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AN EMPIRICAL STUDY OF THE NEED FOR INDEPENDENCE

IN HIGH SCHOOL STUDENTS

by

© GEORGE HENRY BEVAN

A THESIS

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The undersigned certify that they have read, and recommend
to the Faculty of Graduate Studies for acceptance, a thesis entitled
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ABSTRACT

The purposes of this study were twofold: to investigate the nature of the need for independence in high school students; and to test hypotheses predicting relationships between the need for independence and student satisfaction, classroom climate, school climate, and certain personal and situational variables.

Two high schools were selected for the study, one rated as having the least open climate, and the other as having the most open climate of the ten schools in an urban school system. The Student Opinion Questionnaire was administered to 733 students in twenty-eight English classes in the two schools. This instrument consisted of three sections which measured need for independence, satisfaction, and classroom climate.

Need for independence was conceptualized as a function of three variables related to classroom decision making: perceived independence, preferred independence, and importance of preferred level of independence. Four dimensions of need for independence were identified: Curriculum Inputs, Physical Movement, Workload Dimensions, and Work Interactions.

Students in both schools perceived themselves to have less control than the teacher in all but one of twenty-two classroom situations. In every instance they indicated a preference for more control over decision making. Students generally rated desired levels of control as being above average in importance. The profiles of the two schools on each of the three variables, the four dimensions, and on total need for independence were strikingly similar.

A significant negative correlation was found between the combined factors of need for independence and student satisfaction.

A significant negative correlation was found between a student's rating of classroom climate and the dimensions of Curriculum Inputs, Workload Dimensions, Work Interactions, and total need for independence.

No significant difference was found between a student's need for independence in the least open-climate school as compared with students in the most open-climate school.

On the Curriculum Inputs dimension, a student's need for independence was found to be significantly related to his age, grade, and school program. Need for independence on the Work Interactions dimension was significantly related to average mark, school program, and age, the latter relationship being negative. Total need for independence was significantly related to school program, average mark, and English mark.

The results of this study suggest that a student's need for independence in the English classroom was not being fully met. Students appear to possess differential levels of need for control over decision making in classroom activities. The greatest need existed in the area of Curriculum Inputs, with students showing a specific need to participate more fully in choosing individual classroom learning activities.

The findings of this study suggest that not enough opportunities for making choices are being provided for older, more able students on the matriculation program. Teachers and administrators could examine the processes of decision making in the classroom with a view to extending the domain and range of student influence and involvement.

ACKNOWLEDGEMENTS

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CHAPTER I

THE PROBLEM

A basic incongruency exists between the personal needs of the healthy individual and the goal-oriented behavior required of individuals by formal organizations (Argyris, 1965, p. 176). Organizational practices which are designed to increase the predictability of employee behavior tend to provide employees with minimal control over their work. Increased passivity, dependence, and subordinance develop within the worker, and these are conditions which are the very opposite of the needs of the mature personality (Argyris, 1964, p. 58).

The need for self-esteem, including the need for independence and freedom, is one of the basic human needs (Maslow, 1954). The self-esteem needs, present to a greater or lesser extent in all individuals, are thought to be instinctive and to be essential to the full development of a healthy personality.

McGregor (1960) has argued that organizational effectiveness can be increased by integrating individual needs with organizational goals. There is some evidence that the performance of individuals within an organization may be related to their ability to participate in organizational decision making (Katz and Kahn, 1966, pp. 371-372). Positive motivation and higher morale may result when employees feel they are participating in decisions (Costello and Zalkind, 1963, p. 120). When individuals define their own goals and choose their paths to these goals, their self-esteem is increased (Argyris, 1964, pp. 26-27).

The objectives of public education have long included references to the meeting of individual needs. More recently, the emphasis has been on enabling the individual to develop, in full, his unique potential. There seems little that is contradictory between the psychologist's view and the educator's objective. Both agree that the meeting of the individual's needs is necessary for the development of a healthy personality.

With such agreement one would assume that educational structures and processes would have been established to facilitate the attainment of the individual's self-esteem needs, including independence. To what extent are the existing relationships and processes of the high school classroom conducive to the satisfying of this basic human need? In particular, how well does the student satisfy his need for independence by participating in the making of decisions in his English classroom?

Although the needs of the student are many, and all are more or less important, one need, the need for independence, is especially crucial during adolescence (Rogers, 1962). For this reason, this study has focused on the need for independence.

The Problem

The major purpose of this study was to determine the nature of the need for independence among high school students. The second purpose was to investigate the relationship between the student's perceived need for independence and:

1. the satisfaction of the student,

2. classroom climate,

3. school climate, and

4. other situational and personal variables.

Basic to the problems listed above was the problem of developing reliable and valid instruments for the measurement of need for independence, satisfaction, school climate, and classroom climate.

Importance of the Problem

The Report of the Provincial Committee on Aims and Objectives of Education in the Schools of Ontario (1968) contained this statement: "Each human being is deserving of the respect, identity, and right to develop toward the fulfillment of his unique potential [p. 21]." Some idea of the importance attached to the goal of maximum individual growth can also be acquired from a study of Clause 26 of the *Universal Declaration of Human Rights* (1968) by UNESCO, which states, in part, "Education shall be directed to the full development of the human personality. . . . [p. 111]."

The concept of the self-fulfilment of the individual is basic to Maslow's (1954) theory of personality and motivation. A hierarchy of basic human needs has been postulated, starting with the lower and more potent needs, physiological and safety, through the need for affiliation, to the higher needs for self-esteem and self-actualization. According to Maslow (1954, p. 92), the gratification of the lower basic needs is a prerequisite to the emergence and subsequent gratification of the higher needs. Thus, the attainment of full personality development is largely dependent upon the satisfaction of a person's self-esteem needs, one of which is the need for freedom and independence.

The need for independence and freedom is not only an important preliminary stage for the self-actualization of the individual, but it is also an intermediate step in the transition from childhood to adulthood. The direction of adolescent growth is clearly toward emancipation from family and other adults. Douvan and Adelson (1966, p. 126) have written that at adolescence independence becomes important for itself. Independence acquires meaning far beyond the particular concrete issue at hand. Friedenberg, in his book *The Vanishing Adolescent*, has stated that the function of adolescence is growth and individuation, and that these can be profitable only if a reasonable and increasing degree of independence is maintained (1959, p. 32). The importance of adolescent independence, as a precondition for responsible adulthood, has also been stressed by Kovar (1968, p. 5).

Many of the educational processes designed to achieve the various goals of education, including self-fulfilment and the preparation of students for adult roles, take place in the classroom. The impact of the pupil-teacher relationship on the effectiveness of learning has been investigated by numerous researchers, usually in terms of productivity and class morale (Anderson, 1963). The emphasis to date seems to have been on group rather than individual processes. Research on the needs and motives of the individual, while by no means neglected, has concentrated on achievement, affiliation, and conformity (Atkinson, 1958). A search of the literature has revealed no empirical study dealing with the need for independence of students in the classroom.

The present study was undertaken to determine the nature of the need for independence in high school students, and to explore the

relationship between this need and a number of important variables. The goal was to provide some empirical data concerning the need for independence, as well as some indication of the effectiveness of present classroom and school structures and processes in enabling students to meet this need.

Definition of Terms

In the planning stages of this study the concept of need for autonomy was proposed as the criterion variable, rather than the need for independence. From the literature, and from a survey of colleagues and faculty members, it was apparent that there was little hope of obtaining consensus on a working definition of the term "autonomy". It was also clear that the terms "autonomy" and "independence" had much the same meaning, and that they were being used interchangeably in the literature. For this reason, although the term "autonomy" was not used extensively in this study, some of its varied meanings are presented below.

Autonomy

In its most general psychological sense, autonomy refers to the maintenance of integrity of self (*Dictionary of the Social Sciences*, 1964). Other meanings include being self-governed and responding independently (*Webster's Seventh New Collegiate Dictionary*, 1967). Angyal (1968) has described autonomy as a trend toward mastery in which the individual strives to control his environment. Katz and Kahn (1966) have used the word "autonomy" in the sense of the individual having control over his own activities. Parsons (1964) included in

the meaning of the term ". . . a willingness to take responsibiliy [p. 50]."

Newman has defined autonomy as the ". . . right of individuals to be free of coercion and control; the privacy and personal freedom of each person to affect his own destiny; the need to participate in the making of decisions that affect oneself [p. 312]." However, there are limits imposed by an individual's social and cultural orientation on his ability to control his behavior by the exercise of his volition (Ritchie and Koller, 1964).

Savage (1968) has pointed out the close relationship between independence and autonomy. When an individual is given responsibility, and the opportunities to make decisions which rightfully belong to him, these needs are satisfied.

Murray (1938, p. 157), in his description of the need for autonomy, mentioned the following kinds of behavior: doing as one pleases regardless of the rules, speaking one's mind, defying convention, seeking independence, avoiding the domination of authority, being free to do and think as one likes.

For the reasons noted earlier, and because "autonomy" was not a variable which formed a part of this study, no definition of the term has been given here. A description of the various connotations of the term has been provided because of its similarity to the concept of independence.

Classroom Climate

The social climate of the classroom is the product of all the relations which affect it (Westby-Gibson, 1965, p. 348). Classroom

climate has been described by Ottaway (1962, p. 131) as the atmosphere

created by people's relations within a group. Walberg and Anderson

(1968, p. 414) have referred to the socioemotional climate of the

classroom as the environment in which learning takes place. For the

purpose of this study the definition of classroom climate which was

employed is due to Gibb (1960):

> *Classroom climate* is that unique pattern of inter-
> relationships among individuals in a classroom,
> students and teacher, which both contributes to and
> constitutes the personality of the group [p. 116].

Satisfaction

In this study the term "satisfaction" was used in connection

with certain objects of student relations: teachers, other students,

administrators, and progress in English. Under circumstances such as

these, satisfaction is more than a dictionary term meaning enjoyment,

contentment, and comfort. It is really job satisfaction as defined by

Katz and Kahn (1966, p. 370) and Morse (1953, p. 14). Satisfaction

becomes a student's liking for his role as student as well as the

intrinsic satisfaction he derives from the content of the learning

process.

The definition of satisfaction used in this study comes from

Vroom (1964, p. 99).

Satisfaction is defined as the affective orientations or attitudes

on the part of individuals toward work roles they are presently occupying.

Positive attitudes are conceptually equivalent to satisfaction, and

negative attitudes toward the student work role are equivalent to

dissatisfaction.

School Climate

The climate of a school has been compared to the personality of an individual (Halpin and Croft, 1963). The dominant feature of a school's personality is its pupil control or authority structure (Willower and Jones, 1967). For the purpose of this study, the definitions of open and closed school climates have been derived from description of humanistic and custodial pupil control orientations (Willower *et al.*, 1967, p. 5).

Open climate. An open school climate is one in which school management practices are democratic, student-oriented, and loosely structured insofar as rules for student behavior are concerned. In such a school, students, as opposed to teachers and administrators, make many of the decisions affecting their daily school routines.

Closed climate. A closed school climate is one in which school management practices are basically authoritarian, school-oriented, and rigidly structured as far as rules for student behavior are concerned. In such a school, student behavior is closely prescribed by rules and regulations which have been determined by the administration and staff.

Independence

Vroom (1964, p. 16) has defined need for independence as a predisposition to strive for self-reliance, to do things alone, without help.

Douvan and Adelson (1966) have identified one form of autonomy, behavioral, as that which focuses on behavior and decisions. They ask, "What can the youngster do on his own? What decisions can he make for and by himself [pp. 130-131]?" Chickering (1967) has also isolated this

dimension of autonomy. He has called it "instrumental independence" and has defined it as ". . . the ability to carry on activities and cope with problems without seeking help: . . . [p. 203]." Both of these descriptions are conceptually equivalent to what Schneiders (1960, p. 180) has referred to as "volitional independence", the opportunity to make and adhere to one's own decisions.

In summary, to be independent means making decisions affecting one's activities, being in control. This statement does not preclude the possibility of a student seeking and receiving information on which to make his own decisions. The need for independence for students in a high school classroom would involve students making decisions relating to learning activities and being in control of their learning environment.

Perceived independence. Perceived independence is defined as the extent to which the student perceives that he, as opposed to the teacher, *makes a decision* relative to a given classroom situation.

Preferred independence. Preferred independence is defined as the extent to which the student perceives that he, as opposed to the teacher, *should make* a decision relative to a given classroom situation.

Intensity. The intensity of a student's desire for the attainment of his preferred level of independence is defined as the *degree of importance* attached by the student to the attainment of his preferred state of independence.

Perceived manifest need for instrumental independence. Perceived manifest need for instrumental independence is defined as the product of the intensity of a student's desire for his preferred state of independence, and the difference between preferred and perceived levels of

independence, in the making of a decision relative to a given classroom situation.

"Need for independence" or "n Independence" will hereafter be used in this study in place of "perceived manifest need for instrumental independence".

Limitations

A number of limitations were present in both the method of gathering data and in the design of the study. Some of these limitations were inherent in the instruments while others were due to externally-imposed constraints. The major limitations have been described below.

Reliability of Data

The use of the questionnaire to obtain self-reports from students may have resulted in data of questionable accuracy. Problems of faulty perception, of lack of awareness of unconscious motives, and of deliberate or accidental errors contribute to a reduction in overall reliability and validity (Oppenheim, 1966).

Interrelationship of Needs

Almost without exception, psychologists agree that the motives, needs, and drives which stimulate individuals to action tend to be multiple rather than singular. Because of the interaction of certain need-states, great difficulty can be encountered in ascertaining the exact need or motive which has given rise to a particular form of behavior (Murray, 1938, p. 86).

The fact that certain attitudes toward behavior, as reported by students in this study, were attributed to the meeting of n

Independence, instead of to combinations of two or more needs, has imposed an additional limitation on the validity of the results.

Decision Making

In this study need for independence has been defined in terms of decision making along a teacher-student continuum. Items on the Perceived Independence subscale were chosen with the individual student-teacher interaction in mind. Nevertheless, students may have perceived that the class as a whole, or a group of students, influenced some decisions. For these items, then, the student was forced to choose from a teacher-student continuum when he may have felt that a teacher-class continuum to be more appropriate. To the extent that this situation did obtain, student responses were inaccurate and the validity of the study weakened. However, just as Vroom (1964, p. 14) noted in his studies, what was being determined was the student's perception of how a decision had been made, or should be made, and not how the student arrived at this perception.

