculum, outside activities, rules, regulations, policies, attitudes, and similar items. The subject responds in such a way as to indicate his impression of each item.

> The following kind of questions guided the writing of the items: what might be characteristic of an environment which exerted a press toward order, or toward autonomy, or toward nurturance, or understanding, or play, etc.? Stated in another way, what might there be in a college environment which would be satisfying to or tend to reinforce or reward an individual who had a high need for order, or autonomy, or nurturance, or understanding, or play, etc.? (47)

For a person who has a high need for order one might find in a college environment some of the following items to be relevant:

> Faculty members and administration have definite and clearly posted office hours. In many classes students have an assigned seat. Professors usually take attendance in class. (47)

> Operationally press are the characteristic demands or features as perceived by those who live in the particular environment. To each statement in the College Characteristics Index the person who takes the test answers true if he believes it is generally characteristic of the college, is something which occurs, or might occur, is the way people tend to act or feel; and he answers false if he believes it is not characteristic of the college, is something which is not likely to occur, or is not the way people typically feel or act. (47)

The first draft of the CCI was administered in May, 1957, to 423 students and 71 faculty in five institutions. It was reasoned that if a dominant press pattern really existed in a particular environment that almost any group of persons living in that environment would probably identify it. The authors estimated that the student and faculty groups were in "tolerably good agreement" on about three-fourths of the total items.

Pace and Stern realized that to say that a particular press is or is not characteristic of a particular institution is an arbitrary matter. This particular testing program was designed as a preliminary try-out of the

instrument to determine the potential utility of such an approach to measuring college characteristics. What they subsequently found was sufficient to convince them that there are significant differences in the press of different college environments.

Since the first test-run was reported in 1958, the CCI has had three revisions. Many investigators have used it, together with the Activities Index, to study educational institutions and their students. The results have been more than gratifying to the authors.

Progress in Testing the Educational Environment

In 1949 Kelly had proposed that a college culture is a matrix which includes three interacting elements: (a) the culture the student brings to the campus, (b) the established culture of the college community, divided into faculty and student mores, and (c) the material, physical structure and equipment of the college campus. (30)

In 1956 Brown reported that he had found major types of college careers could be related to five patterns of college experience: (1) social and peer-group orientation, (2) over achievement, (3) underachievement with family orientation, (4) high achievement, and (5) search for identity. (10)

The same year, 1956, Freedman noted that a student body possesses characteristic qualities of personality which, like a culture, provide the basic content in which individual learning occurs. (20)

Davie and Hare (14) concluded that a small men's college which they called "Ivy" had a peer culture which was the most important single factor in student body experience.

In 1957 Jacob reported that he had found little evidence that courses, curriculum, or teaching methods had much influence on changing students' values. The same year Glicksberg noted that an impersonal atmosphere, plus a college emphasis on competition for success fostered cheating (22).

In 1958, while Pace and Stern were busy constructing and testing their College Characteristics Index, Reisman was suggesting that the distinctive ethos of certain colleges might be a simple reflection of the already existing view of students who chose to attend them.

Dressler and Mayhew (16), in reporting on a cooperative study of Evaluation in General Education for the American Council on Education, indicated that schools having students with high gains in the retested areas had certain institutional characteristics not present in the "low gain" schools.

Rust (43), in a Yale study on diverging study habits, hypothesized that achievement in college reflects a change in environment which acts differently on differences in personality and in values existing prior to college entrance.

Funkenstein noted that "the predominance of students with certain characteristics within a school determined to a great extent the atmosphere and the opportunities within the school" (21). Schools should be classified, he believed, as ideaistic and pragmatic. In ideaistic schools, students were concerned with self-understanding, abstract ideas, the arts, and literature; they saw medicine as a cultural tradition and were typically planning careers in research or teaching. In pragmatic schools, students emphasize concrete goals and economic and social prestige values and planned to become practitioners (21).

The importance of the over-all climate of the college was stressed by Eddy (17). After gathering data from 20 colleges he observed that the character of a college is a function of expectancy of performance, communications among groups, physical plant, and personal relationships among students and between students and faculty. He concluded that a college has its greatest impact when all components are emphasizing major goals.

Barton (7) saw the college as a system of interacting elements where different types of colleges would have specific effects on different types of students.

McConnell and Heist, in reporting from the Center for the Study of Higher Education, concluded that the atmosphere of a college is fixed by the student body (32).

Thistlethwaite (55) found that certain types of scales on the CCI were highly correlated with productivity in various fields such as the natural sciences, social sciences, arts and humanities.

Stern (48) found some tendency for students to attend colleges where the press was somewhat congruent with their needs. He also found that differences among the environments listed by the CCI were greater than the differences among the respective student groups as tested by the Activities Index.

Pace (35) reported on a refined study using factor analysis of data from the CCI. He found that the practical-intellectual, the practical-status-oriented, the group-welfare-oriented and the rebellious clusters accounted for most of the variance in environmental press at the 32 colleges.

In 1961 Pace, reporting on the diversity in college environments, verified the findings of his 1960 report. In

1962 he identified four major factors in the profiles of certain colleges and suggested several approaches to the further study of college environments.

In 1963 Davis studied the intellectual climate at 135 universities using data gathered from 33,982 students. He perceived that intellectual climate of colleges is a function of size, student values, student grades, and geographic location (15).

Stern made his most important report in 1963. He reviewed much of the work that he and Pace had completed up to that time. He also explained more carefully the purposes and the useage of both the CCI and the Activities Index.

His most important contribution was a summary of conclusions that had been drawn from all the previous research with the two instruments. A few of his major conclusions follow:

> 1. Significant relationships have been found between needs scale profiles of the AI and other forms of overt behavior, such as academic performance, study habits, reading skills, attitudes and values, deviant behavior, other personality processes, career choice and social background.
>
> 2. Professional workers in a field have exhibited higher standing on scales reflecting emotional controls and intellectual needs than have students preparing for work in the same fields, with the exception of teachers who when matched with education majors have shown lower intellectual needs.

> 3. Student bodies have been described by needs scales profiles that have been clearly seen to represent the personalized versions of the existing presses at their institution, although there has been greater variability between students as they described themselves on the AI than there has been on the CCI descriptions of their institutional press. (However, this discrepancy is not due to the fact that both sets of data are derived from the same students; for as McFee has shown, there is a negligible correlation between the needs preferences that students report for themselves and the press characteristics that they ascribe to their college environment, whether the responses are relatively impressionistic or subjective items or a factual or readily verifiable items.)
>
> 4. Significant relationships have been determined between profiles on press scales and types of institutions sampled. Specifically, three rather distinct types of colleges have emerged: (a) the denominational colleges, with marked emphasis on conformity, constraint, and dependence (the majority of colleges studied have tended to be relatively high in these characteristics); (b) the small private liberal arts colleges shown to have highest standing on the intellectual press as well as high emphasis on personal autonomy; (c) the colleges described by their students as sources of social pleasure and togetherness, although these colleges have typically lacked academic strength and scholastic purpose. (51)

The last major effort to measure college environment was reported by Astin in 1965. Using responses from 127,000 freshmen at 248 colleges, and after having made a factor analysis of 52 input variables, he identified six factors in the characteristics of the colleges studied; intellectualism, estheticism, status, leadership, masculinity, and pragmatism.

It is evident from the contributions herein reviewed that a number of noteworthy studies have been made in which

considerable empirical evidence has been submitted to describe various school environments.

Among the measureable factors found to have made a contribution to the variation in college environments have been institutional factors such as the change in environment from high school to college, group communication, interpersonal and inter group relations, expectancy of performance, institutional productivity in various fields of study, institutional size, geographic location and physical plant. An influence has also been exerted by student characteristics such as achievement (grades or academic performance), values and attitudes, study habits and reading skills, student body social background and career choices, student personality processes and deviant behaviors.

Several theoretical positions have been offered to account for the relationship between campus climate and student characteristics. In spite of the varied positions, however, most of them have one thing in common. They all agree that the climate of the college or university, by whatever means measured, seems to have an important effect upon the welfare and success of the student body.

Measurement at the Secondary Level

A High School Characteristics Index has recently been prepared by the authors of the College Characteristics Index with the aid of Dopyera, Woolsten, Woolfork, and Lyons. The first administration of this instrument was given to the incoming freshmen class of over 2,000 at a major Eastern university. The questions were answered in relation to the high school from which they had recently graduated (49).

Four major types of secondary schools were identified from the total representation; Private Preparatory, Parochial, Local Public, and Non-local Public. Some striking differences were noted between these four types of high schools. Intellectualism seemed to predominate at the private preparatory schools. The parochial schools seemed to foster a feeling of dependency in their students, while the public high school indicated a greater degree of independence.

At the time of this writing the manual for use with the Activities Index, the College Characteristics Index and related tests (including the High School Characteristics Index) had not been completed. A preliminary booklet was available which contained a few of the norms prepared for the indexes.

A comparison of the College Characteristics Index and the High School Characteristics Index revealed that many of the questions included in them are identical. Other questions had been changed to suit the difference in age and academic level of college and high school students without changing the basic meaning. Common changes were the substitution of words such as teacher for professor, class for course, school ground for campus, boys and girls for men and women.

Stern was convinced from the preliminary study, cited above with the High School Characteristics Index that the norms prepared for the College Characteristics Index could be used. Wherever norms are cited in this study they are those which Stern has given for both the CCI and the HSCI.

Stern in his study with the High School Characteristics Index had found significant differences in some environmental factors at different secondary schools. (49) The findings were very tentative, however, because of the small samples. There were 317 subjects representing 107 schools. Two public high schools accounted for 125 of the subjects with the remaining 192 subjects representing 105 schools with an average of less than two participating students per school. The limited size of the samples made it possible to compare only the results of public high school versus

private high schools. There was no opportunity for individual school comparisons.

In 1965 Herr administered the High School Characteristics Index to 725 students in one high school in an effort to "describe the global emphases of the school and the perceptions of these emphases by students at differing achievement and extra-curricular participation levels. (26)

Herr concluded that the explicit press--the expressed purpose of the school--and the implicit press--the perception of the students--should ideally be congruent.

Further research is needed to carefully and differentially isolate the factors contributing to the variation in climates. Only a small start has been made in measuring the environment of secondary schools and almost none has been attempted at the elementary level. A final step may well be to measure and describe the individual classroom.

Validity and reliability are usually considered to be the most important characteristics of a measurement instrument. Sometimes these two are considered as one criteria for test or measurement efficiency; sometimes they are considered separately. In any event the conclusions of any research report can be only as effective as the quantity and quality of the data will allow. A summary of studies to establish the validity and reliability of the AI and the HSCI follows.

Validity

Astin and Holland (4), in a study supported by a grant from the National Science Foundation, reported on a comparison between the College Characteristics Index and the Environmental Assessment Technique, an environmental measuring instrument which they had developed. They reported that 23 per cent of the coefficients of correlation between the two instruments were significant at the .01 level and 39 per cent at the .05 level.

Pace and Stern defended the validity of the AI and the CCI by pointing out that the most important approach to test efficiency is to treat validity and reliability as inseparable. (39) They also reported that they had found a high correlation between the scores from student responses and those from faculty responses concerning the environment of the same institution. Rank order correlations between the two group responses had been calculated for two different institutions and found to be .96 and .88 respectively. They pointed out that they felt that their evidence definitely indicated that the two instruments had the ability to reveal sharp distinctions between any two colleges which qualified observers had expected to be quite different. Their ability is another quality of the measurement of validity.

Stern (50), in defending the validity of the Activities Index had pointed out that the original function for which the instrument had been designed was to predict student success in various types of academic programs; and that subsequently the instrument had been successfully used in such a manner with persons ranging in age from 13 to 63 years in various social and educational strata. He also pointed out the Ebel Item Discrimination Index which was applied to each of the thirty scales of both the AI and the CCI had produced indexes ranging from .27 to .81 for the AI (Mean = .57) and from .43 to .60 (Mean = .52) for the CCI indicating that the scales are essentially homogeneous in content.

Stern pointed out that over a period of years a number of studies had been conducted to study, refine and improve the two instruments and that these studies had suggested the following points (related to validity): (50)

> 1. Descriptions of the behavior to be expected of individual students, psychiatric patients, and industrial personnel based solely on needs profiles appear to be recognized and confirmed by peers, psychiatrists, and administrators, as well as by subsequent behavior on the part of the subjects (Briggs, 1958; Chilman, 1959; Cole, 1958; Haring, Stern and Cruickshank, 1958; Stern, 1958; Unpublished data).
>
> 2. Descriptions of college environments based solely on press profiles appear to be recognized and confirmed by academic participants and observers (Unpublished data).
>
> 3. People with similar needs profiles tend to be characterized by similar patterns of overt behavior

(Briggs, 1958; Chilman, 1959; Gladstein, 1957; Haring, Stern and Cruickshank, 1958; Scanlon, 1958; Stern, 1958; 1960a; Stern, Stein and Bloom, 1956; Wessertheil, 1955).

4. Responses to needs scale items appear to be resistant to faking (Schultz, 1955), and

5. The social desirability of alternative responses to needs scale items appears to be about the same for all items, none of them being considered important to accept or reject by any substantial majority of subjects (Unpublished data).

6. Students or professionals in the same field have needs profiles that differ significantly from those of students or professionals in other fields (Siegelman, 1957; Stern, 1954, 1960b; Stern and Scanlon, 1958; Stern, Stein, and Bloom, 1956), and

7. Students with different backgrounds (public versus private) at the same institution have distinctive needs profiles, regardless of the field of study elected (Unpublished data).

8. Students from the same institution have press scale scores which are uncorrelated with their corresponding needs scale scores, the coefficients falling between -.01 and +.06 (McFee, 1961), The student's description of the school is apparently not a function of the description he provides of himself.

9. Freshmen in the same college with different high-school backgrounds (public school, private preparatory, and parochial) describe their respective high school press in ways which differ significantly from one another (Stern, 1961a).

Reliability

Stern (48) had reported that preliminary work based on 1933 CCI and 1078 AI scores from undergraduates in 32 schools had produced scale reliability coefficients

(Kuder-Richardson formula 20) ranging from .34 to .81 for the CCI (Mean = .65) and from .40 to .88 for the AI (Mean = .69). He pointed out that these reliabilities were for separate scales of only ten items and further that the average scale reliability of .67 (Kuder-Richardson) is close to the practical maximum for scales of such short length. It corresponds to a value of .92 when the scales are increased from ten to thirty items. An item analysis was later made to enable the authors to eliminate poor items and established a more reliable revised version. The revised version contains 58 per cent of the original items; 13 per cent have been revised and 29 per cent of the original items have been replaced with new ones. No reliability figures are available for the revised version of the indexes.

CHAPTER III

DESIGN AND METHOD

Both the Activities Index and the High School Characteristics Index were administered to 220 high school students in five schools. In addition to the 600 questions contained in the two indexes each student was asked to furnish the following personal information: age, sex, high school classification, grade point average, major field of study (future), probable occupation (future), highest degree planned, father's occupation, father's educational level, mother's work status, combined parental income.

Three of the high schools were large public high schools located in a first class city in the state of Kansas. One high school was a small, private institution in the same city. (An attempt was made to obtain data from a parochial school in the same city but the cooperation of the administrator could not be obtained). The fifth school used was an only-high-school located in a small city near the large metropolitan area in Kansas.

The high schools ranged in size from the private school with about forty students to the public schools ranging in size from 700 to 2500 students. In the public schools the small sample tested represented only a fraction of the total student bodies.

The data obtained from these five samples were analyzed for the existence of descriptive differences among student bodies in terms of responses to the Activities Index and differences among the environmental press-scales as measured by the High School Characteristics Index. Appropriate statistical procedures were used to determine the significance of any indicated differences.

The Samples

In any study involving the measurement of school populations it is ideal to be able to measure the entire population. Where this is possible the detection of differences between population parameters becomes a relatively simple matter. In most cases, however, one can only observe the entire school population as a part of the school-wide testing program. Unfortunately, most experimental studies are not a part of such a school-wide program.

The next best procedure is to design the study so that one may observe a random sample from the school population.

Even this may not be easy because many principals are reluctant to allow groups of "random" students to miss various classes to participate in an outsider's research program. Most principals, however, will cooperate by allowing a full class or study hall to take one period to participate in the observation. Such a sample is known as an incidental sample. An incidental sample may or may not have the characteristics of a random sample.

The randomness of a population sample is required in order to insure that the observations taken from the sample will be representative of the population and that one can make generalizations or inferences from the sampling statistics to the population parameters. Of course, one must also be able to determine that differences observed in the samples are significant rather than due to chance variations. The statistical procedures are designed to do this.

When it is said that a sample must be representative of the population, it is not necessary that it be representative in all existing variables. It is only necessary that the sample be a true representation of the variable observed including any others which correlate with it.

In this study it was necessary only to insure that representation was secured concerning environmental press factors. It had been hypothesized by Stern and others

that environmental press are factors generally existing outside the student himself and that as the student reports upon his observations he does so objectively. Among the variables which had been thought to correlate with press were individual personality needs and individual academic levels.

Several studies have been conducted to test these variables. McFee (33) had reported on a study in which she had tested the existence of independence between data from the same subjects using both the Activities Index and the College Characteristics Index. It was her contention that the CCI should give an independent estimate of environmental press having little or no correlation with the personality needs of the responding subjects.

Data from her study led McFee to conclude that there was no significant correlation between scale scores of individual subjects on the CCI and their parallel scores on the Activities Index. Individual items in the CCI were measured for the relative amounts of familiarity and experience value that they held for the subject. It was found that the older students, more experienced in the particular environment, agreed more concerning that environment than did less experienced students.

Pace, in discussing diversity of college environments, had found, over a three year period in which he had used both the CCI and the AI in college settings, that there are greater differences between college environments, as measured by the CCI, than there are between college student bodies, as measured by the AI. He also noted that college students tend to select colleges where the environmental press seems to be somewhat congruent to their own personal needs. (36)

Pace saw that the student who had attended a college several years reacted as a reporter by completing the CCI in an objective way noting what he believed to be true about his particular college. (36)

Stern, 1963, had indicated a conclusion from previous studies with the CCI that any sampling from a college population would tend to report the press in similar terms. He had summated the information in this area as follows: (51)

> The student's description of the school is apparently not a function of the description he provides of himself.
>
> The press profile obtained from small, highly-selected samples of National Merit Scholars and Finalists are highly consistent with those obtained from larger, more representative cross sections of students at the same institutions.
>
> The press profiles obtained from student responses are highly consistent with those obtained from faculty and administration at the same institutions.

> There is as much agreement in responses to subjective or impressionistic press items as there is to items more readily verifiable.

The foregoing information was held to be sufficient to allow some freedom in the selection of the high school samples for this study. A sample size of fifty from each school was selected as being optimum from the standpoints of number and availability. This size (number) was maintained in three of the five schools, whereas in two schools this was impossible.

In one public high school only 45 subjects completed all parts of the Index, a fact that was not noted until the tabulation of data. In the small private school, only 25 subjects completed the HSCI and the AI.

Wherever possible the sample was restricted to seniors following the theory that they would have accumulated greater experience and knowledge about their school than would have underclassmen.

Where necessary, underclassmen were used but in no case was any student allowed to complete the Index who had not attended his school for at least one year prior to the time of completion.

Statistical Procedures

In this study, the single-group experimental design was utilized. The study was started with a single theoretical population of high school aged students all involved in the educational process. In this population selected groups were identified from different high school settings (different at least in location and personnel).

A selected sample was drawn from each of the selected groups and observed for the existence of conditions and factors of personality need and environmental press as measured by two instruments which had been previously designed for the respective purposes. It was necessary to compare differences in the amount of the observed conditions from the respective samples and to determine, by appropriate statistical procedure, that such differences were significant according to a predetermined level of confidence rather than due to chance variation.

This study involved what Li (31) has called the binomial population, so named because the variable being measured has a two-sided character. A two sided coin is a familiar example. It has two characteristics, heads and tails. The observer anticipates one side or the other for observation and tabulation and whenever the chosen side

appears this event is tabulated as a "success," a term which is merely designative and to which no connotative meaning should be attached.

In the case of the High School Characteristics Index used in this study the variables under study are factors of conditions of environmental press. The two sides to the character of these conditions are that they either exist significantly in the environment or they do not so exist. Since the object is to measure existence of the variable, any observation of existence is tabulated as a success.

Measuring Environmental Press

The High School Characteristics Index contains 300 statements or phrases (items), each one describing a particular environmental press-condition. By marking true or false (+,-) the subject indicates his opinion as to the existence or non-existence of the condition described in that item. The instrument is so constructed that a true (+) indicates existence or success. (A few statements are phrased negatively so that the false (-) choice indicates success.) As an example consider item number two in the HSCI: "There is a lot of competition for grades." This is one of ten items or conditions measuring the environmental press for achievement. In this case a choice in the

true (+) column would indicate the opinion that such a condition of press did actually exist and would be observed by the experimentor as a success. The purpose of the measurement is to observe the proportion of success in a given number of observations.

In every binomial population there is an expected population mean of successes sometimes called a hypothetical mean. In the case of an unbiased coin the expected mean of successful observances (heads or tails) is .5. This suggests that in an infinite population of unbiased coins one would expect heads or tails to appear with equal frequency. The problem in the coin experiment is to determine if an observed sample frequency is such as to indicate that the sample observed came from the unbiased population.