Sampling Error

The inadvisability of disrupting the routines of two schools dictated that whole classes, rather than individuals, be asked to complete the research questionnaire. This ruled out any *a priori* attempt to obtain a random or representative sample. An even more serious sampling error was caused by the permissive attendance policy in force in School *B*. With only 76.6% of the total class enrolments in this school partici-pating, concern must be expressed about averages constructed from group data. Oppenheim (1966) has noted that those who do not respond to questionnaires tend to be non-representative of the population. Group

means from the available data are likely to be distorted, and comparisons and interpretations made correspondingly inaccurate.

Experimental Design

Since the purposes of the study were largely exploratory, the study was designed to include as many predictor variables as the literature indicated might be related to the need for independence. The presence of large numbers of variables, with their possible interactions, has rendered the analysis of data extremely difficult. The experimental design used in this study did not permit definitive conclusions to be drawn. No attempt was made to control for inter- actions between and among variables.

Membership

In this study the student has been viewed as a lower participant in the school organization, following Etzioni (1961). In this respect the role of the student resembles that of the worker in industry, and the findings of industrial studies concerning job satisfaction can be used as a basis for studying student behavior. If, on the other hand, students are not lower participants or members of the organization but clients as described by Blau and Scott (1962), the results of industrial research would not be applicable in a school setting.

Other Factors

Various influences on individual responses, such as group norms (Asch, 1956), mind set (Cronbach, 1946), and social desirability (Edwards, 1957) have been documented as sources of error in self-reporting. These factors have not been taken into account in the present study.

Delimitations

Grade Level

The study was conducted in two urban high schools, with students in grades 10, 11, and 12. The sample, therefore, consisted mainly of students in the 15 to 18 year age group, a category usually referred to as middle adolescence (Muuss, 1964).

Subject Area

The programming of students into five or more courses made it practically impossible to obtain a meaningful composite score on a student's need for independence over all his courses. The decision was made to restrict the study to one subject area, English, a course required of all students in the high schools of this province.

Organization of the Thesis

A brief discussion of the theory of needs and its relationships to both the need for independence and adolescence is presented in Chapter II. The procedures employed in the collection and analysis of data are set forth in Chapter III, together with a description of the research instrument. Chapter IV is devoted to reporting and discussing the findings of the study. The thesis concludes with a summary of the study and its implications for educational practice and research.

CHAPTER II

A REVIEW OF THE LITERATURE

The Concept of Need

Although Murray (1938) was not the first person to emphasize man's striving, seeking, desiring, wishing, and willing as the key to understanding human behavior, Hall and Lindzey (1957) have stated that ". . . his contributions have been the most distinctive [p. 171]." A full statement of Murray's theory of motivation, including the concepts of need, press, tension reduction, thema, need-integrate, unity-thema, regnancy, and vector-value schemes, is unnecessary here. Of prime importance for this study is the concept of need, a variable for which Murray made strenuous efforts to obtain an empirical definition.

Murray (1951b) has used the term "need" or "need disposition" to refer to the ". . . roughly measurable force in the personality which is guiding activities in the direction of a roughly definable goal; . . . [p. 277]." He has stated that the existence of a need can be presumed on the basis of:

1. the effect or end result of the behavior,
2. the particular pattern or mode of behavior involved,
3. the expression of a particular emotion or affect,
4. the selective attention and response to a particular class of stimulus objects,
5. the expression of satisfaction when a particular effect is achieved or disappointment when the effect is not achieved [1938, pp. 144-145].

Additional data are provided by subjective reports regarding feelings, intentions, and goals.

Using the general definition and the above criteria, Murray (1938) listed several different bases for classifying needs, two of which are pertinent to this study. The first distinction was between the primary or viscerogenic needs, and the secondary or psychogenic needs. From a subjective point of view, viscerogenic needs are those related to physical satisfaction while the psychogenic needs have to do with mental or emotional satisfaction (p. 77).

The second means of differentiation used was that between manifest and latent needs. Manifest needs are those which are permitted more or less direct and immediate expression. These needs are overt and are expressed through real action toward actual objects. On the other hand, latent needs are covert and are generally restrained, inhibited, or repressed (1938, pp. 111-112).

The need for autonomy was described by Murray (1938, p. 144) as being both a manifest need and a secondary need. He listed the desires and affects associated with n Autonomy as:

> 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
> independent and free to act according to impulse. To be
> unattached, unconditioned, irresponsible. To defy
> convention (1938, p. 156).

The Interrelation of Needs

Needs do not operate in complete isolation from one another. Murray (1951a) conceded that a hierarchy of needs existed in which certain tendencies take precedence over others. He used the term "prepotency" to indicate ". . . needs which become regnant with the greatest urgency if they are not satisfied [p. 152]." When two or more

needs are simultaneously aroused, the prepotent need will normally be attended to first by the individual. Other needs cannot be satisfied until minimal satisfaction of the prepotent need has been attained.

Motivation as Tension Reduction

Not only is the individual conceived as motivated by a complex set of needs, but, in addition, Murray and Kluckhohn (1953, pp. 36-37) have suggested that when a need is aroused a state of tension is present in the individual. Satisfaction of the need involves tension reduction. Man is seen as attempting to reduce a specific tension relevant to a particular need. In this way, satisfaction is mainly a result of need states and their behavioral outcomes. According to Murray and Kluckhohn (1953) "Need, then, is the fundamental variable, and degree of satisfaction the best indicator of its state of progress [p. 18]."

Since a need manifests itself in so many ways, Murray (1938) recognized the difficulty of arriving at a single operational definition. As he stated, ". . . the best objective basis is the attainment of an apparently satisfying effect, an effect which brings the activity to a halt. . . . The best subjective criterion is the occurrence of a wish or resolution to do a certain thing (to bring about a certain effect) [p. 125]."

A Hierarchy of Needs

A major part of the holistic-dynamic theory of personality developed by Maslow (1954) was his theory of motivation. Analysis of the conscious desires of the individual, Maslow (1954, p. 66) has proposed, leads ultimately to certain goals or needs which defy further

resolution. These needs-satisfactions appear to be ends in themselves and seem to require no further justification. In the average person such needs have the special quality of ". . . not being seen directly very often but of being more often a kind of conceptual derivation from the multiplicity of specific conscious desires [Maslow, 1954, p. 66]." He asserted that the study of motivation must include the study of ultimate human goals or needs or desires. Maslow (1954) has insisted that motivation is constant, complex, and ". . . it is an almost universal characteristic of practically every organismic state of affairs [p. 69]."

The atomistic approach to the cataloguing of drives or needs has been dismissed by Maslow as unsound. His objections derive from the assumptions such lists seem to imply, namely, that there is an equal probability of appearance of the various needs, and that the needs are of equal potency (1954, p. 70).

His emphasis on the influence of environment, possibility of attainment, integration and reality, have led Maslow to view human motives as originating in man's basic needs. Five categories of needs have been proposed by Maslow (1954, pp. 81-92). The needs have been arranged in a hierarchical order of priority or potency. Included are: the physiological needs such as hunger and thirst; the safety needs such as security and protection; the belongingness and love needs; the esteem needs such as self-respect and the respect of others; and the need for self-actualization.

The first four basic needs constitute what Maslow (1968) has termed "the deficiency needs." For the satisfaction of these needs the individual is dependent on others (p. 34). Although he has described

deficit needs as instinctive, and has provided a set of defining

characteristics, Maslow (1959a, p. 123) has maintained that there are

no objectively observable states which correlate consistently with

subjective reports.

Frustration of the deficit needs is seen by Maslow (1966) as

the major source of general illness of the personality. However, an

individual whose deficit needs are met is not considered by Maslow to

be "healthy"; he is merely "not sick." Before an individual can attain

psychological health his basic need for self-actualization must be met

(Maslow, 1966, p. 308). In Maslow's words, self-actualization refers

> . . . to a man's desire for self-fulfillment, namely, to
> the tendency for him to become actualized in what he is
> potentially. This tendency might be phrased as the desire
> to become more and more what one is, to become everything
> that one is capable of becoming [1954, pp. 91-92].

Thus, Maslow has divided basic motives or needs into deficit

motives and growth motives. This form of classification has also

been used by Allport (1961) and Herzberg (1966). Among adolescents

psychological health rarely includes the final stage of self-

actualization. Only among adults, and then usually late in life,

does the full-functioning of the individual and the realization

of his latent capacities and potentialities take place (Maslow, 1966,

p. 308).

In addition, as Maslow (1954) has pointed out, the concept of

emergence of a new need is not a sudden phenomenon but rather ". . . a

gradual emergence by slow degrees from nothingness [p. 101]." Two

additional points should be made concerning the basic needs: for some

people there is a reversal in the hierarchy of needs (Maslow, 1954,

p. 98); and the specific form that self-actualization takes varies

greatly among individuals (Maslow, 1954, p. 92).

Self-esteem Needs

Maslow (1959a) has referred to "autonomy" as a term some authors

use in place of self-actualization. He has not mentioned need for

autonomy as one of the self-esteem needs, but does include ". . . the

need for independence and freedom [1954, p. 90]." Self-esteem needs

also include ". . . desire for strength, for achievement, for mastery

and competence, for confidence in the face of the world. . . [p. 90]."

When the self-esteem needs are satisfied the individual acquires

feelings of self-confidence and worth, of being useful and necesssary.

An appreciation of the importance attached by Maslow to the esteem

needs can be gained from his statement that

> . . . the thwarting of these needs produce feelings of
> inferiority, of weakness, and of helplessness. These
> feelings in turn give rise to either basic discouragement
> or else compensatory or neurotic trends [1954, p. 91].

The Need for Independence

As a high school student with most of his other deficit needs

already met, the individual strives to satisfy his rapidly emerging

need for self-esteem. The self-esteem needs are interrelated, with

the gratifying of each partially contingent upon the gratification of

the others. The satisfying of a student's need for independence is

both a concomitant of the meeting of his needs for competence,

achievement, and mastery, and, at the same time, a prerequisite to the

acquisition by the student of feelings of confidence and self-worth.

In this study, a student's need for independence has been

conceptualized in terms of decision making in the English classroom.
Need for independence has been defined as a function of three variables
related to decision making: perceived independence, preferred
independence, and intensity of preferred level of independence.

Adolescence and the Need for Independence

Adolescence is an era of growth from childhood into adulthood.
It encompasses roughly the teen-age years (Staton, 1963, p. 169).
Church and Stone (1957, p. 268) have called adolescence a way-station
in human development. With the arrival of adolescence a child ceases
being a child, although he may not be in full accord with this change.
And yet he is not an adult, although he may so perceive himself. This
ambiguity of adolescent status has been blamed by Minuchin (1969) and
Rosenberg (1965) for the paradox in which the adolescent finds himself.
He is viewed by adults as mature and responsible enough to perform
adult-chosen tasks but is thought to be too irresponsible to do the
things he chooses for himself. In school there also exists the paradox
of a student's possession of the power of choice but having the teacher
deny him the opportunity to exercise it (Schneiders, 1960, pp. 180-181).
Although students may mentally disagree with teacher decisions made on
their behalf, they are no further ahead if they are unable to translate
their volition into conduct.

From the standpoint of the individual making a healthy adjustment,
the need for independence is one of the most important factors in human
personality development. Schneiders (1960) has argued that ". . .
teachers must realize that independence is the prerogative and the

natural goal of the developing personality [p. 179]." Without it

maturity and adequate socialization are out of the question. To a very

large extent a person is mature only if he strikes out for himself and

learns by experience how to meet responsibilities, and how to make

necessary and important decisions (Schneiders, 1960).

Adolescence brings about a gradual shift to a more responsible

life style (Eisenman, 1968, p. 187), for it is during adolescence that

independence must be achieved. As in the case of other human attributes,

independence is primarily a matter of learning. Providing the adolescent

with opportunities for voluntary and deliberate choice contributes to

maturity (Strang, 1968, p. 18). Depriving students of such

opportunities to make their own decisions may cause them to encounter

serious difficulties in assuming approaching adult roles (Schneiders,

1960).

According to Muuss (1964, pp. 31-32) the attitudes of the

individual undergo basic changes in early adolescence. In childhood,

because of his size and dependence on family, he tends to regard

himself as moving within an environment created by others. Now, he

begins to oppose dependency, whether created by parents, teachers or

the law. The establishment of volitional independence, so highly

valued by society, is an important but difficult developmental task for

the adolescent (Havighurst, 1951). Although children must have their

lifespace structured by adults, as they grow older the restrictions and

limitations must be progressively removed. Muuss (1964) has stated

that, if the young adult is to restructure his own world, he ". . .

should develop independence and responsibility by setting his own goals

and choosing his methods to reach them [p. 102]."

The relationship between independence and the development of a healthy self-concept has been recognized by many psychologists (Rogers, 1962; Rosenberg, 1965; Staton, 1963). A study was reported by Rogers (1962, p. 46) in which high school boys, who acted on their own initiative and resisted undue pressure from others, proved superior in making progress toward desired goals. Adolescents who see themselves as competent and successful tend to persist longer under difficulty. An important factor to mental health at any stage of human development, a healthy self-image is especially crucial during adolescence when the growing autonomy and physical strength of the adolescent would make a distorted self-concept dangerous.

Staton (1963, p. 41) has also noted the relationship between a strong self-concept and a sense of autonomy. He has stated that, "The essential element of individuality (becoming an individual in one's own right) is doing things as a result of one's own inclinations and ideas rather than responding to expressed or implied wishes of another [p. 44]."

Piers (1968, p. 170) and Maslow (1959b, p. 85) have drawn attention to the link between independence and creativity in adolescents. Creative adolescents were found to be high in self-sufficiency, autonomy, independence of judgment, and self-confidence (Piers, 1968, p. 171). Getzels and Jackson (1960) compared students high on creativity but not especially high on I. Q. with students high on I. Q. but not especially high on creativity. Both groups performed equally well on standardized tests. They concluded that highly creative students were much less concerned with conforming to

teacher demands and also much more imaginative and self-initiating in their own activities.

Strang (1957) had 277 high school students write compositions about growing up. The conclusions drawn from the analysis of these free responses were that the feeling of satisfaction with increasing independence was uppermost in students' minds, and that students were frustrated when their needs for independence were not fully met (pp. 141-143). Almost one-half of the students were aware of, and accepted, the inevitable increase in responsibility which accompanies greater independence.