The problem encountered in the observation of press conditions is a similar one. The subjects are placed in the position of having to choose either success or failure (+, or -). It is assumed (as with the coin) that under neutral (unbiased chance) circumstances, where there is no particular bias, pressure or opinion for either success or failure that the population would choose the two alternatives in equal proportions. The expected frequency of successes would therefore be .5. The question then becomes how large does the frequency of successful observations

have to be in a sample to indicate some bias (environmental press) operating in that direction. Or, how large would the frequency of observations, indicating the existence of a press condition, have to be to insure the existence of the condition. Statistically speaking, when a frequency is observed in a sample, could that sample have come from a neutral population.

Guilford presents the following statistic to test the hypothesis and to be used where expected frequencies of success and failure are equal: (23)

$$x^2 = \frac{2(fo - fe)^2}{fe} \qquad \text{equation (1)}$$

where fo = the observed frequency and fe = the expected frequency. This statistic was applied to the observations of each environmental press item, contained in the HSCI, for each school to test the null hypothesis (1) that no sample frequency would differ significantly from the population frequency of .5.

In the HSCI each subject in a sample recorded a choice for a success or failure (+ or -) for each of the 300 press items. The total number of success choices were tabulated (for each item) for each sample with the success frequency for the item being the sum of success choices. The expected frequency was the number of observations (in

subjects) in the sample multiplied by the expected population frequency (for an unbiased population) of .5. For example item number one ("Teachers are very interested in student ideas or opinions about school affairs.") received 35 choices of true (success) from the 50 subjects in the sample from school A. The expected frequency would have been 25 (.5 x 50) choices of success from an unbiased population. The statistic (1) shown above was used to test the null hypothesis of no difference. It was found that the hypothesis could be rejected at the .01 level of confidence.

Table IV shows the results of this statistical procedure for the five schools. It contains a summary of the number of items in each Press Factor in which the null hypothesis was rejected at three levels of confidence: $p = .05$, .02, and .01.

Inspection of the data revealed that there were item frequencies, at the .01 level, ranging from 35/50 to a high of 50/50. Immediately the question arose as to whether among these frequencies, showing a significant difference from the hypothetical unbiased population, there was a difference. In other words, where significant frequencies for a particular press condition may range from 35/50 to 50/50 is there a difference in the amount or intensity of any two press observations.

TABLE IV

SIGNIFICANT ENVIRONMENTAL PRESS ITEMS *

Press Scale No.	Level of Significance			
	P < .05	P < .02	P < .01	Total
	Successful Observances			
1. Abasement	No items*	No items*	7 items*	7 items
2. Achievement	3 "	no "	23 "	26 "
3. Adaptability	no "	no "	15 "	15 "
4. Affiliation	4 "	4 "	23 "	31 "
5. Aggression	1 "	2 "	no "	3 "
6. Change	2 "	no "	11 "	13 "
7. Conjunctivity	11 "	1 "	18 "	30 "
8. Counteraction	1 "	no "	15 "	16 "
9. Deference	3 "	no "	13 "	16 "
10. Dominance	1 "	1 "	15 "	17 "
11. Ego Achievement	3 "	2 "	8 "	13 "
12. Emotionality	1 "	3 "	21 "	25 "
13. Energy	1 "	no "	10 "	11 "
14. Exhibitionism	7 "	2 "	12 "	21 "
15. Fantasied Achieve.	2 "	1 "	12 "	15 "
16. Harm Avoidance	1 "	no "	8 "	9 "
17. Humanities	6 "	no "	5 "	11 "
18. Impulsiveness	5 "	no "	17 "	22 "
19. Narcissism	2 "	3 "	41 "	46 "
20. Nurturance	4 "	1 "	12 "	17 "
21. Objectivity	6 "	2 "	21 "	29 "
22. Order	1 "	no "	17 "	18 "
23. Play	4 "	2 "	26 "	32 "
24. Practicalness	3 "	no "	25 "	28 "
25. Reflectiveness	3 "	1 "	14 "	18 "
26. Science	3 "	no "	13 "	16 "
27. Sensuality	3 "	no "	10 "	13 "
28. Sexuality	3 "	1 "	23 "	27 "
29. Supplication	3 "	1 "	12 "	16 "
30. Understanding	no "	no "	23 "	23 "

* This is a summary of Appendix B

N equals 150 items (30 items per factor in each of five schools).

The Total column represents the number of items (out of 150) found to be significant at or beyond the 105 level.

From the statistical viewpoint the question would be whether two observed frequencies are equal. The procedure is derived from that of testing the difference between two means. The simplest way to arrive at this is through the standard error of the mean or the confidence interval of the mean. By using this method it may be determined that any mean that lies outside a given confidence interval (99 per cent, 98 percent, or 95 percent) of a reference (population) mean is different from that mean. Any mean beyond the standard error of measurement of another mean is from a different population.

Consider the previously cited example of HSCI item number one from School Sample A. The success frequency was 35/50 indicating that this condition does exist at the .01 level of significance. The mean is 35 divided by n (35/50) or .70.

If one drew several samples from the same population and took the same observation from these samples their means would all be different due to error of sample measurement.

However, for a sample of a given size (such as n = 50) there is a limit to the range of means and so any mean falling outside this limit is assumed to represent a different population. The size of this range or interval is known as

a confidence interval and may be drawn to any level of significance. The following statistic, which is based upon the binomial population, allows us to test the 99% confidence interval of a sample mean ($\bar{y}$). (M = the population mean = 25/50.):

$$\bar{y}-2.576\sqrt{\frac{\bar{y}(1-\bar{y})}{n}} < M < \bar{y}+2.576\sqrt{\frac{\bar{y}(1-\bar{y})}{n}} \qquad \text{equation (2)}$$

In the illustration cited the sample mean $\bar{y}$ is equal to .70 therefore the confidence interval lies between

$$0.70 - 2.576\sqrt{\frac{(0.70)\ (0.30)}{50}} \text{ and } 0.70 + 2.576\sqrt{\frac{(0.70)(0.30)}{50}}$$

or .55 and .85

Since we are interested only in success observations (making this a one-tailed test) we need only consider the .85. (.85 x 50 = 42.5). The conclusion is that press frequencies of 43 (and up to 50) differ from those of 35 to 42. In this study the conclusion was made that such frequencies (43 to 50) indicated a high concentration of the press condition observed. Table V shows the results of this statistic.

The HSCI is made up of thirty press-scales each composed of ten press-items. Each scale, then, is measured by ten related frequencies. If we find the mean of these ten related frequencies from a subject we have a scale score for that subject. The sum of all subjects, scale

TABLE V

TWO INTENSITIES OF PRESS ITEMS*

Press Scale No.	Intensity Level		No Significance
	High	Low	
	43/50 to 50/50	35/50 to 42/50	0/50 to 34/50
1. Abasement	6 items	1 items	143 items
2. Achievement	19 "	7 "	124 "
3. Adaptability	10 "	5 "	135 "
4. Affiliation	23 "	8 "	119 "
5. Aggression	3 "	no "	147 "
6. Change	9 "	4 "	137 "
7. Conjunctivity	26 "	4 "	120 "
8. Counteraction	9 "	7 "	134 "
9. Deference	13 "	3 "	134 "
10. Dominance	13 "	4 "	133 "
11. Ego Achievement	10 "	3 "	137 "
12. Emotionality	18 "	7 "	125 "
13. Energy	8 "	3 "	139 "
14. Exhibitionism	21 "	no "	129 "
15. Fantasied Achievement	12 "	3 "	135 "
16. Harm Avoidance	7 "	2 "	141 "
17. Humanities	11 "	no "	139 "
18. Impulsiveness	17 "	5 "	128 "
19. Narcissism	26 "	20 "	104 "
20. Nurturance	12 "	5 "	133 "
21. Objectivity	21 "	8 "	131 "
22. Order	7 "	11 "	132 "
23. Play	23 "	9 "	118 "
24. Practicalness	21 "	7 "	122 "
25. Reflectiveness	14 "	4 "	132 "
26. Science	15 "	1 "	134 "
27. Sensuality	13 "	no "	137 "
28. Sexuality	17 "	10 "	123 "
29. Supplication	13 "	3 "	134 "
30. Understanding	10 "	13 "	137 "

* This is a summary of Appendix B
N equals 150 items (30 items per factor in each of five schools).
No significance equals press factors with up to 34 of 50 successful observations.
Low intensity of press represents a ratio of successful observations between 35 to 42/50.
High intensity of press represents a ratio of successful observations between 43 to 50/50.

scores in the sample divided by the number of subjects, is the sample scale score. This number is identical with the mean of the ten item frequencies for the sample.

Each sample, then, produces thirty scale scores. Since it had already been determined that there were differences in the individual press items, it followed that there would be differences when the items were combined into press scales. Actually the differences in the thirty scale scores for a sample comprise the variance of that sample in terms of the variables of environmental press. The purpose is to determine any significant differences between the means of the variables from the selected samples.

The Analysis of Variance (AOV) statistic is a suitable choice for this measurement. With it one can determine the significance (according to a predetermined confidence level of 95 percent) of differences found among a group of sample means. Most statisticians hold that the AOV can only be used where the sample variances are equal. On the other hand there is evidence to indicate that in common experimental cases where the number of observations is equal for a number of treatments, the F test for significance of difference in means, as found from the AOV, is little influenced by heterogeneity of variance. (9)

Generally the conditions necessary for the use of the AOV are assumed. However, it may be advisable to determine statistically whether a null hypothesis concerning the equality of the sample variances is tenable. If the null hypothesis is true then the separate sample variances should not differ more than is to be expected in the variances of random samples from a common population and one may proceed with the AOV.

Bartlett has provided a test of the significance of this null hypothesis known as the Test for Homogeneity of Variances. Actually the statistic is a Chi Square which Bartlett designates as B' (6):

$$B' = 2.3036 \ (\log \bar{s}^2) \ (N-k) - \Sigma(ni-1)(\log si^2) \quad \text{equation (3)}$$

Where 2.3026 = constant needed because we use common logarithms instead of Naperian logarithms

$\bar{s}^2$ = the unweighted arithmetic mean of several sample variances

N = the total number of observations in all samples combined

ni = the number of observations in any one sample

k = the number of samples

B' = a x^2 with k-1 degrees of freedom

Where the obtained statistic falls near the boundary of a selected region of confidence a correction (C) is applied to B':

$$C = 1 + \frac{1}{3\ (k-1)} \left(\Sigma \frac{1}{ni-1} - \frac{1}{N-K}\right) \quad \text{equation (4)}$$

The corrected statistic (B) is found by dividing the original B' by C.

An IBM 1410 computer was used to apply the corrected Bartlett Test to each of the thirty scales from the five samples. The results are shown in Table VI. Since the Bartlett B is really a chi square statistic, let us review the characteristics of chi square (x^2). x^2 is used to compare experimental results with expected results. The smaller the x^2 the closer the agreement between the two sets of results. From a x^2 table of values (23) we found that with 4 degrees of freedom and at a 95 percent level of confidence a x^2 which is less than 9.488 accepts the null hypothesis of no difference. For Bartlett, "no difference" means homogeneous. Table VI shows that the variance in factor scale No. 8 was found to be heterogeneous. In the other twenty-nine of the thirty scales the variance was homogeneous thus allowing procedure with the calculation of the AOV for them.

The IBM 1410 computer was again used to calculate the twenty-nine AOV's and the subsequent F tests of significance between means. The results of these computations are shown in Table VI.

The Analysis of Variance (AOV) allows one to determine the significance of the difference among the means from

TABLE VI

BARTLETT'S TEST FOR HOMOGENEITY

Chi square results for each scale of the HSCI comparing five school samples.

Variable Scale	*B (X^2)	Variable Scale	B (X^2)
1	0.917	16	0.815
2	5.012	17	5.021
3	2.023	18	8.418
4	4.686	19	1.927
5	2.122	20	1.388
6	0.473	21	3.569
7	5.021	22	2.090
8	**11.499	23	2.552
9	9.374	24	5.265
10	3.353	25	5.750
11	1.409	26	0.957
12	0.948	27	2.055
13	4.521	28	4.711
14	0.539	29	2.038
15	7.832	30	1.417

* X^2 at the 95 percent level of confidence = 9.488. Numbers <9.488 accept the null hypothesis of no difference.

** 11.499 is between 95 percent and 98 percent confidence levels.

several groups of data. The F which is obtained indicates that for each Factor Scale, where an Analysis of Variance is calculated among the means from the five samples, that a null hypothesis is either tenable or rejectable.

In the present problem the null hypothesis asserts that the five sets of scores in each factor scale are in reality random samples drawn from the same normally distributed population, and that the means of the five conditions, or samples A, B, C, D and E, will differ only through fluctuations of sampling. The null hypothesis (no. 3, page 9), then, contends that there will be no significant difference (95 percent confidence level) in the means of an individual press scale among the samples. To test this hypothesis we divide the "among means" variance by the "within groups" variance and compare the resulting variance ratio, called F, with precalculated F values (23). From the precalculated tables we were able to determine that an F of 2.42 is significant at the .05 level and an F of 3.41 is significant at the .01 level.

Table VII shows the obtained F ratios which were found for each of the twenty-nine scales. It will be noted that for 11 scales (3, 11, 12, 15, 16, 19, 20, 24, 25, 26 and 30) that the F obtained was less than 2.42 thus allowing acceptance of the null hypothesis of no differences

TABLE VII

ANALYSIS OF VARIANCE AMONG FIVE SCHOOL SAMPLES FOR EACH OF TWENTY-NINE ENVIRONMENTAL FACTORS IN HSCI PRODUCING AN F TEST OF MEANS

Factor Scale No.	F	Factor Scale No.	F
** 1	6.32	16	1.75
** 2	7.44	*17	2.87
3	0.45	**18	4.16
** 4	6.57	19	2.30
** 5	6.78	20	1.87
** 6	10.06	*21	2.66
** 7	6.76	**22	3.65
		**23	6.97
* 9	2.92	24	1.29
**10	4.92	25	1.56
11	2.15	26	2.21
12	0.84	**27	13.30
*13	2.81	**28	9.56
**14	5.10	*29	2.86
15	0.52	30	0.60

Numbers $\leq$ 2.41 indicate no difference in means.

*F at the 95 percent level of confidence is 2.42. Numbers $\geq$ 2.42 reject the null hypothesis of no difference.

**F at the 99 percent level of confidence = 3.41. Numbers $\geq$ 3.41 exceed the 99 percent confidence level of rejection.

among the means. In the remaining 18 scales, however, we find an F ratio large enough to reject the null hypothesis. We may therefore conclude that in these scales the means of the five groups do in fact differ. The F test tells us only that some (1 of 5) mean is reliably different from some other mean.

In looking at Table VII we can see that in 18 (60 per cent) of the thirty press scales that significant differences did exist among the five school samples; however, this information does not reveal between which pairs of samples that the difference exists. A meaningful interpretation of the data, therefore, requires a comparison of pairs of means. In a five sample study there are ten possible comparisons of selected pairs: I-II, I-III, I-IV, I-V, II-III, II-IV, II-V, III-IV, III-V, and IV-V.

A simple F test to test the differences of pairs of means, using the within-group variance (s_w^2) from the AOV calculations, is appropriate and may be obtained by the following formula:

$$F = \frac{(\bar{X}_1 - \bar{X}_2)}{sw^2/n_1 + sw^2/n_2} = \frac{(X_1 - X_2)}{sw^2 (n_1 + n_2)\ n_1 n_2} \qquad (5)$$

It will be noted that the estimate of variance used here has more degrees of freedom (since it was obtained from an AOV comparison of five samples) than a variance

obtained by a comparison of two samples only. This difference allows for a very liberal criteria for the rejection of the null hypothesis. A method devised by Scheffe' is used to reduce this liberalization (44). This method uses the criterion that the probability of rejecting the null hypothesis when it is true, a Type I error, should not exceed (k-1) times the .10 level for any of the comparisons made (45).

Suppose that the two-sample variance in making an F test is used. The two smallest samples in this study had 45 and 25 subjects for a total N of 70. Upon entering an F distribution table using one d.f. (two samples -1) and 69 d.f. (seventy subjects -1) you find the .01 point for F distribution to be 7.01. The conclusion may be that any comparison between pairs of means from these two samples which yielded an F of more than 7.01 would reject the null hypothesis of no difference at the 99 percent confidence level.

However, using the AOV variance it is necessary to use five groups (4 d.f.) totaling 220 subjects (215 d.f.). Fisher and Yates (18) have furnished a table containing the .10 level of confidence for values of F. From it the .10 point for F distribution is 1.97. Using the Scheffe' method one must multiply 4 (k-1) times 1.97 to get a

rejection point of 7.88. Note that this is more rigorous than the .01 level using two samples (7.88 > 7.01).

Using this method, then, one would conclude that any comparison of two means from an environmental factor in which the obtained F > 7.88 would reject the null hypothesis of no difference. Table VIII shows the results of these computations.

Measuring Student-Body Needs

As has been said by the authors, the High School Characteristics Index was designed to be used with the Activities Index. Each sentence in the HSCI was designed to describe or meet a need expressed in the corresponding statement or phrase in the AI.

Question number 2 in the HSCI, "There is a lot of competition for grades," expresses a condition for the press for achievement or success through personal effort. Its counterpart, question number 2 in the AI, "Setting difficult goals for myself," suggests a way in which a person might describe his need to achieve or succeed through personal effort.

This relationship holds throughout both instruments resulting in a high similarity in scoring and interpreting procedures.

TABLE VIII

INDIVIDUAL F TESTS COMPARING SINGLE PAIRS OF SAMPLES FOR EACH SIGNIFICANT FACTOR SCALE IN THE HSCI.

	Single-pairs comparison of Schools									
Factor	1 - 2	1 - 3	1 - 4	1 - 5	2 - 3	2 - 4	2 - 5	3 - 4	3 - 5	4 - 5
1				8.05	13.52	10.56			13.22	10.73
2				9.93	16.12	20.49	9.21		26.09	18.46
4					16.04		14.05	10.30		9.47
5				23.38			10.57		10.39	20.37
6			15.20		14.86		11.90	25.63		19.47
7				11.72	8.61					
8								8.36		
9				9.99						
10							8.49			
13									10.34	
14				8.23	8.79		11.96			10.53
17	9.96									
18		7.96		11.57						8.29
21										
22				12.32					10.81	
23					17.14		14.58	11.89		10.44
27		19.81	40.63	22.62		19.55	10.24			
28				22.91	8.57		32.57		11.26	24.35
29										9.73

When F > 7.88 The Null Hypothesis of no difference is rejected.

Because of this similarity one may use the same statistical procedures for many of the comparisons of data from the AI. First it was necessary to establish homogeneity of variance. Bartlett's Test for Homogeneity of Variances was again used as for the CCI. Table IX shows the results. These results established the homogeneity of the variances allowing a use of the Analysis of Variance to produce an F test of Means. Table X shows these results.

Here the data from the AI showed a considerable difference in results from the data from the CCI. Whereas Table VII (page 65) reveals there were 19 scales in the press measurement showing a significant difference in means, Table X shows that only five scales in the activities measurement show a significant difference. This would indicate that there is a considerably greater difference in the environmental press of the five samples than in the personality needs as expressed by the students.

As with the CCI it was also necessary to perform individual F tests comparing single pairs of samples in each of the five factor scales in the AI which the AOV showed as having a significant difference of means. The Scheffe' test was again used and the results of the computations are shown in Table XI. It will be noted that even though

TABLE IX

BARTLETT'S TEST FOR HOMOGENEITY

Chi square results for each scale of the AI comparing five school samples.

Variable Scale	B (X^2)*	Variable Scale	B (X^2)*
1	0.277	16	0.551
2	0.765	17	0.161
3	0.286	18	0.106
4	0.166	19	0.714
5	0.276	20	0.333
6	0.386	21	0.138
7	0.738	22	0.111
8	0.260	23	0.321
9	0.277	24	0.490
10	0.204	25	0.176
11	0.128	26	0.369
12	0.298	27	0.368
13	0.102	28	0.117
14	0.266	29	0.734
15	0.230	30	0.136

* Bartlett's chi square at the 95 percent level of confidence = 9.488.

Numbers < 9.488 accept the null hypothesis of no difference.

TABLE X

ANALYSIS OF VARIANCE AMONG FIVE SCHOOL SAMPLES FOR EACH OF TWENTY SEVEN FACTORS IN THE ACTIVITIES INDEX PRODUCING AN F TEST OF MEANS

Factor Scale No.	F	Factor Scale No.	F
1	0.57	16*	2.90
2	1.41	17	0.11
3	1.85	18	
4	.20	19	0.45
5**	3.74**	20	1.68
6	0.80	21	
7	0.62	22	0.40
8	1.89	23	0.87
9	0.72	24*	3.16
10	0.37	25	1.61
11	0.46	26	1.41
12	1.24	27	1.02
13		28	1.44
14	0.98	29*	2.72
15	0.82	30*	3.16

Number $\leq$ 2.41 indicate no difference in means.

* F at the 95 percent level of confidence = 2.42. Numbers $\geq$ 2.42 reject the null hypothesis of no difference.

** F at the 99 percent level of confidence = 3.41.

Numbers $\leq$ 3.41 exceed the 99 percent level of rejection.

TABLE XI

INDIVIDUAL TESTS COMPARING SINGLE PAIRS OF SAMPLES FOR EACH SIGNIFICANT FACTOR SCALE IN THE AI.