An increasing sense of responsibility is necessary for full emotional maturation and for optimum adjustment to approaching adult roles (Staton, 1963, p. 256). The acceptance of responsibility plays a role in developing ". . . security, belongingness, mature adjustments to the demands of life, . . . [p. 257]." Adolescence, then, requires both the experience of accepting opportunities for self-determination, and the responsibility for the results of the use of these opportunities.

Turning more and more decision making over to young and inexperienced students may lead to serious consequences. This is a view shared by many parents and educators (Gottleib and Ramsey, 1964, p. 119). But these authors go on to point out that the natural desire of adults to protect adolescents from their own mistakes may lead to over-protection of youth and their over-dependency upon adults. This is an even more serious consequence in a society which values the independent man and ridicules the person incapable of making decisions by himself.

The secondary school is in a unique position to assist adolescents to achieve a healthier self-concept and to prepare them for

their adult role in society. According to some critics, however, the
school has failed the adolescent in his search for identity (Friedenberg,
1959), and at the same time the school has not adequately prepared all
young people for adult roles. Methods of instruction foster dependency
and lack of self-respect (Rogers, 1962, p. 417). Instead of treating
adolescents like children, teachers must encourage students to take
responsibility for planning their own participation in learning
(Jenkins, 1960, p. 175). When a student arranges his own work he
achieves a feeling of independence and is more likely to assume
responsibility for getting the work done (Cole, 1959, p. 628).

How closely do actual classroom and school practices approach
those advocated by psychologists to enhance student self-actualization
and to expedite the transition of the adolescent from childhood to
adulthood? Recent surveys in both Canada and the United States have
revealed a widely-held opinion by students that schools are failing to
achieve these goals (Harris, 1969; Neering, 1968, p. 5). This critical
view is shared both by educators (Bridges, 1969; Cawelti, 1968; Coleman,
1965), and educational philosophers (Kaplan, 1967; Nash, 1966).

The last mentioned has stated the case for change as forcefully as
anyone in the following passage:

> It is foolish to expect a young person to make wise
> decisions immediately after graduating from a school if
> his school experiences have not given him the opportunity
> to make all sorts of decisions in an atmosphere where
> unwise or immature decisions do not carry disastrous
> consequences. And yet, many of our schools constantly
> appear to hold such expectations, if we are to judge by
> the state of juvenile dependence in which they keep
> their pupils. In the high school the student must be
> given a growing responsibility for framing his own
> program of study, even though this includes the right
> to make the wrong choices [p. 232].

One of the purposes of this study was to investigate the degree to which high school students perceived their needs for independence to have been met within the classroom; to determine the extent to which students, rather than the teacher, made decisions with reference to classroom activities.

Basic Human Needs and the Motivation to Work

Industrial Studies

Within recent years Maslow's theory of motivation has been widely used in organization management literature and practice as a point of view from which to examine motivation to work (Costello and Zalkind, 1963). Clark (1961) attempted to integrate a number of research findings with Maslow's hierarchical needs structure. Despite the inadequacy of techniques for measuring need activation in work settings, Clark concluded that it was possible to relate human needs, and their satisfaction, to productivity and turn-over, and absenteeism (1961, p. 208).

Organizational hierarchy. Porter (1961, 1962, 1963) conducted a series of investigations in three industrial firms at the management level. His purpose was to find the extent to which supervisors' needs, in a modified Maslow hierarchy, had been met. He found significantly greater deficiencies in need fulfilment for self-actualization and autonomy at lower levels of management than at higher levels (1961, p. 8). Beer (1968) replicated Porter's work among clerical employees. His findings were that the lower participants of an organization had a high need for autonomy and self-actualization. No significant difference

was found between the need satisfaction patterns of routine clerical jobs as compared to more complex clerical jobs. The results seem to indicate that status, an ego or self-esteem need, is related in some manner to the satisfaction of an individual's need for autonomy, but that job complexity is not.

Responsibility. Applewhite (1965) reviewed the research concerning the general dimensions of job satisfaction. He concluded that the main components of job satisfaction were: attitude toward work group, general working conditions, attitude toward company, and attitudes toward supervision (p. 22). Applewhite also noted that ". . . needs are the key to understanding satisfaction [p. 15]." After comparing the needs-hierarchies used in various studies, he found that responsibility was near the top of the list for each of the occupational groups under study. Responsibility, in the sense of possessing initiative and being able to make independent decisions, is closely related to autonomy (Tannenbaum, 1966, p. 39).

Autonomy. Ross and Zander (1957), in a study of skilled female workers in a large company, reported that the satisfaction of the workers' psychological needs for recognition and autonomy was significantly related to employee turnover. Those who stayed with the company were much more likely to say that they had a chance to make decisions on their jobs (p. 334).

Trow (1957), in a laboratory study, investigated the need for autonomy. His findings were that ". . . the job satisfaction of a person in a task-oriented group is determined to a large extent by . . . the autonomy of the position he occupies in the information flow;

greater autonomy produces higher satisfaction [p. 208]."

Control. Blauner (1963), in a review of the general research

on job satisfaction, concluded that the major factors accounting for

occupational differences in job satisfaction were: occupational

prestige, control, and integrated work groups (pp. 84-92). Blauner

identified the following dimensions of control:

1. control over one's time or movement, or control over the pace of the work process,
2. control over the technical environment,
3. control over the social environment,
4. control as freedom from hierarchical authority [p. 86].

These dimensions are closely interrelated. Blauner (1963) has

stated that ". . . on the basis of the evidence . . . the greater the

degree of control that a worker has (either in a single dimension or as

a total composite) the greater his job satisfaction [p. 86]." His major

conclusion was that the principal source of job satisfaction was

autonomy and independence on the job (p. 79).

Participation. Vroom (1964) reported that there was substantial

evidence that the satisfaction of subordinates is positively correlated

to the extent to which they participate in making decisions and

controlling their work environment (p. 115). The possibility of a

personality variable interacting with the satisfaction-control

relationship was then investigated by Vroom. He found a higher positive

correlation for those with a high need for independence than for those

with a low need for independence. This finding confirmed an earlier

discovery by Trow (1957) that subjects with a strong need for autonomy

expressed lower satisfaction in dependent roles than those with a weaker

need for autonomy.

Studies (Morse, 1953; Ross and Zander, 1957; Trow, 1957; Vroom, 1960; and others) have indicated that a worker's satisfaction is significantly and positively related to the amount of responsibility he has in his position; the amount of autonomy he is able to exercise; and the extent of his participation in making decisions relating to his work. Despite the fact that terms such as responsibility, autonomy, and independence have not always been defined, in the studies cited, in precise, operational ways, it is apparent from their usage that these terms overlap considerably in meaning.

The similarities among needs for independence, participation in decision making, and control over work environment, were of such dimensions that the investigator has hypothesized that a student's need for independence is a function of his perceived control over decision making in the classroom.

Educational Studies

What makes children want to learn is a question that continues to occupy the attention of educational psychologists, just as it has for many years. There are almost as many theories of motivation as there are researchers in this field, and the factors they have investigated and reported on are almost as numerous. Despite the fact that a number of attempts have been made to show that mastery and competence are essential ingredients of self-esteem, and also that the drive for increasing independence is a prime motivating force during adolescent development, there appears to have been no research done on the student's need for independence in the classroom. Empirical studies in this area of student motivation are nonexistent. What follows is, of necessity, an abbreviated report because of the limited material available.

Achievement. Krebs (1958) found a significant positive relationship between n Achievement and n Independence (pp. 130-131). High achieving students were more independent in interpersonal relationships and less susceptible to conformity pressures than were low achievers. Mehrabian (1968) reported that student achievement scores correlated positively with their scores on Rotter's Internal-External Control Scale. High achievers perceived themselves as having a greater degree of control over events which influenced their lives (p. 115). Using the Stern Activities Index and the Edwards Personal Preference Schedule as measuring instruments, Divesta and Cox (1960) obtained correlations of -0.27 and -0.48 respectively between n Achievement and n Conformity (p. 262). The correlations were low but are indicative of the direction of the relationship between the two needs.

Affiliation. Empirical relationships between n Affiliation and n Independence are rather tenuous. Need for independence appears to have been subsumed under the construct "conformity" as one pole of the dependency-independency continuum (*Dictionary of Social Sciences*, 1964, p. 257). Hartrup, however, in reviewing the literature on dependence-independence among children, questioned the conclusion that dependence is the opposite of independence (1963, p. 338). He stated that the accuracy of the contentions of bipolarity or unidimensionality of these constructs depended on definitional problems.

If dependency is defined as in the *Dictionary of the Social Sciences* (1964) which states, in part, that "Dependency in its widest meaning denotes an affiliative need found in all individuals [p. 189]." n Affiliation would appear to be related in some way to n Independence.

Edwards (1959) has reported low negative correlations between n Autonomy and n Affiliation for college students.

Creativity. Earlier, studies by Getzels and Jackson, and by Piers, were cited. In these studies a positive relationship was found between creativeness in high school students and independent goal-directed activities. Highly creative students were also found to be less conforming to teacher demands.

Anxiety. The relationship between n Independence and anxiety is inferential. Walters (1960) has taken the view that ".... anxiety is the motivational state relevant to much dependency behavior [pp. 354-367]." Hartrup (1963, p. 358), in reviewing studies of anxiety in children, concluded that dependency needs played an important part in the personality dynamics of highly anxious and highly defensive children.

Classroom Climate

The social climate of the classroom may be viewed as the product of all the relationships that affect it (Westby-Gibson, 1965, p. 348). Another way of defining this term is to follow Ottaway's lead and consider social climate to be the atmosphere created by people's relations in a group (1962, p. 131). It will be noted that the difference between these two views is that the former is based on all the role-positions which impinge on the learning situation, including student, principal, superintendent, parent, and school board member, while the latter seems to concentrate on relationships between teacher and students.

Some writers, such as Marburger (1966), maintain that the principal makes the rules and sets the tone for the school. Bidwell

(1965, p. 976 et seq.), on the other hand, has pointed out that the structural looseness of the school organization permits teachers to work in isolation, relatively hidden from colleagues and superiors. Despite these differences in emphasis, there exists a high degree of consensus among students and practitioners of education that the teacher's role is crucial in determining both the social and academic outcomes of education.

The teacher is the key person in creating classroom climate (Walberg and Anderson, 1968, p. 414). Everything in the teacher's personality and behavior affects this climate (Westby-Gibson, 1965). The effectiveness of students in the learning situation depends largely on the teacher's perceptions and how he behaves toward students. The most critical aspect of the teacher's behavior is how he makes his influence felt.

There have been numerous investigations over the last thirty years of the impact of a teacher's leadership style on the morale and productivity of students. Lippitt and White (1958, pp. 502-505), in their classic study of leader behavior, found that democratic leadership resulted in greater independence on the part of group members and higher satisfaction with the outcomes of group activities, when compared with laissez-faire and authoritarian leadership styles.

Anderson (1945, 1946) found that teachers whose actions were analyzed along the dominative-integrative dimension, differed considerably in the extremes of these opposing forms of behavior. Teachers whose dominative contacts exceeded their integrative contacts were working against, rather than with, the students (1946, pp. 124-125). Another finding was that the greater the proportion of integrative behavior by the teacher, the higher was the frequency of student behavior in the

socially contributive and problem-solving categories. At the same time

there was a decrease in the incidence of aggressive behavior,

inattention, and refusal to follow directions.

The teacher's leadership style or personality has usually been

defined along the authoritarian-democratic dimension. R. C. Anderson

(1963) surveyed the results of 31 experiments designed to measure the

relationship between teacher behavior and two independent variables,

productivity and student morale. Except where there was high anxiety

about grades to be awarded on the basis of final examination results,

the studies generally indicated that morale (member satisfaction) was

higher in classroom groups where decisions were shared, than in

authoritarian or teacher-centered classrooms (p. 158).

Gibb (1960, pp. 121-124) has outlined one schema for describing

the climate in which learning takes place. At one pole is the supportive

climate, characterized by problem-sharing, acceptance, and empathy. A

supportive climate leads to self-initiated activity and promotes the

development of students as autonomous individuals. At the other extreme

is the defensive climate in which teacher activity is predominantly

persuasional, advice-giving, and student behavior-controlling. Teacher

behavior of this kind leads to image-defending and conforming student

behavior, a natural consequence of teacher-set norms. In Gibb's opinion

the teacher's behavior is critical in determining the norms of acceptance

in student attitudes.

School Climate

Halpin and Croft (1963) have referred to the organizational

climate of a school as being analogous to an individual's personality.

The Organizational Climate Description Questionnaire (OCDQ) was developed by Halpin and Croft for administration to teachers and administrators as a measure of a school's climate on the "openness-closedness" dimension. The OCDQ consists of eight subtests, with a school deriving its characteristic climate from the profile of its subtest scores.

Andrews (1965, p. 37) has cast some doubt on the usefulness of the "climate" score of a school as measured by the OCDQ. He has questioned the meaning of the concepts "open" and "closed," beyond the profiles they represent. Many studies have been conducted in schools with the OCDQ, leading to certain tentative conclusions about the principal's leadership behavior, staff morale, and school productivity. To date there has been no attempt to connect the openness of school climate with individual student needs.

The OCDQ was constructed to examine school climate from the standpoint of the principal-teacher relationship. The 64 items which constitute this instrument deal exclusively with the activities and attitudes of these categories of personnel. Neither the OCDQ itself, nor the underlying theoretical framework, was felt by this investigator to be appropriate for a study which focused on student attitudes toward decision making in the classroom.

The search for a new conceptualization of the term "open climate" uncovered two possible interpretations which might serve as a proper basis for selecting the two schools to participate in the study. The first of these is called the open and closed system of education by H. H. Anderson (1965). The reference is to systems of relations between students and teachers. An *open* system is one which is stimulating to

each person and accepting of the uniqueness of an individual's
perception and thinking. Closed systems are of two kinds: *personally
closed* - in which the teacher tends to restrict the expression of
uniqueness and obstruct or inhibit creative interactions; and
impersonally closed - a classroom situation in which education is
limited to the experience of others, with no room in the curriculum for
individual discovery, rearrangement, or reorganization.