	Single Pairs Comparisons of School								
Factor	1-2	1-3	1-4	1-5	2-3	2-4	2-5	3-4	3-5
5	8.95				11.80				
16					8.24				
24		7.14							
29						7.91			
30	9.07		9.30						

When F > 7.88, the Null Hypotheses of no difference is rejected.

the AOV (Table X) indicated that there was a significant difference of means at the 95 percent confidence level, in factor number 24, the Scheffe' method of testing for significance failed to support a difference in means of any single pair of schools.

This concludes the procedures and statistical comparisons used in this study. The next chapter contains findings and discussion.

CHAPTER IV

FINDINGS

Examination of the results of the statistical treatment of data from the Activities Index reveal some interesting results. Examination of Table XI reveals only four need factors with a significant difference between schools (5, 16, 29, 30).

If we refer to Table III (page 24) we note that factor 5 indicates Aggression vs Blame Avoidance. Table XI indicates that there is a significant difference in this factor between samples 2 and 1 and between samples 2 and 3. The table also shows that samples 2 and 3 show a significant difference in factor 16. Table III shows this factor to be Risktaking vs Harm Avoidance.

Factor 29 shows a difference between samples 2 and 4. Table III indicates this factor to be Dependency vs Self Reliance.

Factor 30 shows two pairs of schools differing. Sample 1 differed from both samples 2 and 4 and Table III indicates that this is a difference in intellectual understanding.

We can summarize the difference in student body needs, as indicated by the samples measured, by saying that school number 2 seemed to be most different from the others in that it differed from some other school in all the four factors. An Analysis of the results showed that the students in school number 2 displayed less need for aggression than the students of schools 1 and 3. Students in school 2 displayed a greater need for risktaking than students at school 4, while their need for understanding was greater than the students at school 1. Students at school 4 also displayed a greater need for understanding than students at school 1.

All other need factors among the five samples were essentially equal. When we realize that there are actually ten pairs of comparisons for each factor or a total of 300 for the thirty factors and that in only six of the 300 comparisons was there a significant difference we can see that the personality needs of the five samples as revealed by the data from the Activities Index were quite similar.

When we look at the environmental press factors at the five schools as measured by student responses to the HSCI we find considerably more differences among the schools than was indicated among the needs of the student bodies.

Even though the data indicated that there was essentially little difference in the expressed personality needs

of the five student bodies, findings by McFee (33) would indicate that this would not necessarily preclude a similarity in environmental press.

Examination of Table VII shows that for eleven of the thirty press factors the obtained F from the Analysis of Variance was too small to reject the null hypothesis of no difference. This indicates that for eleven of thirty, or roughly 37 percent of the factors, there was a similar expressed press by the five samples. For the other nineteen, or 63 percent of the factors, there was a significant difference of expressed press between at least two of the five groups and this difference existed at a level of significance of at least 95 percent or more of confidence.

In six of the nineteen factors the difference existed in only one pair of schools; for the remaining thirteen factors the differences existed in from two to six pairs of comparisons.

In considering the five sample groups there was only one comparison, between groups one and two, in which there was a difference found in but one factor, (17). Groups one and three had two factors (18 and 27) that were different; groups one and four had two factors (6 and 27) that were different; while groups two and four showed a difference in three factors (1, 2 and 27). All other group comparisons

showed from four to ten factors with significant differences between them. (Table VIII)

In all there were 55 of the 300 factoral comparisons or 18-1/3 percent which showed a difference which was significant at the confidence level of 95 percent or more.

Table XII shows the comparison in a different light. It lists each significant factor and shows each school together with the groups which are greater and/or smaller.

School one excelled one or more of the other four schools in eight press factors: 1, 5, 6, 14, 17, 18, 27 and 28. School two excelled one or more of the other four schools in nine factors: 2, 4, 5, 7, 10, 14, 23, 27 and 28. School three excelled one or more schools in four factors: 1, 5, 6, and 28. School four excelled one or more schools in eight factors: 1, 4, 5, 8, 14, 18, 23 and 28. School five excelled one or more schools in seven factors: 2, 6, 7, 9, 13, 22 and 29. As a matter of fact school five excelled each of the other four schools in factor number two.

At the same time school one was excelled by one or more schools in four factors (2, 7, 9 and 22). School two was excelled by one or more schools in three factors (1, 6 and 17). School three was excelled by one or more schools in ten factors (2, 4, 7, 8, 13, 14, 18, 22, 23 and

TABLE XII

FIVE SCHOOLS WITH A COMPARISON OF SIGNIFICANT DIFFERENCES WITH OTHER SCHOOLS IN VARIOUS FACTORS OF PRESS

	SCHOOLS				
FACTOR	1	2	3	4	5
1	> 5*	< 3,4	> 2,5	> 2,5	< 1,3,4
2	< 5	> 3,4	< 2,5	< 2,5	> 1,2,3,4
4		< 3,5	< 2,4	> 3,5	< 2,4
5	> 5	> 5	> 5	> 5	< 1,2,3,4
6	> 4	< 3	> 2,4	< 1,3,5	> 2,4
7	< 5	> 3	< 2		> 1
8			< 4	> 3	
9	< 5				> 1
10		> 5			< 2
13			< 5		> 3
14	> 5	> 3,5	< 2	> 5	< 1,2,4
17	> 2	< 1			
18	> 3,5		< 1	> 5	< 1,4
22	< 5		< 5		> 1,3
23		> 3,5	< 2,4	> 3,5	< 2,4
27	> 3,4,5	> 4,5	< 1	< 1,2	< 1,2
28	> 5	> 3,5	> 5 < 2	> 5	< 1,2,3,4
29				< 5	> 4

*These numbers identify those schools which have a press factor > or < the school identified at the top of the column.

27). School four was excelled by one or more schools in four factors (2, 6, 27 and 29); and school five was excelled by one or more schools in nine factors (1, 4, 5, 10, 14, 18, 23, 27 and 28).

Table XIII shows a final comparison between schools. As an example for abasement, factor number one, we see that schools 1, 3 and 4 were above the mean while schools 2 and 5 were below the mean. Each school deviated significantly (as shown by D) from another in this factor with school 3 showing the largest amount of this factor and school 5 showing the smaller amount.

A careful examination of this table will show a variety of environmental press patterns with considerable variation from school to school.

Summary of Findings

The findings from this study have been reported in a number of ways. First the data for the Activities Index and the High School Characteristics Index were rightfully treated separately. For the HSCI there was both a single-pair sample comparison for each significant factor and a between-school comparison of all significant factors.

In the area of environmental press there were considerably more differences among the schools than in the

TABLE XIII

INTER-SCHOOL DEVIATIONS OF SIGNIFICANT PRESS FACTORS

Factor	Schools				
	1	2	3	4	5
Abasement	+, D+	-, D-	+,**, D+	+, D+	-, *, D-
Achievement	+	- D-	-, *, D-	-, D-	+,**, D+
Affiliation	+	+,**,D+	-,	+, D+	-, *, D-
Aggression	+,**,D+	-	-	+ D+	-, *, D-
Change	+ D+	- D-	+ D+	-, *,D-	+,**, D+
Conjunctivity	- D-	+ D+	-, *, D-	+	+,**, D+
Counteraction	+	-	-, *, D-	+,**,D+	+
Deference	-, *,D-	+	+	-	+,**, D+
Dominance	+	+,**,D+	+	+	-, *, D-
Energy	+	+	-, *, D-	-	+,**, D+
Exhibitionism	+ D+	*,**,D+	-	+	-, *, D-
Humanities	+,**,D+	-, *,D-	-	+	-
Impulsiveness	+,**,D+	-	-	+	-, *, D-
Order	-, *,D-	-	- D-	+	+,**, D+
Play	+	+,**,D+	-	+	-, *, D-
Sensuality	+,**,D+	+ D+	-	- D-	- D-
Sexuality	+ D+	+,**,D+	-	+ D+	-, *, D-
Supplication	-	+	+	-, *,D-	+,**, D+

\+ = Above the mean

\- = Below the mean

** = Largest of five schools

* = Smallest of five schools

D+ = Significantly greater than another

D- = Significantly less than another

area of student needs. For eleven (37 percent) of the thirty press factors there was no significant difference among the five samples. For the other nineteen (63 percent) factors there was a difference expressed between at least two samples -- at the 95 percent confidence level.

In single-pair factoral comparisons between two schools there were 55 of the 300 possible comparisons (18-1/3 percent) in which there was a significant difference found at the 95 percent confidence level or more. Further, there were 6 of the ten group comparisons (60 percent) in which there were at least four press factors which differed significantly at the 95 percent confidence level.

One school differed from three other schools in at least eight of the thirty factors. This same school was significantly different from all the other schools in three factors.

When we think of the hope for congruency between the expressed intellectual needs of a student body and the press of the educational environment in the institution we begin to see the significance of these data. Here are five samples of students representing five student bodies. They came from the same midwestern community. The data from the Activities Index indicated that there was very

little difference in their basic personality needs. This was substantiated by a significant difference in only 6 of the 300 single pair comparisons (2 percent). These same students saw their five institutions as being in some way different in 63 percent of the environmental press factors (19 of 30). There is a demonstrated lack of congruency where such a difference exists. This means that in some of the need areas some of the student body needs were not being met.

Even though it was not the purpose of this study to make evaluations of the congruency between need and press in individual schools an example here may serve to illustrate the meaning of these data.

School 5, for example, showed no significant differences from any of the other schools in any of the expressed personality needs (Table XI). The students saw the environmental press of their school as different in all nineteen of thirty areas from some other school. There may have been a lack of congruency in all nineteen of these press factors. It would seem logical that if such incongruency can exist, every school should attempt to measure the differences between its own need and press in order to evaluate the quality and efficiency of its educational learning atmosphere.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Review of the Purpose and Design of the Study

The primary objective of this study was to determine whether -- in spite of limited school selectivity by high school students -- there exists differences in secondary school "images," or environments, which may be measured, demonstrated and described. This environment was then defined in terms of environmental press factors with the object being to measure and compare the existence of these factors in samples from five schools.

It had been felt by others in the field that there is a need for congruence between the personality needs of students and the press of an educational institution. Thus a secondary purpose had been to measure need patterns of the student bodies of the five schools.

Subjects selected for the study composed five samples, each selected as representative of its school population in the ability to objectively report environmental press.

In all there were 220 subjects from five schools used. The data were gathered during the spring school term of 1966.

Instruments used in the collection of data for this research project were the Stern Activities Index and the High School Characteristics Index. The data were gathered by staff members under the supervision of the Principals of the respective schools involved.

Limitations

A number of factors related to this study may limit the conclusions that may be drawn from the findings. These factors are discussed at this point so that the reader may be aware of the limitations under which the conclusions are made.

First, let it be said that the author feels that there is little bias in the samples. Each of samples 1 through 4 was chosen as a typical class in Senior English in the respective school. In the fifth school all students in a particular study hall were used. It was intended that the samples would be typical and representative of high school students in the community. The Bartlett's Test of Homogeneity subsequently established this point. It was further shown that the samples met the established requirements of being representative of their schools in the area

of objective "image" reporting thus allowing generalization from sample to school population.

A first limitation relates to the manner of data collection. The fact that the data were collected in each school by a different person may have possibly had biasing effects of a significant nature.

A second limiting factor is related to sample size. The difference in sample size between the largest and smallest samples may well have limited the number of press factors which were found to be different between the smaller sample and the others.

A final limitation has to do with the design of the study and the instruments used for data collection. One must recognize that even though the two instruments used are the only ones available for this specific purpose there are some limitations to both their validity and their reliability. For the reader to accept the conclusions of the study he must accept the limitations of the design together with the assumption that any findings of differences between samples are in fact due to significant differences of observed data rather than being consistant with the possible biases or chance variations.

Conclusions

Within the limitations posed above, this study demonstrates the possibility of measuring and identifying environmental press factors in secondary schools samples. It further demonstrates that, in spite of low school selectivity by secondary school students, that there are both intra-school and inter-school differences among the press factors.

The study shows that even though the five samples from the experimental community were homogeneous and displayed essentially similar need patterns, there was considerable dissimilarity among the press factors. When we remember that these press factors constitute the intellectual and educational atmosphere of a school it gives us pause. As we note the incongruency between the needs and press of these schools we wonder at the adequacy of the educational climate in which these students must needs be educated.

Indeed when we recall (page 28) that "press is a self-perceived property or condition, of an outside object or person, which either aids or impairs the efforts of the individual to meet his needs or to reach a given goal," we can suggest that where such incongruencies exist needs are not being met and goals are not being adequately reached.

It may well be that among the five schools observed that there are press patterns which would more nearly meet the needs of individual students. This possibility lends itself to the suggestion that there should be positive selection of school for secondary students, that positive steps should be taken to place students in educational environments where their needs may be met.

The study also suggests that it may be well to make attempts to control the press factors within a school. It suggests that we not only might select students to match an existing pattern of school environment but that we might also attempt to control and alter an educational environment to meet the mean needs of an existing student body.

Questions

The study also brings to mind a number of new questions which beg for answers:

1. What is the relationship between the personality and educational needs of a student body?
2. Is there a difference between the educational need patterns of males and females which should be considered in educational planning?
3. If we fulfill the personality needs of the student, can we thereby contribute to his educational needs?
4. Does a particular press pattern for an institution imply a particular educational climate?

5. Can the press pattern of an institution be changed or controlled and if so, can the educational climate thereby be also controlled and changed?

6. Does a particular press pattern at an educational institution contribute to the failure or success of a student with particular personality needs?

7. Can a student who fails in one press pattern possibly succeed in another pattern, perhaps more congruent with his needs?

8. Is there a difference between the anticipated press pattern which a student has before he enters a school and the actual realized pattern which he finds there after attendance?

9. Does a difference between the actual press pattern and either the student's anticipated press pattern or his own needs pattern correlate with his potential as a school drop-out?

Of course such a group of unanswered questions naturally lead to suggestions for finding appropriate answers. The following section contains suggestions to this end.

Recommendations

The investigator would recommend that these problems raised but unanswered by this study as well as other related questions be considered with respect to future research.

It has yet to be determined which are the most significant factors related to educational attrition and retention. It is recommended that definite attempts be made to find any existing relationship to need and/or press factors.

Research needs to be continued in the area of studying the institutional image with a view to discovering the relationship of image to press pattern and between anticipated and realized images.

Finally, research is needed to determine if the educational climate may be controlled and changed by educators in order to more nearly meet the personal and educational needs of the student body.

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APPENDIX A

HIGH SCHOOL CHARACTERISTICS INDEX--RAW DATA

APPENDIX A
HSCI--RAW DATA--SCHOOL A (N = 50)

No.	Press Scale	Press Scale Items											
		1	2	3	4	5	6	7	8	9	10	Σ	$\bar{X}$
1	Abasement-Assur.	*15	29	36	19	10	17	18	29	12	33	218	4.36
2	Achievement	46	21	28	26	30	37	42	27	36	40	333	6.66
3	Adopt.-Defense	3	48	22	31	35	5	29	14	26	16	229	4.58
4	Affilliation-Reject.	44	38	33	26	40	43	34	34	36	21	349	6.98
5	Aggress.Bl.Av.	30	18	15	40	23	22	25	16	14	18	221	4.42
6	Change - Same	45	31	39	12	40	16	18	28	20	33	282	5.64
7	Conjunct.-Disj.	42	33	28	39	29	22	36	26	33	30	318	6.36
8	Counteract-Inferior	44	38	44	30	21	21	18	16	29	24	285	5.70
9	Defer-Restive	14	29	9	29	38	17	19	39	14	13	221	4.42
10	Dominance-Toler.	46	30	23	39	35	41	31	32	28	27	332	6.64
11	Ego Achievement	40	27	23	39	24	28	25	26	29	33	294	5.88
12	Emotion-Placid	34	17	44	45	13	25	38	36	13	38	303	6.06
13	Energy-Passive	43	26	31	25	41	25	24	22	25	18	280	5.60
14	Exhibit-Inferior	32	30	23	22	39	28	28	31	36	38	317	6.34
15	Fantasy-Achieve.	41	21	19	19	22	17	41	22	8	35	245	4.90
16	Harm Avoid.-Risk Taking	9	42	30	2	10	8	12	14	15	17	159	3.18
17	Human.Soc. Sci.	30	41	18	26	16	10	28	32	12	23	236	4.72
18	Impulsive-Delib.	36	47	44	22	37	26	20	27	25	32	316	6.32
19	Narcissism	14	43	37	44	34	35	36	33	35	43	354	7.08
20	Nurturance Rej.	13	47	9	35	36	18	38	33	33	22	284	5.68
21	Object-Project	23	47	30	37	38	24	26	33	34	28	320	6.40
22	Order-Disorder	39	31	16	19	11	45	19	35	42	5	262	5.24
23	Play-Work	45	41	39	34	42	34	28	35	21	32	351	7.02
24	Practical	35	41	38	10	36	36	35	30	35	36	322	6.44
25	Reflectiveness	37	16	32	38	21	31	45	21	29	23	293	5.86
26	Science	37	8	29	33	35	40	29	21	11	28	271	5.42
27	Sensual-Puritan	38	41	39	29	26	39	33	14	31	31	321	6.42
28	Sexuality-Prud.	28	14	47	41	44	39	29	33	32	36	343	6.86
29	Supplication-Autonomy	25	38	26	11	17	32	27	23	12	35	240	4.80
30	Understanding	45	27	22	15	37	28	39	27	15	43	298	5.90

* Numbers represent that proportion of total N who responded in the indicated (success) manner.

Σ = the total success responses out of 10 N possible.
$\bar{X}$ = the mean number of successful item responses per scale.

APPENDIX A

HSCI--RAW DATA--SCHOOL B (N = 45)

No.	Press Scale	Press Scale Items											
		1	2	3	4	5	6	7	8	9	10	Σ	$\bar{X}$
1	Abasement	* 9	24	31	11	4	11	9	24	8	29	160	3.56
2	Achievement	35	25	24	22	32	40	35	26	20	28	287	6.38
3	Adoptation	4	44	17	34	38	0	37	6	23	3	206	4.58
4	Affilliation	43	38	32	34	17	42	39	31	25	28	329	7.31
5	Aggression	31	18	6	30	21	19	23	10	15	0	173	3.84
6	Change	42	29	30	10	30	12	7	30	22	19	231	5.13
7	Conjunctivity	38	30	22	41	33	25	37	14	37	29	306	6.80
8	Counteraction	40	31	39	29	15	23	15	13	29	18	252	5.60
9	Deference	15	26	9	28	36	20	38	41	22	9	244	5.42
10	Dominance	41	25	39	32	31	38	26	31	23	17	303	6.73
11	Ego Achievement	39	34	17	32	12	28	27	6	23	18	236	5.24
12	Emotion	39	9	34	39	19	19	34	31	7	35	266	5.91
13	Energy	27	22	28	20	43	32	32	23	18	8	253	5.62
14	Exhibitionism	23	32	29	32	32	26	30	29	29	33	295	6.56
15	Fantasy	41	15	25	15	19	29	35	24	4	25	232	5.15
16	Harm Avoidance	3	36	37	0	13	15	19	7	11	17	158	3.51
17	Humanities	30	32	16	11	9	2	15	30	1	11	157	3.49
18	Impulsiveness	35	44	39	21	31	15	20	21	19	29	274	6.09
19	Narcissism	23	39	33	40	34	38	30	31	36	41	345	7.67
20	Nurturance	11	45	17	37	40	22	31	32	31	23	289	6.42
21	Objectivity	30	43	29	39	40	29	31	35	36	31	343	7.62
22	Order	41	19	22	26	17	41	15	32	41	1	255	5.67
23	Play	42	39	23	27	41	35	32	38	23	43	343	7.62
24	Practicalness	18	41	42	10	32	39	41	30	35	38	325	7.22
25	Reflectiveness	16	25	41	32	12	29	41	10	28	8	242	5.38
26	Science	37	11	21	29	34	37	23	15	13	28	248	5.51
27	Sensuality	24	33	30	28	34	34	22	22	29	24	280	6.22
28	Sexuality	26	20	41	35	44	44	37	30	33	29	349	7.76
29	Supplication	29	34	30	12	18	28	27	25	9	24	237	5.27
30	Understanding	41	21	28	28	32	34	38	19	4	43	287	6.38

* Numbers represent that proportion of total N who responded in the indicated (success) manner.

Σ = the total success responses out of 10 N possible.

$\bar{X}$ = the mean number of successful item responses per scale.