In commenting on this view of openness Block et al. (1968,
pp. 198-231) have stated that interpersonal relationships in an open
educational system are characterized by sincerity, authenticity,
empathy, and purity of gesture. The attainment of emotional well-being
and mutual self-respect are considered to be equally as important as
achievement and success (Katz and Sandford, 1966, pp. 7-10). As novel
and as promising as this conception of school climate is, it suffers
from its very newness. For the most part the terms remain to be defined
satisfactorily and methods of measurement have yet to be devised.

The second approach to school climate is through the authority
structure of the school, an aspect of the maintenance function of school
organization (Gross and Popper, 1965). The dominant factor influencing
the personality of a school is pupil control (Willower and Jones, 1967,
pp. 107-109; Willower, 1965, p. 41). A later study by Willower et al.
(1967, pp. 3-4) confirmed the saliency of pupil control orientation in
the organizational life of the school. These studies seem to support
Waller (1932) in his description of the school organization as one which
emphasizes teacher dominance and student subordinance.

Appleberry and Hoy (1969, p. 75) used an adaption of a typology

developed by Gilbert and Levinson (1957) for studying patients in mental hospitals. In this theoretical framework pupil control ideology ranges along a continuum from "custodialism" at one extreme to "humanism" at the other. As contrasting types of individual teacher ideology and school organization, they are intended to rationalize ideal types which may never be fully realized.

The rigidly traditional school exemplifies the prototype for a custodial pupil control ideology which manifests itself in maintenance of order, impersonality, distrust of students, and centralized decision making by staff and administrators. A humanistic orientation ". . . stresses the importance of the individuality of each student [p. 75]," according to Appleberry and Hoy. Humanistically-oriented teachers have an accepting, trustful view of students, and confidence in them as self-disciplining and responsible individuals. Teachers in such a school are led to desire ". . . a democratic classroom climate with its attendant flexibility in status and rules, . . . and increased student self-determination [Willower et al., 1967, p. 6]."

In discussions with school principals and central office supervisory personnel, it became quite apparent to the investigator that it was the pupil control ideology concept which these educators equated with openness of school climate. Thus, whereas the two schools participating in this study have been designated as occupying extreme positions on the openness dimension of school climate, in reality the selection of the schools has been based on the pupil control ideology of the school's principal.

In their study of the Pupil Control Ideology (PCI) of teachers and principals, Appleberry and Hoy (1969, p. 81) found that it was the

PCI of the teacher and not that of the principal which determined school climate. Their hypothesis that the more open the school climate, the more humanistic would be the PCI of the principal was not sustained. Jones (1969, pp. 74-77) investigated the relationship between two dimensions of bureaucracy, authority and expertise, and the PCI of the school. No significant difference was found in mean PCI scores for schools rated high or low on either expertise or authority.

In locating the two high schools to serve as sample schools for this study, the following definitions of open climate and closed climate, as applied to schools, were used:

An *open climate* is one in which school management practices are democratic, liberal, student-oriented, and loosely-structured insofar as rules for student behavior are concerned. In such a school, students, as opposed to teachers and administrators, make many of the decisions affecting their daily school routines.

A *closed climate* is one in which school management practices are basically authoritarian, conservative, school-oriented, and rigidly-structured insofar as rules for student behavior are concerned. In such a school student behavior is closely prescribed by means of rules and regulations which are determined by the administration and staff.

Problems and Hypotheses

The primary purpose of this study was the investigation of the nature of the need for independence among high school students. In addition to the fundamental questions of definition, measurement, and description which formed an integral part of the exploratory study,

four specific sub-problems were studied. For each sub-problem a research hypothesis was advanced.

Sub-Problem 1

A number of industrial studies have linked employee satisfaction with the amount of independence and responsibility possessed by workers, and with the extent of employee participation in decision making (Morse, 1953; Ross and Zander, 1957; Trow, 1957; and Vroom, 1960). Strang (1957) found that among adolescents satisfaction was related to independence. This sub-problem was to determine whether or not there is a significant relationship between a student's need for independence and his perceived satisfaction.

Hypothesis 1. A negative relationship exists between a student's need for independence and his perceived level of satisfaction.

Sub-Problem 2

Teacher personality and leadership style have been identified as factors affecting classroom climate (Walberg and Anderson, 1968; Westby-Gibson, 1965). The possibility of a relationship between classroom climate and the participation by students in classroom decision making has been suggested by H. H. Anderson (1945, 1946), Lippitt and White (1958), and Gibb (1960). The second sub-problem was to determine whether or not a student's need for independence is significantly related to his rating of the climate of his English classroom.

Hypothesis 2. A negative relationship exists between a student's need for independence and his rating of the English classroom climate.

Sub-Problem 3

School climate, in this study, has been defined in terms of the pupil control ideology of the school principal. Research by Appleberry and Hoy (1967) and Willower et al. (1967) suggested that a school derived its climate from the Pupil Control Ideology score of its staff and not from the principal's score. The third sub-problem was to determine whether or not students in an open-climate school differ significantly from students in a closed-climate school, on each dimension and in total need for independence in the English classroom.

Hypothesis 3. There is no significant difference between the mean score on each dimension and on total need for independence for students in an open-climate school as compared to students in a closed-climate school.

Sub-Problem 4

No record was found of previous studies on the need for independence and its correlates among high school students. The fourth sub-problem was to determine whether or not a student's need for independence is significantly related to such personal and situational variables as: sex, grade, age, school program, period of attendance, average achievement in all subjects, English mark, aspiration level in English, absenteeism, future plans, socioeconomic status, English course, and teacher.

Hypothesis 4. There is no significant difference in student needs for independence between groups of students as determined by: sex, grade, age, school program, period of school attendance, average achievement in all subjects, English mark, aspiration level in English,

absenteeism, future plans, socioeconomic status, English course, and teacher.

Summary

In terms of Maslow's theory of needs, all high school students experience the same basic needs: physiological, safety, affiliation, esteem, and self-actualization. For this study the assumption has been made that, for the majority of high school students, the physiological and safety needs have been met. In addition, Gronlund (1963) has produced some evidence that the need for belonging is satisfactorily met for a large proportion of high school youth.

To achieve the next higher level of psychological well-being, the adolescent student strives to develop his self-esteem and gain the respect of others. The satisfying of his need for independence has been postulated as an essential ingredient in the development of a healthy personality for the student. Simultaneously, the student is assisted in making a satisfactory adjustment to his changing role status from childhood to adulthood.

It is in the school, particularly in the classroom, that opportunities for the fulfilment of a student's need for independence most frequently arise. By participating in the making of decisions relating to curriculum materials and processes, his physical movements, and in determining the nature of his social relationships, the student gradually gains mastery and control over those aspects of his learning environment which he perceives as being important to him.

In the process of becoming less dependent upon the teacher, the student begins to assume greater responsibility for his own learning

(Sebald, 1968, p. 451). Increased feelings of self-confidence and
self-worth are concomitants of a satisfied need for independence. The
way is thus cleared for the final step toward ultimate psychological
health; in Maslow's terms, the self-actualization of the individual.

CHAPTER III

METHODOLOGY

The study was conducted in two urban high schools, with the
collection of data occurring late in the fall semester, 1969. By that
time all students had received their first reports while the grade 10
students and other newcomers to the schools had become adjusted to their
new schools. Sufficient time had elapsed since the beginning of term
to allow all participants to develop attitudes about their English
teachers and to form perceptions about specific decision-making pro-
cedures in their English classes.

In this chapter the procedures followed in selecting the sample
schools and participating students are outlined. The development of
instruments for measuring need for independence, satisfaction, classroom
climate, and school climate are described. The chapter concludes with
an outline of the statistical tests employed in the analysis of data
and the testing of the research hypotheses.

The Sample

The Schools

To test the hypothesis concerning the effect of school climate
on a student's need for independence, two schools differing as widely
as possible on the openness dimension of school climate were selected.
To identify these schools, the School Climate Evaluation Questionnaire
was constructed and administered to the principals of all public high
schools in an urban school system. Each principal was asked to rate

his school on fourteen items relating to the openness dimension of school climate as defined in this study. This instrument, a copy of which can be found in Appendix A, was validated by a panel of three judges. The judges, all of whom were familiar with the operation of each of the nine high schools, independently selected the same two schools.

The total score (possible range from 14 to 56) for each school was used to rank the nine schools on openness of school climate. The higher the total score, the more open was the school's climate. The score of the nine schools ranged from a low of 19 to a high of 56, with a mean of 39.555 and a standard deviation of 3.297 (Table 1). On the basis of the obtained ranking, the two schools with extreme high and low scores were chosen as the sample schools. Subsequently, permission was obtained from the principals of the two schools in question to conduct the study in their schools. In this study the school with the closed or least open climate was designated as School A, and the school with the most open climate as School B.

The Students

In consultation with the vice-principal and the head of the English Department in each school, a sample of English classes was chosen. In both schools the participating classes were selected to obtain a distribution of students by sex, grade, and school program which was roughly proportional to that of the school's population.

School A. A limited number of student programs are offered in this school with the result that about 85% of the students are taking matriculation. The remaining programs available to students are

TABLE 1

SCORES OF NINE URBAN HIGH SCHOOLS ON THE
OPENNESS DIMENSION OF SCHOOL CLIMATE

School	Openness Dimension Score (minimum = 14, maximum = 56)
1	56
2	47
3	43
4	42
5	42
6	39
7	37
8	30
9	19

business education and the combined program, the latter having been established to meet a variety of student needs.

The final sample in School *A* consisted of 432 students in sixteen classes taught by ten different English teachers. Four hundred thirty two questionnaires, of which 428 were usable, were returned by students. Four questionnaires were rejected because students failed to respond to more than three items. The 428 students constituted a 91% sample of the students enrolled in the sixteen English classes and 20.7% of the 2067 students registered in School *A* at the time.

School B. School *B* offers a full range of high school programs which has resulted in a more even distribution of students by program. Approximately 50% of the 2315 students were registered in the matriculation program while the remainder took business education or another vocational program.

Twelve English classes consisting of 398 students were selected for the study. In contrast to the mandatory class attendance rule in School *A*, students in School *B* were permitted to choose for themselves whether or not to attend classes. Consequently, only 308 students were present to complete the questionnaire. Of these, usable questionnaires were received from 305 students, representing 76.6% of students enrolled in the English classes and 13.2% of the school population.

The distribution of students in the samples from the two schools is shown in Tables 2 and 3.

Data Collection

Both schools identified by means of the School Climate Evaluation Questionnaire agreed to participate in the study. The Student Opinion

Table 2

DISTRIBUTION OF STUDENTS IN SCHOOL *A* BY
COURSE, TEACHER, SEX, AGE, AND GRADE

(n = 428)

Class	English Course	Teacher	Sex		Age						Total	
			M	F	14	15	16	17	18	19	Class	Grade
1	33	1	2	25			6	20	1		27	
2	30	2	19	12		1	6	20	1	3	31	
3	30	3	14	13		2	3	21	1		27	Twelve
4	30	3	20	8			3	24	1		28	n = 138
5	30	4	15	10			10	14	1		25	
6	20	4	13	15	1	9	16	2			28	
7	20	4	20	12		8	23	1			32	
8	20	5	22	11		9	21	3			33	Eleven
9	20	6	12	11		7	14	2			23	n = 141
10	23	9	8	17		2	17	5	1		25	
11	10	6	8	20	7	19	2				28	
12	10	7	8	23	8	21	2				31	
13	10	8	17	14	12	18	1				31	
14	10	9	14	12	6	18	2				26	Ten
15	13	10	7	12	4	10	4	1			19	n = 149
16	13	10	4	10	1	11	2				14	
Totals			203	225	39	135	132	113	6	3	428	

TABLE 3

DISTRIBUTION OF STUDENTS IN SCHOOL *B* BY COURSE, TEACHER, SEX, AGE, AND GRADE

(n = 305)

Class	English Course	Teacher	Sex M	Sex F	Age 14	Age 15	Age 16	Age 17	Age 18	Age 19	Age 20	Total Class	Total Class Grade
1	30	1	19	9			4	14	6	3		28	
2	30	1	21	8			4	14	8	3	1	29	
3	33	2	6	10				10	5	1		16	Twelve
4	33	2	11	8			2	7	7	2	1	19	n = 92
5	23	3	10	12		1	13	6	1	1		22	
6	23	4	4	12			12	1	3			16	
7	20	4	15	19		5	26	2		1		34	Eleven
8	20	5	16	11		3	19	3		2		27	n = 99
9	10	6	22	13	6	24	5					35	
10	10	7	17	13	7	18	4	1				30	
11	10	8	10	14	6	15	3					24	Ten
12	10	4	12	13	2	16	7					25	n = 114
Totals			163	142	21	82	99	58	30	13	2	305	

Questionnaire, a copy of which has been placed in Appendix B, was administered to all students in the sample over a period of two weeks. Students were permitted to withdraw from the study if they so desired. A total of five students in the two schools did so.

Table 4 shows the total number of students in both schools who participated in the study. Questionnaires were rejected if more than three items were found to be unanswered. Otherwise, where an answer had been omitted the mean response was entered.

Data Analysis

Student responses to the Student Opinion Questionnaire (SOQ) were recorded on the questionnaire itself. Responses were coded where necessary and data cards prepared through the services provided by the Division of Educational Research at the University of Alberta. Each participant was assigned scores on n Independence (four factors and total), classroom climate, and satisfaction (three factors and total). The raw score on total need for independence was calculated for each student and the frequency distributions for Schools A and B were prepared (Appendix C – Table A). Mean scores for schools and within-school groups were computed, based on factor scores for each student, with a mean of 50 and a standard deviation of 10 (Harman, 1960, pp. 337-348).

The n Independence data for students in schools A and B were factor analyzed separately, using the principal axis method followed by varimax rotation, and also the promax rotation to oblique simple structure (Hendrickson and White, 1964, p. 65). Classroom climate and satisfaction data were also factor analyzed, using only the former method. The results of the various factor analyses are reported in

TABLE 4

NUMBER AND PERCENTAGE OF STUDENTS IN THE
SELECTED SAMPLES FOR SCHOOLS *A* AND *B*

School	Number of Classes	Students Enrolled	Students Participating	Sample as Percentage of Class Enrolment	Total School Enrolment	Sample as Percentage of School Enrolment
A	16	472	428	91.0	2067	20.7
B	12	398	305	76.6	2315	13.2

Tables 5 to 10, and in Appendix E – Tables F and G.