APPENDIX A

HSCI--RAW DATA--SCHOOL C (N = 50)

No.	Press Scale	Press Scale Items											
		1	2	3	4	5	6	7	8	9	10	Σ	X̄
1	Abasement-Assur.*	10	40	27	16	27	13	22	39	12	24	230	4.60
2	Achievement	38	14	16	23	27	37	44	32	22	37	290	5.8
3	Adaptability-Def.	11	44	25	44	36	5	41	6	12	12	236	4.72
4	Affiliation-Rej.	43	13	32	33	25	37	24	34	25	21	287	5.74
5	Aggression-Bl.Av.	23	17	26	23	16	17	24	9	13	9	176	3.52
6	Change-Sameness	42	23	48	17	30	23	24	37	39	26	309	6.18
7	Conjunct-Disj.	34	19	23	26	32	25	32	16	36	31	274	5.48
8	Counteract-Inferior	44	31	40	22	12	24	22	17	20	28	260	5.2
9	Defer-Restive	17	22	14	36	31	21	33	43	16	12	245	4.9
10	Dominance-Toler.	39	23	27	37	31	42	31	31	28	16	305	6.1
11	Ego Achievement	34	30	33	31	11	30	28	21	26	23	267	5.34
12	Emotion-Placid	29	15	45	43	13	35	34	34	18	24	290	5.8
13	Energy-Passive	26	15	29	16	38	22	36	29	19	11	241	4.8
14	Exhibition-Inf.	18	23	28	19	39	25	32	29	39	18	270	5.4
15	Fantasy-Achieve.	45	20	21	18	23	20	36	17	12	23	235	4.7
16	Harm Av.-Risk Tk.	19	45	42	1	9	12	12	12	5	28	186	3.72
17	Humanities-Soc.Sc	32	38	17	16	14	8	23	25	24	17	214	4.28
18	Impulsiveness-Deliberation	40	33	38	25	33	14	20	16	25	31	275	5.8
19	Narcissism	13	44	43	36	34	37	36	38	44	42	367	7.34
20	Nurturance-Rej.	15	48	13	29	21	32	37	28	33	30	286	5.12
21	Object-Project.	19	46	18	33	42	31	25	30	38	36	318	6.36
22	Order-Disorder	40	17	20	31	9	43	11	37	44	6	257	5.14
23	Play-Work	39	21	24	35	45	22	31	33	26	35	311	6.22
24	Practical	19	37	8	8	32	41	42	31	31	40	289	5.78
25	Reflectiveness	19	19	35	39	17	23	37	18	33	21	261	5.22
26	Science	30	15	28	27	38	39	31	9	9	27	253	5.06
27	Sensuality-Purit.	23	25	20	12	28	21	32	26	15	37	239	4.78
28	Sexuality	18	28	39	40	45	40	31	32	27	25	325	6.5
29	Supplication	33	40	27	18	10	28	23	31	14	34	258	5.16
30	Understanding	46	29	19	22	47	28	42	23	8	45	309	6.18

* Numbers represent that proportion of total N who responded in the indicated (success) manner.

Σ = the total success responses out of 10 N possible.

$\bar{X}$ = the mean number of successful item responses per scale.

APPENDIX A
HSCI--RAW DATA--SCHOOL D (N = 50)

No.	Press Scale	Press Scale Items											
		1	2	3	4	5	6	7	8	9	10	Σ	$\bar{X}$
1	Abasement	*46	38	35	21	15	19	19	25	12	26	226	4.52
2	Achievement	40	20	31	23	29	43	42	30	17	33	308	6.16
3	Adaptability	8	43	15	29	35	6	38	18	29	9	230	4.60
4	Affiliation	48	26	33	30	37	39	36	40	30	31	350	7.00
5	Aggression	38	20	10	33	20	23	18	18	23	4	207	4.14
6	Change-Sameness	50	23	31	10	27	22	7	10	17	31	228	4.54
7	Conjunctivity	33	27	31	40	32	32	33	22	41	32	323	6.46
8	Counteraction	48	38	38	35	16	26	20	20	43	20	304	6.08
9	Deference	20	17	9	32	40	11	33	44	21	14	241	4.82
10	Dominance	43	26	22	37	31	34	36	27	30	16	302	6.04
11	Ego-Achievement	40	22	24	34	21	37	18	26	32	24	278	5.56
12	Emotionality	39	18	40	33	12	20	34	30	15	36	277	5.54
13	Energy	30	17	27	23	40	30	26	22	23	15	253	5.06
14	Exhibitionism	33	34	23	32	36	26	28	34	30	38	314	6.28
15	Fantasy-Achieve.	42	13	24	16	22	26	41	23	9	34	250	5.00
16	Harm Avoidance	10	35	41	5	11	10	18	8	13	15	166	3.32
17	Humanities	37	37	20	19	13	6	17	33	33	17	236	4.72
18	Impulsiveness	36	39	39	21	30	22	19	35	24	33	293	5.96
19	Narcissism	17	32	41	39	35	35	37	30	40	46	352	7.04
20	Nurturance	10	46	8	31	28	23	39	29	22	30	266	5.32
21	Objectivity	29	43	26	38	40	33	25	27	37	31	329	6.58
22	Order	44	30	24	27	22	31	15	33	46	10	272	5.44
23	Play	46	35	36	32	40	29	36	37	18	50	359	7.18
24	Practicalness	29	44	9	14	23	41	49	29	32	39	309	6.18
25	Reflectiveness	23	16	41	38	21	34	41	12	30	26	282	5.64
26	Science	41	7	22	27	43	38	25	23	14	30	270	5.40
27	Sensuality	5	33	15	21	22	30	17	19	10	33	205	4.10
28	Sexuality	26	16	47	36	48	46	28	34	35	29	345	6.90
29	Supplication	23	40	27	6	12	25	27	20	5	33	218	4.36
30	Understanding	44	21	23	28	37	33	38	28	9	46	307	6.14

* Numbers represent that proportion of total N who responded in the indicated (success) manner.

Σ = the total success responses out of 10 N possible.
$\bar{X}$ = the mean number of successful item responses per scale.

APPENDIX A

HSCI--RAW DATA--SCHOOL E (N = 25)

No.	Press Scale	Press Scale Items											
		1	2	3	4	5	6	7	8	9	10	Σ	X̄
1	Abasement	*2	14	6	5	2	6	5	21	9	5	75	3.00
2	Achievement	25	23	22	21	24	22	24	12	22	23	218	8.72
3	Adaptation	2	22	10	23	24	1	16	13	8	2	121	4.84
4	Affiliation	22	20	20	23	3	23	22	2	14	9	158	6.32
5	Aggression	1	8	9	4	7	1	11	2	1	3	47	1.88
6	Change	14	22	14	18	23	15	18	20	22	17	183	7.32
7	Conjunctivity	25	22	19	21	24	22	23	20	24	23	223	8.92
8	Counteraction	23	19	23	17	4	21	20	10	22	7	166	6.64
9	Deference	18	23	3	10	22	8	22	23	20	3	152	6.08
10	Dominance	13	14	13	9	10	17	10	11	10	7	114	4.56
11	Ego Achievement	20	17	24	12	6	12	19	16	20	19	165	6.60
12	Emotionality	23	8	22	24	12	17	18	19	15	20	179	7.16
13	Energy	21	18	20	19	24	15	22	21	20	19	199	7.96
14	Exhibitionism	6	23	13	16	16	13	9	16	13	18	143	5.72
15	Fantasy Achieve.	23	4	22	15	8	21	24	11	6	18	152	6.08
16	Harm Avoidance	8	21	20	7	2	22	8	8	8	14	118	4.72
17	Humanity	19	13	11	19	13	3	11	20	4	17	130	5.20
18	Impulsiveness	23	23	17	10	14	19	12	7	12	18	155	6.20
19	Narcissism	6	24	23	23	24	20	24	25	24	23	216	8.64
20	Nurturance	20	10	20	16	6	20	4	13	20	20	149	5.96
21	Objectivity	20	24	20	23	24	20	20	21	23	23	218	8.72
22	Order	23	14	11	20	10	24	18	24	24	4	172	6.88
23	Play	23	23	4	11	25	18	19	21	5	17	166	6.64
24	Practicalness	7	20	22	10	21	17	24	15	18	16	170	6.80
25	Reflectiveness	6	15	21	14	21	20	24	11	22	13	167	6.68
26	Science	15	10	20	18	23	23	21	21	11	20	183	7.32
27	Sensuality	6	16	12	22	11	1	23	16	9	12	117	4.68
28	Sexuality	1	4	24	15	22	14	10	16	9	6	121	4.84
29	Supplication	23	24	20	1	7	18	23	22	5	16	159	6.36
30	Understanding	24	11	20	20	24	22	24	17	2	24	188	7.52

* Numbers represent that proportion of total N who responded in the indicated (success) manner.

Σ = the total success responses out of 10 N possible.

X̄ = the mean number of successful item responses per scale.

APPENDIX B

SIGNIFICANT ENVIRONMENTAL PRESS CONDITIONS

APPENDIX B

SIGNIFICANT ENVIRONMENTAL PRESS CONDITIONS

Scale No.		Item No.	Level of Significance $p < .05$	$p < .02$	$p < .01$ Successful Observations
1. Abasement versus Assurance					
School A	(n=50)	61			36
		271			33
* School B	(n=50)	none			
School C	(n=50)	31			40
		211			39
School D	(n=50)	31			38
		61			35
School E	(n=25)	211			24
2. Achievement (success)					
School A	(n=50)	32			46
		152			37
		182			42
		242			36
		272			40
* School B	(n=50)	2			39
		122			36
		152			44
		182			39
School C	(n=50)	152			37
		182			44
		212		32	
		272			37
School D	(n=50)	2			40
		152			43
		182			42
		272		33	
School E	(n=25)	2			25
		32			21

Scale No.	Item No.	Level of Significance Successful Observations $p < .05$	$p < .02$	$p < .01$
2. Continued				
	62			19
	92	18		
	122			23
	152			20
	182			24
	242			19
	272			21
3. Adaptability versus Defensiveness				
School A (n=50)	33			48
	123			35
* School B (n=50)	33			48
	93			38
	123			42
	183			41
School C (n=50)	33			44
	93			44
	123			36
	183			41
School D (n=50)	33			43
	123			35
	183			38
School E (n=50)	33			20
	93			21
4. Affiliation versus Rejection				
School A (n=50)	123			44
	14			44
	34			38
	64	33		
	124			40
	154			43
	184		34	
	214		34	
	244			36
* School B (n=50)	14			48
	34			42
	64			36

Scale No.		Item No.	Level of Significance $p < .05$ Successful Observations	$p < .02$	$p < .01$
4. Continued					
		94			38
		154			47
		184			43
		214		34	
School C	(n=50)	14			43
		64	32		
		94	33		
		154			37
		214		34	
School D	(n=50)	14			48
		64	33		
		124			37
		154			39
		184			36
		214			40
School E	(n=25)	14			19
		94			22
		154			21
		184			20
5. Aggression versus Blame Avoidance					
School A	(n=50)	95			40
* School B	(n=50)	none			
School C	(n=50)	none			
School D	(n=50)	15			38
		95	33		
School E	(n=25)	none			
6. Change versus Sameness					
School A	(n=50)	6			45
		66			39
		126			40
		276	33		
* School B	(n=50)	16			47
		36	32		
School C	(n=50)	16			42
		66			48
		216			37
		246			39
School D	(n=50)	16			50

Scale No.		Item No.	Level of Significance p < .05 Successful Observations	p < .02	p < .01
6. (Continued)					
	School E (n=50)	36			20
		246			20
7. Conjunctivity versus Disjunctivity					
	School A (n=50)	17			42
		37	33		
		97			39
		187			36
		247	33		
	* School B (n=50)	17			42
		37	33		
		97			46
		127			37
		187			41
		247			41
	School C (n=50)	17		34	
		127	32		
		187	32		
		247			36
	Schdol D (n=50)	17	33		
		97			40
		127	32		
		157	32		
		187	33		41
		247			
		277	32		
	School E (n=25)	17			24
		37			19
		97	18		
		127			24
		157			20
		187			22
		247			23
		277			22
8. Counteraction versus Inferiority Avoidance					
	School A (n=50)	18			44
		38			38
		68			442

Scale No.		Item No.	Level of Significance p< .05 Successful Observations	p< .02	p <.01
8. (Continued)					
* School B	(n=50)	18			44
		68			43
School C	(n=50)	18			44
		68			40
School D	(n=50)	18			48
		38			38
		68			38
		98			35
		248			43
School E	(n=25)	18			21
		68			21
		158		18	
		248			19
9. Deference versus Restiveness					
School A	(n=50)	129			38
		219			39
* School B	(n=50)	128			40
		189			42
		219			46
School C	(n=50)	99			36
		189		33	
		219			43
School D	(n=50)	99		32	
		129			40
		189		33	
		219			44
School E	(n=25)	39			21
		129			20
		189			19
		219			22
10. Dominance versus Tolerance					
School A	(n=50)	10			46
		100			39
		130			35
		160			41
		220		32	

Scale No.		Item No.	Level of Significance p < .05	p < .02	p < .01
			Successful Observations		
10. (Continued)					
* School B	(n=50)	10			45
		70			43
		100			35
		130			34
		160			42
School C	(n=50)	10			39
		100			37
		160			42
School D	(n=50)	10			43
		100			37
		160		34	
		1900			36
School E	(n=25)	none			
11. Ego Achievement					
School A	(n=50)	11			40
		101			39
		281	33		
* School B	(n=50)	11			43
		41			38
		101			36
School C	(n=50)	11		34	
		71	33		
School D	(n=50)	11			40
		101		34	
		161			37
		251	32		
School E	(n=25)	71			24
12. Emotionality versus Placidity					
School A	(n=50)	12		34	
		72			44
		102			45
		192			38
		222			36
		282			38
* School B	(n=50)	12			43
		72			38
		102			43
		192			38

Scale No.		Item No.	Level of Significance p< .05 Successful Observations	p< .02	p< .01
12. (Continued)					
		222		34	
		282			39
School C	(n=50)	72			45
		102			43
		162			35
		192			34
		222			34
School D	(n=50)	12			39
		72			40
		102	33		
		192		34	
		282			36
School E	(n=25)	12			22
		72			20
		102			23
13. Energy versus Passivity					
School A	(n=50)	13			43
		133			41
* School B	(n=50)	133			48
		163			35
		193			35
School C	(n=50)	133			38
		193			36
School D	(n=50)	133			40
School E	(n=25)	133			24
		193			20
		223	18		
14. Exhibitionism versus Inferiority Avoidance					
School A	(n=50)	14	32		
		124			39
		254			36
		284			38
* School B	(n=50)	44			36
		74	32		
		104			36
		134			35
		224	32		

Scale No.		Unit No.	Level of Significance p < .05 Successful Observations	p < .02	p < .01
14. (Continued)					
		254	32		
		284			37
School C	(n=50)	134			39
		194	32		
		254			39
School D	(n=50)	14	33		
		44		34	
		104	32		
		134			36
		224		34	
		284			38
School E	(n=25)	44			22
15. Fantasied Achievement					
School A	(n=50)	15			41
		195			41
		285			35
* School B	(n=50)	15			45
		165	32		
		195			39
School C	(n=50)	15			45
		195			36
School D	(n=50)	15			42
		195			41
		285		34	
School E	(n=25)	15			21
		75			20
		165	18		
		195			23
16. Harm Avoidance versus Risk Taking					
School A	(n=50)	46			42
* School B	(n=50)	46			40
School C	(n=50)	76			41
		46			45
		76			43
School D	(n=50)	46			35
		76			41
School E	(n=25)	46	18		
		166			19

Scale No.	Unit No.	Level of Significance p <.05 Successful Observations	p <.02	p <.01
17. Humanities versus Social Science				
School A (n=50)	47			41
	227		32	
* School B (n=50)	17		33	
	47			36
	227		33	
School C (n=50)	17		32	
	47			38
School D (n=50)	17			37
	47			37
	227		33	
	257		33	
School E (n=25)	none			
18. Impulsiveness versus Deliveration				
School A (n=50)	18			36
	48			47
	78			44
	138			37
	288		32	
* School B (n=50)	18			39
	48			49
	78			43
	288		32	
School C (n=50)	18			40
	48		33	
	78			38
	138		33	
School D (n=50)	18			36
	48			39
	78			39
	228			35
	288		33	
School E (n=25)	18			21
	48			21
	49			43
	79			37
19. Narcissism				
School A (n=50)	109			44
	139		34	
	169			35

Scale No.		Item No.	Level of Significance p < .05 Successful Observations	p < .02	p < .01
19. (continued)					
		199			36
		229	33		
		259			35
		289			43
* School B	(n=50)	49			43
		79			37
		109			44
		139			38
		169			42
		229		34	
		259			40
		289			45
School C	(n=50)	49			44
		79			43
		109			36
		139		34	
		169			37
		199			36
		229			38
		259			44
		289			42
School D	(n=50)	49	32		
		79			41
		109			39
		139			35
		169			35
		199			37
		259			40
		289			46
School E	(n=25)	49			24
		79			22
		109			21
		139			24
		199			24
		229			25
		259			24
		289			22
20. Nurturance versus Rejection					
School A	(n=50)	50			47
		110			35

Scale No.		Item No.	Level of Significance p < .05 Successful Observations	p < .02	p < .01
20. (continued)					
		140			36
		200			38
		230	33		
		260	33		
*	School B (n=50)	50			50
		110			41
		140			44
		200		34	
		230			35
	School C (n=50)	50			48
		170	32		
		200			37
		260	33		
	School D (n=50)	50			46
		200			39
	School E (n=25)	none			
21.	Objectivity versus Projectivity				
	School A (n=50)	51			47
		111			37
		141			38
		231	33		
		261		34	
*	School B (n=50)	51			48
		81	32		
		111			43
		141			44
		171	32		
		231			39
		261			40
		291		34	
	School C (n=50)	51			46
		111	33		
		141			42
		261			38
		291			36
	School D (n=50)	51			43
		111			38
		141			40
		171	33		
		261			37

Scale No.		Item No.	Level of Significance p< .05 Successful Observations	p< .02	p <.01
21. (continued)					
School E	(n=25)	51			24
		111			22
		141			23
		231	18		
		261			21
		291			22
22. Order versus Disorder					
School A	(n=50)	22			39
		172			45
		232			35
		262			42
* School B	(n=50)	22			46
		172			46
		232			36
		262			46
School C	(n=50)	22			40
		172			43
		262			44
School D	(n=50)	22			44
		232	33		
		262			46
School E	(n=25)	22			21
		172			24
		232			23
		262			24
23. Play versus Work					
School A	(n=50)	23			45
		53			41
		83			39
		113		34	
		143			42
		173		34	
		233			35
		293	32		
* School B	(n=50)	23			47
		53			43
		143			46
		173			39

Scale No.		Item No.	Level of Significance p < .05	p < .02	p < .01 Successful Observations
23. (continued)					
		203			36
		233			42
		293			48
	School C (n=50)	23			39
		113			35
		143			45
		233		33	
		293			35
	School D (n=50)	23			46
		53			35
		83			36
		113		32	
		143			40
		203			36
		233			37
		293			50
	School E (n=25)	23			22
		53			22
		143			25
		233		18	
24. Practical					
	School A (n=50)	24			35
		54			41
		84			38
		144			36
		174			36
		204			35
		264			35
		294			36
*	School B (n=50)	54			45
		84			46
		144			35
		174			43
		204			45
		264			39
		294			42
	School C (n=50)	54			37
		144		32	
		174			41
		204			42
		294			40

Scale No.		Item No.	Level of Significance p < .05 Successful Observations	p < .02	p < .01
24. (Continued)					
School D	(n=50)	54			44
		174			41
		204			49
		264	32		
		294			39
School E	(n=25)	74			20
		144	18		
		204			23
25. Reflectiveness					
School A	(n=50)	25			37
		85	32		
		115			38
		205			45
* School B	(n=50)	85			45
		115			36
		205			46
School C	(n=50)	85			35
		115			39
		205			37
		265	33		
School D	(n=50)	85			41
		115			38
		175		34	
		205			41
School E	(n=50)	85	18		
		205			23
		265			20
26. Science					
School A	(n=50)	56			37
		116	33		
		146			35
		176			40
* School B	(n=50)	26			41
		116	32		
		146			38
		176			41
School C	(n=50)	146			38
		176			39

Scale No.		Item No.	Level of Significance p <.05 Successful Observations	p <.02	p <.01
26. (Continued)					
School D	(n=50)	26			41
		146			43
		176			38
School E	(n=25)	146			22
		176			22
		206		18	
		236		18	
27. Sensuality versus Puritanism					
School A	(n=50)	27			38
		57			41
		87			39
		177			39
		207		33	
* School B	(n=50)	57			37
		147			38
		177			38
School C	(n=50)	207		32	
		297			37
School D	(n=50)	57		33	
		297		33	
School E	(n=25)	117			19
		207			21
28. Sexuality versus Prudishness					
School A	(n=50)	88			47
		118			41
		148			44
		178			37
		238		33	
		268		32	
		298			36
* School B	(n=50)	88			46
		118			39
		148			49
		178			49
		208			41
		268			37

Scale No.		Item No.	Level of Significance p < .05 Successful Observations	p < .02	p < .01
28. (Continued)					
School C	(n=50)	88			39
		118			40
		148			45
		178			40
		238	32		
School D	(n=50)	88			47
		118			36
		148			48
		178			46
		238		34	
		268			35
School E	(n=25)	88			23
		148			19
29. Supplication versus Autonomy					
School A	(n=50)	179	32		
		299			35
* School B	(n=50)	29			45
		149			35
		179			38
		209			42
		299			48
School C	(n=50)	29	33		
		59			40
		299		34	
School D	(n=50)	59			40
		299	33		
School E	(n=25)	29			21
		59			23
		209			22
		239			20
30. Understanding					
School A	(n=50)	30			45
		150			37
		210			39
		300			43
* School B	(n=50)	30			45
		150			35
		180			38

Scale No.		Item No	Level of Significance p <.05 Successful Observations	p <.02	p <.01
30. (Continued)					
		200			42
		300			48
School C	(n=50)	30			46
		150			47
		210			47
		300			45
School D	(n=50)	30			44
		150			37
		180			33
		210			38
		300			46
School E	(n=25)	30			24
		150			24
		180			19
		210			24
		300			23

* School B has been interpolated from 45 to 50 subjects so that the ratio of observed successes can be compared.

Vita

Wilbur Nuel Stegman

Thesis: A DESCRIPTIVE STUDY OF CERTAIN SOCIO-PSYCHOLOGICAL CHARACTERISTICS OF SELECTED SECONDARY SCHOOL ENVIRONMENTS

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