Student scores and school scores on n Independence were subjected to single-factor, one-way analysis of variance, using Model I (Winer, 1962).

To test hypotheses concerning combined or group effects of the four factors of n Independence and each of the predictors, one-way, multivariate analysis was employed following the computational procedures outlined by Bay (1969).

Tests for homogeneity of variance were conducted for all analyses of variance using the method developed by Keeping (1962, p. 214). While the results of these tests have not been reported, no between-group difference in means has been reported as significant unless the homogeneity of variance level of 0.05 was met.

Similarly, the distribution of scores in various subgroups and total score categories has been omitted. To ensure approximate equality of frequency in subgroup totals, categories were collapsed where this could be done without destroying the original basis for the grouping. In any event, Guilford (1965, p. 300) has said that the F-ratio statistic is not unduly disturbed by variations in the shape of the population distribution.

For testing the significance of differences between group means the Scheffé Multiple Comparison of Ordered Means Test was employed (Scheffé, 1964, p. 55). This test has been described by Ferguson (1966) as being more rigorous than other methods and as having the added advantage that "No special problems arise because of unequal n's [p. 297]."

To determine the degree of confidence that could be placed in over-all hypotheses, and, at the same time, to avoid treating the major variables as though they were unidimensional, the canonical correlation technique was used. In this method the interrelationships between two sets of measurements made on the same subjects are studied to ascertain the maximum correlation between linear functions of the two sets of variables (Cooley and Lohnes, 1962, pp. 35-45). According to these writers, the canonical correlation technique comes closest to answering the primary research question, "Is the first set of variables significantly related to the second set [p. 42]?"

Data from both schools were used in investigating the nature of the need for independence, and also in testing Hypothesis 3. However, since the sample from School *A* was larger and more representative, School *A* data only were used in testing Hypotheses 1, 2, and 4.

The Measurement of the Need for Independence

The computation of a score for each student on the criterion variable, perceived manifest need for instrumental independence, involved the measurement of three separate variables. Measurements for each of these variables were made on a five-point scale. Responses were assigned values from one to five on the assumption that the scale intervals for each variable were equal.

1. *Perceived independence. WHO DECIDES:*

   A. Almost entirely by you
   B Mostly by you, but with the help of your teacher
   C. About equally by yourself and the teacher
   D. Mostly by the teacher, but with your help
   E. Almost entirely by the teacher

2. *Preferred independence.* WHO SHOULD DECIDE:

    A. Almost entirely by you
    B. Mostly by you, but with the help of your teacher
    C. About equally by yourself and the teacher
    D. Mostly by the teacher, but with your help
    E. Almost entirely by the teacher.

3. *Intensity* of the student's desire for his preferred level of independence. *HOW IMPORTANT IS IT TO YOU:*

    A. Highly important
    B. Quite important
    C. Moderately important
    D. Slightly important
    E. Not important

Step 1

In the first step each individual's score on Variable 1, perceived independence, was subtracted from his score on Variable 2, preferred independence. The subtraction operation provided a quantitative measurement of the discrepancy between a student's preferred and perceived levels of control over an aspect of his learning environment.

Porter (1961, 1962), Trusty and Sergiovanni (1966), and Beer (1968) have all used the subtractive method to calculate what Porter (1961) has called ". . . the perceived deficiency in need fulfillment [pp. 1-3]." Morse (1953) followed essentially the same procedure in defining need satisfaction as the difference between an individual's desires and the amount of environmental return (pp. 27-39). Similarly, Ross and Zander (1957) assumed that need satisfaction was a function of the difference between the extent to which a need is met and the strength of the need.

Step 2

The discrepancy score obtained in Step 1 was then multiplied by

Variable 3, the intensity of the student's desire for his preferred level of independence. Operationally, then,

n Independence = Variable 3 (Variable 2 – Variable 1)

= *Intensity of desire for preferred independence*

multiplied by the difference between

Preferred Independence and *Perceived Independence*.

Vroom (1964) has criticized the subtractive model on the grounds that it fails to take into account the satisfaction an individual anticipates from, or the importance he attaches to, the attainment of the desired state. He has pointed out that an individual may desire an object or an outcome and yet derive little satisfaction from its attainment. Each person is affectively oriented toward a given preference, that is, the strength of his desire is dependent upon the expected utility of the preferred state (p. 15).

For this reason, Vroom (1964, p. 163) has proposed a multiplicative function to explain data on job satisfaction. The formula implies an interaction between a work role variable, such as influence in decision making, and a personality variable, such as the anticipated satisfaction from a desired outcome.

The advisability of employing the multiplicative model, instead of the subtractive model, in this study is open to question. The fact that students do differ in the importance they attach to their preferred level of independence was apparent in the interviews conducted during the course of developing the SOQ. In assessing the relative merits of the two models, Vroom (1964) said:

> On balance it would appear that the multiplicative model is
> more consistent with existing data than is the subtractive one.
> However, the evidence is by no means conclusive [p. 165]

Instrumentation

A survey of existing scales for measuring need for independence, satisfaction, and classroom climate failed to turn up any instrument or combination of instruments which would adequately serve the purposes of this study. A pilot study was conducted with the object of constructing subscales to measure each of the above variables. The procedures followed in developing the Student Opinion Questionnaire have been reported fully in Appendix D.

Following the preliminary study, the data for n Independence, satisfaction, and classroom climate were subjected to further analysis to determine the underlying dimensions.

Need for Independence Subscale

In arriving at final decisions regarding placement of items in the various dimensions, the varimax factor matrices for School *A*, School *B*, and Schools *A* and *B* combined, were compared. These analyses, (Tables 5, 6, and Appendix E – Table E) revealed the existence of a strong similarity among the item patterns of the matrices. The placement of 17 of the 22 items was identical in all three solutions. In an attempt to find the optimal solution to simple structure, the promax oblique factor rotation method of Henrickson and White (1964, pp. 65-70) was employed. This analysis of data for Schools *A* and *B* confirmed the distribution of items previously obtained by varimax rotation (Appendix E – Tables F and G).

Since the data required for the testing of Hypotheses 1, 2, and 4 came from the students of School *A*, the varimax solution for School *A*

TABLE 5

VARIMAX ROTATION FOUR FACTOR ANALYSIS
NEED FOR INDEPENDENCE — SCHOOL A

(n = 428)

Item	Communalities	Factors			
		I	II	III	IV
1	.608	.229	.698	.259	.033
2	.646	.147	.752	.236	.057
3	.654	.225	.763	.100	.109
4	.501	.429	.512	.042	.230
5	.535	.179	.410	-.075	.574
6	.598	.678	.261	.130	.229
7	.516	.658	.206	.194	.060
8	.598	.666	.204	.320	.107
9	.674	.749	.173	.279	.071
10	.624	.740	.145	.214	.096
11	.501	.562	.228	.176	.319
12	.434	.335	.416	.150	.335
13	.416	.125	.334	.372	.388
14	.489	.548	.139	.275	.306
15	.363	.294	.150	.495	.091
16	.458	.263	.066	.266	.560
17	.364	-.022	.091	.179	.569
18	.554	.165	.077	.693	.202
19	.528	.270	.122	.631	.207
20	.554	.150	.234	.679	.122
21	.531	.265	-.062	.226	.637
22	.398	.317	.097	.514	.157
	11.545	3.978	2.749	2.690	2.127

Per cent of Common Variance

| | 100.000 | 34.458 | 23.810 | 23.304 | 18.428 |

Per cent of Total Variance

| | 52.746 | 18.082 | 12.494 | 12.229 | 9.670 |

TABLE 6

VARIMAX ROTATION FOUR FACTOR ANALYSIS
NEED FOR INDEPENDENCE – SCHOOL *B*

(n = 305)

		Factors			
Item	Communalities	I	II	III	IV
1	.490	.063	.148	.561	.386
2	.654	.140	.164	.762	-.165
3	.657	.225	.054	.777	.009
4	.410	.294	.133	.485	.267
5	.292	.248	.259	.356	.191
6	.663	.751	.105	.276	.110
7	.604	.737	.195	.097	.119
8	.545	.631	.315	.183	.117
9	.670	.790	.077	.136	.148
10	.618	.678	.374	.122	.062
11	.618	.678	.374	.122	.062
12	.436	.420	.234	.324	.316
13	.515	.225	.286	.215	.580
14	.464	.522	.394	.143	.126
15	.494	.148	.422	.191	.508
16	.462	.172	.620	.213	.042
17	.598	.106	-.088	-.111	.753
18	.485	.252	.599	.093	.233
19	.442	.342	.418	.232	.311
20	.534	.363	.610	-.000	.174
21	.538	.131	.709	.112	-.075
22	.357	.305	.370	.193	.299
	11.290	4.057	2.893	2.421	1.919

Per Cent of Common Variance

| | 100.000 | 33.936 | 25.621 | 21.442 | 17.001 |

Per Cent of Total Variance

| | 51.320 | 18.442 | 13.149 | 11.004 | 8.725 |

was used to identify the four basic dimensions of n Independence. These dimensions or factors were named: Curriculum Inputs, Physical Movement, Workload Dimensions, and Work Interactions. The distribution of items over the four factors was as follows:

I.   Curriculum Inputs: 6, 7, 8, 9, 10, 11, 14.

II. Physical Movement: 1, 2, 3, 4, 12.

III. Workload Dimensions: 15, 18, 19, 20, 22.

IV. Work Interactions: 5, 13, 16, 17, 21.

These four factors accounted for 52.5% of the total variance for School *A* and 51.3% of the total variance for School *B*. Factor I, Curriculum Inputs, was by far the strongest of the four factors, contributing approximately 35% of the total variance in the unrotated factor matrix, with each of the other factors supplying roughly five per cent of the total variance.

Classroom Climate Subscale

The subscale designed to measure classroom climate was based on the semantic differential rating scale (Osgood, Suci, and Tannenbaum, 1957). This attitude measurement technique has been described by Nunnally (1967) as being ". . . probably the most valid measure of connotative meaning available [p. 541]." Over numerous factor analytic studies with semantic differential scales, Osgood et al. (1957) found that the factor solutions of scale responses showed remarkable stability. Three major factors consistently manifested themselves: evaluation, potency, and activity, the first of these being extremely strong in contrast to the other two. Nunnally (1967, p. 542) has pointed out that there appear to be evaluative tendencies associated with each of the other

two factors, which suggests the possibility of a unidimensional scale
for attitude measurement.

In this study the SOQ, administered to all students, contained a
Classroom Climate Subscale in the form of a semantic differential, with
20 scales. For each scale, a pair of bipolar adjectives, the student
was asked to choose, from seven possible responses, the response which
best reflected his attitude toward his English class. An example is
given below.

Friendly   Unfriendly

very closely related	quite closely related	slightly related	neutral	slightly related	quite closely related	very closely related

Each response was scored from 1 to 7, with the higher rating
indicating more positive attitude. A student's rating of his English class
was then obtained by summing his scores over the 20 scales. The develop-
ment of this subscale is reported in Appendix D.

Factor analysis produced an unrotated factor matrix with one very
strong factor accounting for 43.9 and 50 per cent of the total variance
for Schools A and B, respectively (Tables 7 and 8). Following Linn's
(1968) suggestion that the number of factors is indicated by a break in
the curve obtained by plotting the eigenvalues, it was decided that the
evidence of unidimensionality of the subscale was sufficiently conclusive
to justify the use of the Classroom Climate Subscale as a single-factor
test. The factor was evaluative in content. The higher a student's total
score on this subscale, the more positive was his rating of his English
classroom.

TABLE 7

UNROTATED FACTOR MATRIX THREE FACTOR ANALYSIS
CLASSROOM CLIMATE - SCHOOL A

(n = 428)

		Factors		
Item	Communalities	I	II	III
1	.684	.587	-.578	.055
2	.632	.625	-.456	.063
3	.434	.572	.009	.087
4	.512	.689	-.162	-.011
5	.644	.749	-.088	-.272
6	.400	.578	-.248	-.038
7	.536	.639	.324	.128
8	.573	.703	-.152	-.202
9	.552	.575	-.383	.010
10	.633	.707	.339	-.130
11	.499	.598	.191	-.320
12	.601	.697	.064	-.114
13	.720	.770	.205	-.286
14	.715	.601	.187	.271
15	.649	.617	-.069	.506
16	.529	.703	.097	-.050
17	.692	.642	.309	.418
18	.674	.566	.159	.291
19	.650	.795	-.109	.061
20	.667	.738	.223	-.233
	11.994	8.747	1.342	1.010

TABLE 8

UNROTATED FACTOR MATRIX THREE FACTOR ANALYSIS
CLASSROOM CLIMATE - SCHOOL B

(n = 305)

Item	Communalities	Factors		
		I	II	III
1	.682	.687	-.382	.173
2	.736	.679	-.461	.179
3	.727	.503	-.176	-.554
4	.624	.712	-.145	.163
5	.705	.811	-.127	.171
6	.627	.680	-.155	.059
7	.632	.721	.258	-.188
8	.544	.676	-.141	.258
9	.749	.579	-.385	.169
10	.673	.748	.309	.074
11	.613	.706	.193	-.048
12	.582	.752	.030	.052
13	.721	.816	.171	.049
14	.640	.561	.060	-.567
15	.493	.676	-.019	-.137
16	.722	.790	.186	.008
17	.655	.776	.177	-.131
18	.639	.617	.361	.302
19	.687	.806	-.170	-.084
20	.601	.717	.261	.124
	13.053	9.960	1.146	1.043

Satisfaction Subscale

Each student was asked to rate his degree of satisfaction in eight situations having to do with his relations with significant others in the school or with his progress in English. Students chose from six categories of response ranging from highly satisfied to highly dissatisfied (Holdaway, 1969). The higher a student's score on each item or factor, the greater was his degree of satisfaction.

Factor analysis of the satisfaction scores for students in School *A* and in School *B* disclosed three factors with eigenvalues greater than one. These factors, with communalities totalling approximately 60% in each case, were the result of varimax rotation analysis.

The three independent factors were named: Satisfaction with School-Adult Relations, Satisfaction with Progress in English, and Satisfaction with Peer Relations. The eight items in this subscale were arranged among the factors as follows:

    I.   School-Adult Relations: 3, 5, 6.

   II. Progress in English: 2, 7, 8.

 III. Peer Relations: 1, 2, 4.

Except for Item 2, which loaded on both Factors II and III, the loadings on the other items were very large, 12 of 16 being 0.70 or greater (Tables 9 and 10).

Reliability

Estimates of the reliability of the three subscales of the SOQ were made using the following methods:

TABLE 9

VARIMAX ROTATION THREE FACTOR ANALYSIS
SATISFACTION – SCHOOL A
(n = 428)

Item	Communalities	Factors		
		I	II	III
1	.678	.015	.005	.823
2	.374	.009	.445	.419
3	.687	.823	.057	.075
4	.512	.140	.040	.700
5	.688	.819	.094	-.092
6	.454	.606	.122	.268
7	.762	.104	.866	.045
8	.653	.135	.797	-.014
	4.807	1.764	1.611	1.432

TABLE 10

VARIMAX ROTATION THREE FACTOR ANALYSIS
SATISFACTION — SCHOOL B

(n = 305)

Item	Communalities	Factors		
		I	II	III
1	.642	.209	.055	.771
2	.524	-.141	.329	.629
3	.596	.763	.052	.106
4	.487	.443	-.150	.519
5	.619	.779	.106	-.021
6	.568	.727	.117	.163
7	.783	.112	.857	.191
8	.811	.117	.893	.003
	5.030	2.003	1.693	1.334

1. *Test stability*. The test-retest procedure was used to measure the short-term stability of the various subscale scores.

2. *Internal consistency*. Item intercorrelations were calculated for all three subscales, using a form of Coefficient Alpha.

3. *Internal consistency*. An additional test of the internal consistency of each subscale was performed using item-subscale and item-total scale intercorrelations.

Test Stability

As a part of the pilot study, 32 of the original sample of 203 students were retested three weeks after the SOQ was first administered to them. A different approach was used to measure test stability (Kaplan, 1964, p. 199). By means of cross-tabulation the responses of the 32 students were compared in the test-retest situation. Acceptable agreement was defined as a difference between responses of not more than ± 1. For each item of the subscale the stability of the item was defined as the ratio of acceptable agreement responses to the number of students, 32 in each case.

Finally, to determine the stability of each subscale, the stabilities for all items of the subscale were averaged. The coefficients of stability ranged from 0.780 for Classroom Climate to 0.896 for the Satisfaction Subscale. All coefficients were significantly different from zero (Table 11).

Internal Consistency

In addition to test stability, Guilford (1965, pp. 440-441) has favored internal consistency as a primary test of scale reliability. Two measures of internal consistency were computed: item-factor and item-total subscale intercorrelations; and Coefficient Alpha (Nunnally, 1967, pp. 193-194).

TABLE 11

STABILITY OF RESPONSE TEST-RETEST
STUDENT OPINION QUESTIONNAIRE

(n = 32)

	Perceived Independence		Classroom Climate		Preferred Independence		Satisfaction
Item	Percentage Agreement	Item	Percentage Agreement	Item	Percentage Agreement	Item	Percentage Agreement
1	78.1	1	87.5	1	84.4	1	90.7
2	78.1	2	93.8	2	75.0	2	90.7
3	71.9	3	93.8	3	93.8	3	96.9
4	49.3	4	65.6	4	71.9	4	90.7
5	78.1	5	71.9	5	75.0	5	78.1
6	71.9	6	65.6	6	68.8	6	90.7
7	93.8	7	71.9	7	78.1		
8	90.7	8	96.9	8	78.1		
9	84.4	9	78.1	9	84.4		
10	71.9	10	84.4	10	78.1		
11	93.8	11	78.1	11	90.7		
12	75.0	12	75.0	12	68.8		
13	75.0	13	75.0	13	62.5		
14	68.8	14	81.2	14	71.9		
15	68.8	15	68.8	15	84.4		
16	87.5	16	75.0	16	87.5		
17	81.2	17	63.5	17	84.4		
18	65.6	18	65.6	18	81.2		
19	71.9	19	78.1	19	84.4		
20	68.8	20	90.7	20	78.1		
21	100.0			21	100.0		
22	96.9			22	90.7		
23	93.8			23	78.1		
24	78.1			24	78.1		
25	78.1			25	75.0		
26	71.9			26	75.0		
27	87.5			27	93.8		
28	59.3			28	78.1		
Mean	78.6		78.0		80.8		89.6

Item-scale intercorrelations. For the three subscales of the SOQ, n Independence, Classroom Climate, and Satisfaction, item scores were correlated with both factor and total subscale scores. The obtained correlations are reported in Tables 12 to 14. For all three subscales every item-factor and item-total subscale correlation lies within the 0.30 and 0.80 range recommended by Guilford (1965).

Item intercorrelations - Coefficient Alpha. Nunnally (1967) has described the reliability coefficient obtained from the intercorrelation of items as the ". . . most meaningful measure of reliability [p. 194]." The formula used to calculate the reliability coefficient is identical to that used to compute Coefficient Alpha (Nunnally, 1967, pp. 193-196).

$$r_{kk} = \frac{k(\bar{r}_{ij})}{1 + (k-1)\bar{r}_{ij}}$$

Where r_{kk} = the reliability coefficient,

$\bar{r}_{ij}$ = the average item intercorrelation,

k = the number of items on the test.

From the correlation matrices for n Independence, Classroom Climate, and Satisfaction subscales, the reliability coefficients for each were calculated for both Schools A and B (Table 15).

All of the estimates of reliability obtained for the subscales n Independence, Satisfaction, and Classroom Climate exceeded the 0.50 to 0.60 range prescribed by Nunnally (1967) as satisfactory ". . . for early stages of research on hypothesized measures of a construct [p. 226]."

Validity

The literature on test validity contains references to numerous types of validity. Mouly (1963) has defined validity as ". . . the

TABLE 12

ITEM-FACTOR AND ITEM-TOTAL SCALE INTERCORRELATIONS n INDEPENDENCE – SCHOOL *A*
(n = 428)

Item	Curriculum Inputs	Physical Movement	Workload Dimensions	Work Interactions	Total Need for Independence
6	.755				.689
7	.715				.619
8	.749				.688
9	.796				.695
10	.775				.660
11	.738				.672
14	.695				.650
1		.744			.596
2		.782			.584
3		.753			.580
4		.712			.611
12		.679			.622
15			.657		.545
18			.698		.565
19			.696		.605
20			.709		.589
22			.622		.545
5				.696	.508
13				.636	.576
16				.684	.576
17				.581	.361
21				.689	.503

TABLE 13

ITEM-FACTOR AND ITEM-TOTAL SCALE INTERCORRELATIONS
SATISFACTION - SCHOOL A

(n = 428)

Item	School Adult Relations	Progress in English	Peer Relations	Total Satisfaction
3	.826			.608
5	.787			.554
6	.673			.558
2		.637		.497
7		.828		.617
8		.730		.565
1			.798	.379
4			.822	.417

TABLE 14

ITEM-TOTAL SCALE INTERCORRELATIONS
CLASSROOM CLIMATE – Schools A, B

(n_A = 428; n_B = 305)

Item	School A	School B
1	.588	.674
2	.619	.670
3	.570	.511
4	.683	.704
5	.743	.802
6	.595	.687
7	.643	.720
8	.693	.669
9	.586	.590
10	.694	.738
11	.602	.708
12	.684	.741
13	.757	.810
14	.596	.564
15	.629	.684
16	.701	.787
17	.642	.773
18	.571	.617
19	.790	.805
20	.733	.716

TABLE 15

COEFFICIENTS OF RELIABILITY DERIVED FROM ITEM-SCALE
INTERCORRELATIONS - SCHOOLS A AND B

Subscale	School A	School B
Need for Independence	.910	.904
Satisfaction	.632	.677
Classroom Climate	.931	.935

extent to which an instrument measures what it purports to measure [p. 100]." To Kaplan (1964, p. 198) the validity of a measurement consists in what it is able to accomplish. Four major types of validity have been listed by Cronbach (1960, pp. 103-105) and Travers (1958, pp. 154-156): predictive, concurrent, content, and construct. These forms of validity have been defined by Cronbach (1960, pp. 103-120) as follows:

Predictive validity - the extent to which a test score predicts future performance.

Concurrent validity - the degree of agreement between the criterion score and a measure of the same criterion obtained from an established test.

Content validity - the degree of congruence between each item in a scale and the concept or behavior being studied.

Construct validity - the extent to which a test measures a single psychological quality.

A number of writers, Peak (1953, pp. 284-285) and Oppenheim (1966, p. 76) among them, have mentioned an additional type of validity, face validity. As defined by Cronbach (1960), face validity is what a test has when it looks good for a particular purpose. Face validity can be considered one aspect of content validity (Nunnally, 1967).

In factor analytic studies the factorial composition of measures contributes to all the major types of validity. Cronbach and Meehl (1955) have stated that the analysis of factors which determine the behavior under consideration is an important type of validity. Inductive inferences based on a pattern of correlations cannot be dismissed as "pure speculation [p. 286]." In the same vein, Kerlinger (1967, p. 455)

has stated that common variance, the variance an item shares with all other items, provides additional evidence of validity. The correlation between each item and its factor is seen by Nunnally (1967) as a form of construct validity which determines ". . . the internal statistical structure of a set of variables said to measure a construct [p. 101]."

Of these types of validity, content, construct, and factorial validity were considered appropriate for the purpose of scale development in this study.

Content Validity

Content validity, the representativeness of the sampling of content, inevitably rests on appeal to reason with respect to the adequacy with which important content has been sampled and the adequacy of the form in which the test items have been constructed (Nunnally, 1967, p. 82).

The item pool, from which the subscales of the SOQ were constructed, was derived mainly from two sources: the Classroom Dynamics Questionnaire (Thelen, 1967, pp. 212-213), and from the investigator's personal experience as a teacher and administrator. Attempts were made to increase content validity by interviewing students during the pilot study. The SOQ was also submitted to a panel of student judges, following which certain revisions were made in the wording of items.

Factorial Validity

Factorial validity, an aspect of construct validity, is shown in Table 16 as the percentage of the total variance accounted for by the items in each of the subscales.

TABLE 16

FACTORIAL VALIDITY FOR n INDEPENDENCE, CLASSROOM
CLIMATE, AND SATISFACTION SUBSCALES

Subscale	Percentage of Total Variance School A	School B
Need for Independence	52.48	51.32
Classroom Climate	59.97	65.27
Satisfaction	60.09	62.85

Construct Validity

Construct validity, the unidimensionality or pureness of a test, was investigated by obtaining correlations among measures of related variables in the domain of the construct, need for independence. This method, suggested by Cronbach and Meehl (1955), requires that the construct being studied correlate significantly, and as predicted, with other concepts considered to be parts of the domain of related observable variables.

Two attempts were made at construct validation, the first during the pilot study. The investigator hypothesized that a student's need for instrumental independence would correlate positively with his feeling of powerlessness and also with his general need for independence.

Forty students were selected from the 203 who participated in the pilot study, the 20 students who scored highest on n Independence, and the 20 who scored lowest on n Independence, as measured by the SOQ. A follow-up questionnaire was sent to these students during the summer. The questionnaire contained two subscales, Kolesar's Powerlessness Subscale (1967), and Vroom's Need for Independence Scale (1960). Thirty-seven students completed the second questionnaire, 19 of the 20 with high n Independence scores, and 18 of the 20 with low scores.

Pearson Product–Moment correlations were computed between scores on n Independence, powerlessness, and general need for independence (Table 17). A copy of the follow-up questionnaire has been placed in Appendix F.

Further construct validation was attempted during the study itself. In a third urban high school, the SOQ was administered to 97

TABLE 17

PRODUCT-MOMENT INTERCORRELATIONS
BETWEEN THREE VARIABLES

Variable	Vroom's Need for Independence	Need for Instrumental Independence	Powerlessness
Vroom's Need for Independence	1.000		
Need for Instrumental Independence	.416*	1.000	
Powerlessness	.414*	.379*	1.000

*p < .05

students in three English classes. In addition to the regular subscales, these students completed a modified version of Kolesar's Powerlessness Subscale and Rotter's Internal-External Control Scale (1966). Rotter's scale was designed to measure the degree to which an individual perceives that gratification follows from, or is contingent upon, his own behavior, as opposed to the degree he feels that gratification is controlled by forces outside himself (Rotter, 1966, p. 1). Significant, positive correlations were predicted between n Independence scores, Powerlessness scores, and External Control scores, in pairs.

External Control scores were found to correlate 0.24 with n Independence, while Powerlessness correlated 0.41 with n Independence. These correlations were significant at the .05 and .001 levels, respectively. Further analysis of the top and bottom 20% of the sample on n Independence showed that Powerlessness correlated 0.45 with n Independence, significant at the .001 level. The relationship between n Independence and External Control was in the predicted direction but was not significant. Copies of all scales used in validation are included in Appendix G.

The significant correlations reported in this section would indicate that the Need for Independence Subscale used in this study possessed a certain amount of construct validity. What the scale measured was related, and in the predicted direction, to certain other variables which conceivably formed part of the same domain.

Summary

In this chapter an explanation of the method of sample selection was presented. Data for the study were supplied by students from two

urban high schools. Students completed the Student Opinion Questionnaire, with its three subscales designed to measure need for independence, satisfaction, and classroom climate. The development of this instrument was described as well as the method of computing a student's need for independence.

The results of factor analysis of each of the subscales have been reported. The various statistical procedures employed in analyzing the data and testing the research hypotheses were outlined. The chapter concludes with a description of techniques which were used to establish the reliability and validity of the various subscales of the Student Opinion Questionnaire.

CHAPTER IV

DATA ANALYSIS AND DISCUSSION

Need for Independence in High School Students

As defined for the purpose of this study, need for independence

has been conceptualized as a function of three variables: perceived

independence, preferred independence, and intensity or importance.

Students were asked, in each of 22 classroom situations, how much

control they, as opposed to the teacher, perceived they had; how much

control they, as opposed to the teacher, would prefer; and how

important the desired level of control was to them.

The mean scores for the 428 students in School *A*, and the 305

students in School *B*, were calculated for all three variables   (Tables

18 and 19). The mean scores for the 22 items of each variable were

then plotted to give profiles of n Independence for students in Schools *A*

and *B*   (Figure 1).

As described earlier, the responses of students on both perceived

and preferred independence were based on a five-point scale. The

decision has been made (perceived independence), or should be made

(preferred independence):

1. Almost entirely by the teacher
2. Mostly by the teacher, but with the help of the student
3. About equally by the student and the teacher
4. Mostly by the student, but with the help of the teacher
5. Almost entirely by the student

Scores on perceived and preferred independence ranged from 1 to

5, with the higher score indicating greater student control over decisions.

TABLE 18

MEAN SCORES OF STUDENTS IN SCHOOL *A* ON PERCEIVED AND PREFERRED
INDEPENDENCE, IMPORTANCE OF DECISION, AND NEED FOR INDEPENDENCE

Item	Perceived Independence	Preferred Independence	Importance of Decision	Need for Independence
Changing seats	1.923	3.028	2.897	3.549
Going to washroom	2.708	3.815	3.755	4.463
Going to locker	1.762	2.792	3.002	3.322
Going to library	1.808	2.825	3.259	3.785
Speaking in class	2.481	3.075	3.893	2.572
Choice of text	1.208	2.161	3.780	4.220
Time spent on topic	1.700	2.514	3.687	3.388
Audiovisual materials	1.435	2.383	3.425	3.535
Topics studied	1.248	2.346	3.631	1.381
Learning activity	1.453	2.430	3.764	3.932
Appropriateness of individual activity	1.930	3.271	4.273	6.103
Working individually	2.402	3.423	3.886	4.236
Asking-receiving help	2.914	3.605	3.764	2.872
Topics discussed	2.140	2.860	3.867	3.035
Working partners	2.939	3.645	3.857	3.143
Settling arguments	2.350	2.808	3.897	2.058
Coming back for help	3.864	3.944	4.019	0.397
Topics for reports	2.717	3.535	3.893	3.372
Amount of homework	1.423	2.306	3.717	3.544
Essay topics	2.342	3.229	3.883	3.794
Discussion outcomes	2.645	3.196	3.881	2.381
Assignment deadlines	1.343	2.051	3.738	2.858
Grand Means	2.125	3.011	3.717	3.406

TABLE 19

MEAN SCORES OF STUDENTS IN SCHOOL *B* ON PERCEIVED AND PREFERRED
INDEPENDENCE, IMPORTANCE OF DECISION, AND NEED FOR INDEPENDENCE

Item	Perceived Independence	Preferred Independence	Importance of Decision	Need for Independence
Changing seats	2.561	3.466	2.869	2.853
Going to washroom	3.052	4.003	3.734	3.784
Going to locker	1.984	3.105	2.980	3.541
Going to library	1.931	2.987	3.161	3.630
Speaking in class	2.931	3.380	3.731	1.987
Choice of texts	1.243	2.380	3.833	4.875
Time spent on topic	1.652	2.646	3.649	3.902
Audiovisual materials	1.492	2.544	3.416	3.902
Topics studied	1.426	2.495	3.662	4.371
Group activities	1.557	2.587	3.679	4.148
Appropriateness of individual activity	2.285	3.426	4.108	5.003
Working individually	2.646	3.587	3.830	4.049
Asking-receiving help	3.318	3.898	3.567	2.544
Topics discussed	2.115	2.997	3.744	3.643
Working partners	2.872	3.718	3.738	3.577
Settling arguments	2.741	3.267	3.777	1.771
Coming back for help	4.180	4.157	4.030	-0.075
Topics for reports	2.590	3.567	3.754	3.990
Amount of homework	1.518	2.479	3.643	3.610
Essay topics	2.298	3.436	3.826	4.666
Discussion outcomes	2.849	3.374	3.702	2.184
Assignment deadlines	1.469	2.298	3.626	3.092
Grand Means	2.305	3.168	3.639	3.411
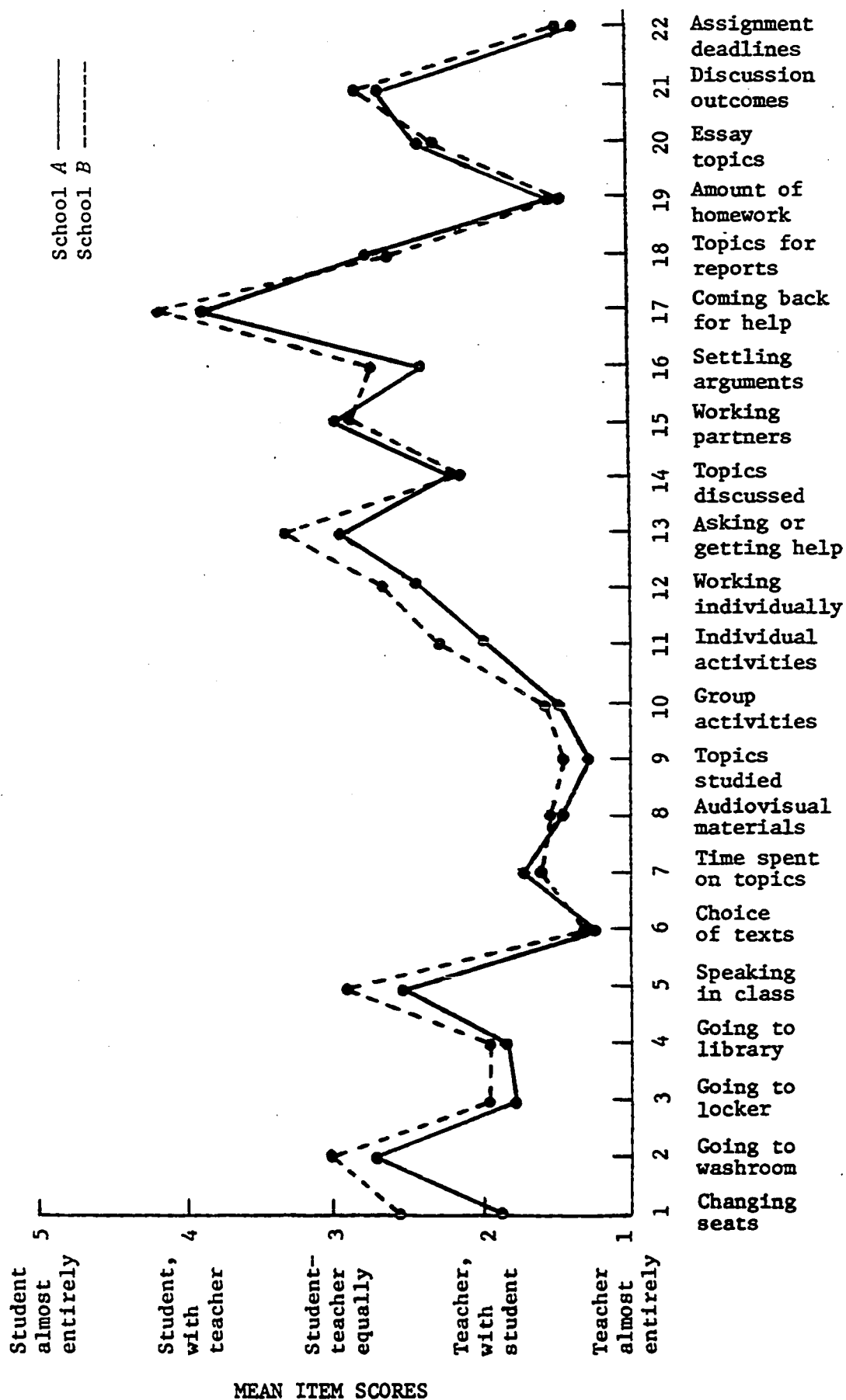
Figure 1. Perceived Independence Profiles of Schools A and B

To facilitate discussion of results, the mean scores on perceived and preferred independence were arbitrarily divided into three categories:

Student-oriented control – mean score from 3.5 to 5.0,

Shared student-teacher
control   – mean score from 2.5 to 3.49,

Teacher-oriented control – mean score from 1.0 to 2.49.

The profiles constructed from the mean scores on the three variables making up n Independence are presented in turn, along with a discussion of the findings.

Perceived Independence

Mean scores on perceived independence ranged from a low of 1.208 on choice of texts to a high of 3.864 on coming back for extra help, in School *A*. The range in School *B* was from 1.243 for choosing texts to 4.180 for coming back for extra help. The mean for all 22 items was 2.125 in School *A* and 2.305 for School *B* (Tables 18 and 19).

Figure 1 reveals the profiles of perceived independence in the 22 classroom situations, for Schools *A* and *B*. The students in School *A* perceived the locus of decision making to reside mainly with the teacher in 16 of the 22 situations. In only one case, Item 17, coming back for extra help, did the students feel that the decision was student-oriented. Students viewed the decisions in situations 2, 13, 15, 18, and 21, as being shared more or less equally by the student and the teacher.

The results for School *B* were strikingly similar to those of School *A*. The profiles were almost identical, the only differences being

that decisions in situations 1, 5, 12, and 16 were viewed in School *B* as being shared, instead of being teacher-oriented as in School *A.*

Preferred Independence

Tables 18 and 19 show that the extreme mean scores on preferred independence in Schools *A* and *B* respectively, were from 2.051 and 2.098 for assignment deadlines, to 3.944 and 4.157 on coming back for extra help. Mean preferred independence scores on all items were 3.011 for School *A* and 3.168 for School *B.*

In Figure 2 the profiles for preferred and perceived needs for School *A* have been compared. The pattern for preferred independence followed that of perceived independence, but always at a higher level. In other words, on the average, students in School *A* always desired more control over decisions than they already possessed. This situation was also found to exist in School *B* when the profiles for preferred and perceived independence were plotted and compared (Figure 3).

Further examination of the results indicated that in six cases: going to the washroom, going to the locker, asking or receiving help from another student, choosing work partners, and choosing topics for reports, the students in School *A* wanted decision making to shift from being shared to being student-oriented. Although students preferred to become more involved in decision-situations 6, 8, 9, 10, 19, and 22, they were prepared to allow the teacher to retain the greater burden for decision making.

The profile of preferred independence for School *B* (Figure 4) showed little change from that of School *A.* There were changes in

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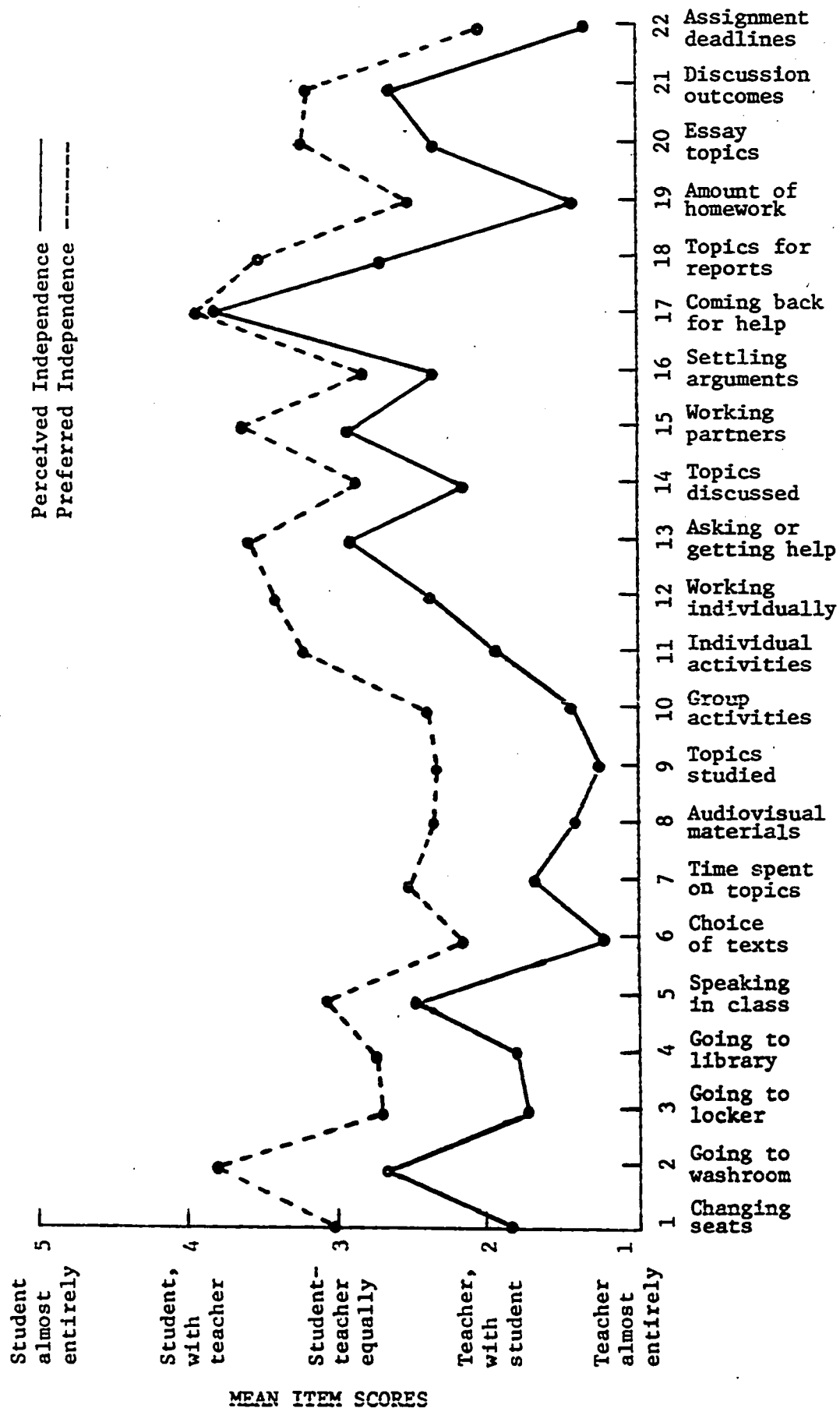
Figure 2. Perceived and Preferred Independence Profile of School A
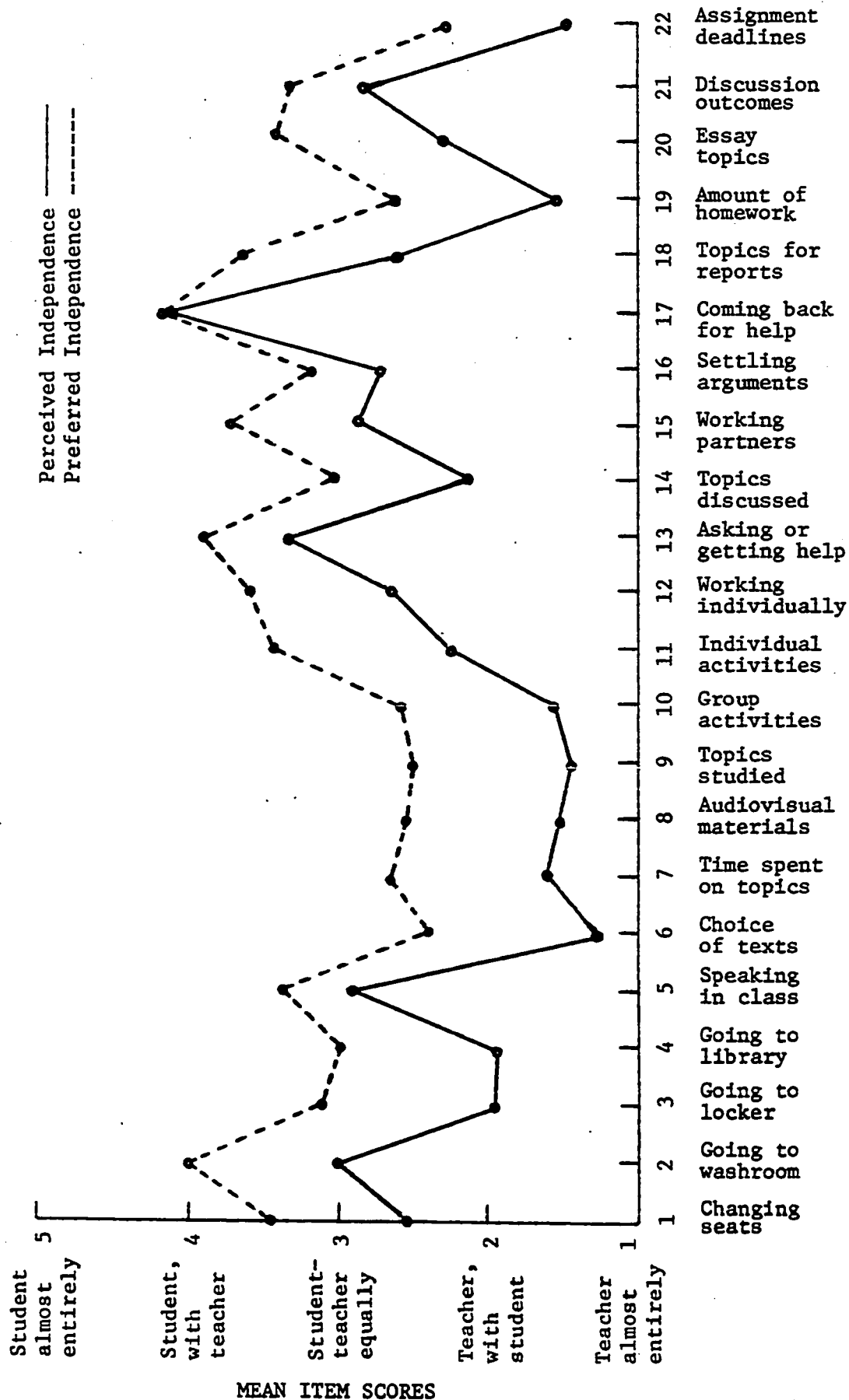
Figure 3. Perceived and Preferred Independence Profile of School *B*
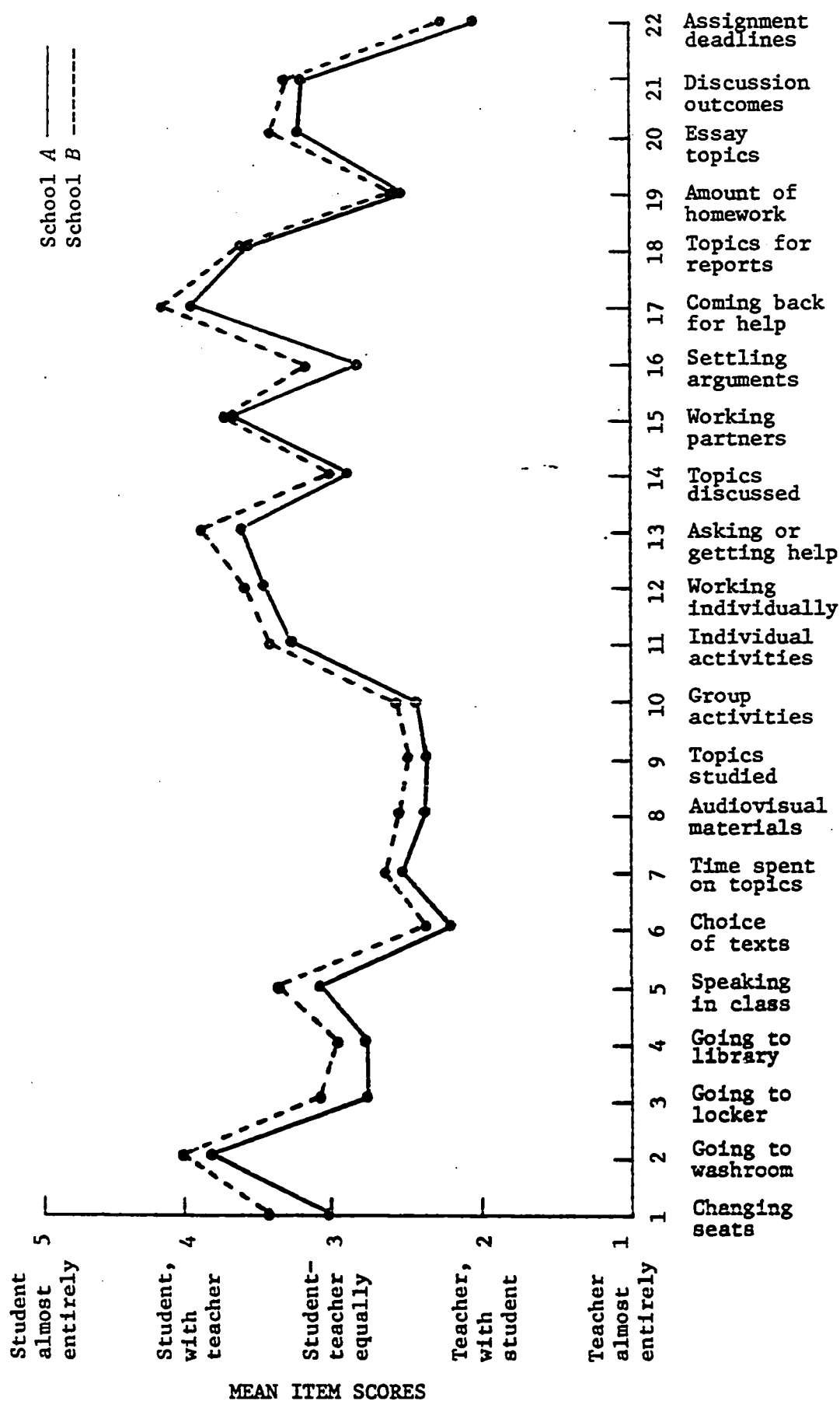
Figure 4. Preferred Independence Profiles of Schools *A* and *B*

category for a number of items. Several items, 12, 20, and 21, moved
into the student-oriented control category, while Item 3 shifted into
the shared-control category. Other changes included the movement of
Items 8, 9, and 10 to shared-control from their teacher-dominated status
in School A. One item, Number 7, was located in the shared-control
category in School A but in the teacher-oriented category in School B.

Despite the movement from category to category of 8 of the 22
items when School A was contrasted with School B, all of the changes
were relatively minor, occurring as a result of a slight change in mean
score. As in the case of perceived independence, the remarkable
similarity between the profiles on preferred independence for Schools
A and B is apparent in Figure 4.

Importance of the Decision

The importance attached by students to their preferred levels of
independence was measured on a five-point scale:

5. Very important
4. Quite important
3. Moderately important
2. Slightly important
1. Not important

Scores on the importance scale thus ranged from 1 to 5, with the
higher scores indicating a higher level of importance.

Mean scores for students in Schools A and B respectively, ranked
from 2.897 and 2.869 for changing seats, as least important, to 4.273
and 4.108 for choice of appropriate learning activities, as most
important. The mean levels of all items on importance of preferred
independence were 3.717 for School A and 3.639 for School B (Tables
15 and 16).

An inspection of Figure 5 indicates that the students in both schools have strongly congruent attitudes toward the importance of preferred levels of decision making. The profiles show that, on the average, students in both schools believed it to be quite important for them to have the level of control they preferred. Only three items, changing seats, going to the locker, and going to the library, were assigned a degree of importance less than 3.5. Even for these items, the decisions were considered by students to be moderately important.

Summary

From Table 20 the following general observations were made:

1. A positive discrepancy existed between preferred and perceived independence in both schools, that is, students in both schools perceived themselves to have less independence than they desired in classroom decision making. School *B* students tended to feel that they had a larger measure of control over learning activities in their English classrooms than did students in School *A*.

2. The pattern of discrepancies between preferred and perceived independence was remarkably stable from School *A* to School *B*, on an item-by-item basis (Figures 2 and 3).

In the main, students of both schools wanted to share more fully in the making of classroom decisions. Again, students in School *B* indicated a preference for a higher level of independence than did students in the other school.

3. Students in both schools considered their desired level of participation, in the 22 classroom situations selected for this study, to be quite important. However, School *A* students, whose perceived and
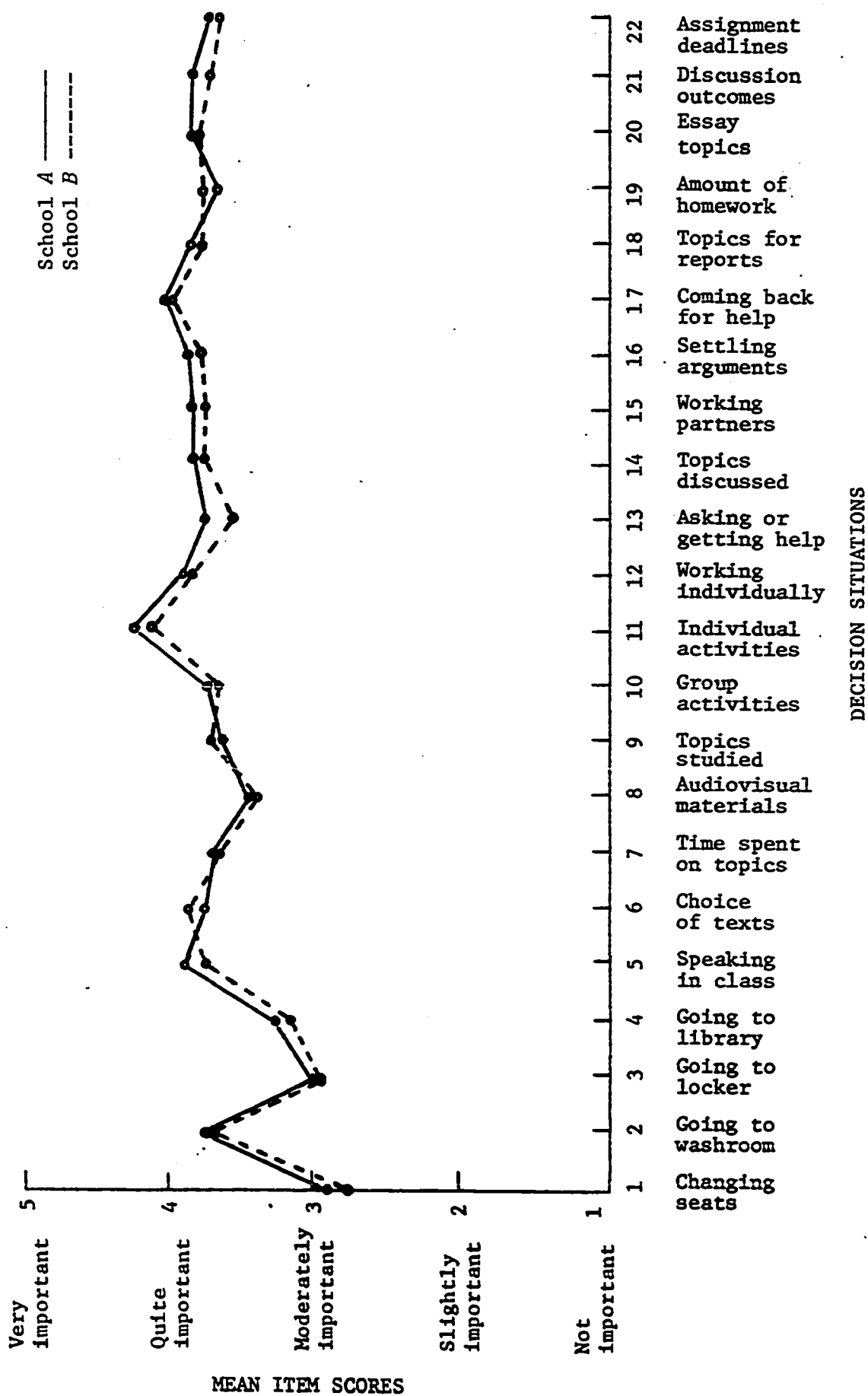
Figure 5. Importance of Decision Profiles of Schools *A* and *B*

TABLE 20

MEAN RAW SCORES PERCEIVED INDEPENDENCE, PREFERRED INDEPENDENCE, AND IMPORTANCE OF DECISION
BY FACTORS AND TOTAL NEED FOR INDEPENDENCE FOR SCHOOLS *A* AND *B*

Factors and Total Need for Independence	Independence Variables by School									
	Perceived A	Perceived B	Preferred A	Preferred B	Discrepancy A	Discrepancy B	Importance A	Importance B	Total Need for Independence A	Total Need for Independence B
Curriculum Inputs	1.588	1.681	2.609	2.725	1.021	1.044	3.867	3.727	3.95	3.89
Physical Movement	2.141	2.435	3.177	3.430	1.036	0.995	3.356	3.315	3.48	3.46
Workload Dimensions	2.154	2.149	2.953	3.100	0.799	0.951	3.818	3.717	3.05	3.23
Work Interactions	2.851	3.204	3.326	3.795	0.475	0.491	3.891	3.761	1.85	1.85
Total Need for Independence	8.734	9.469	12.045	12.734	3.301	3.481	14.932	14.520	12.33	12.47
Mean Raw Scores	2.183	2.367	3.011	3.184	0.825	0.870	3.743	3.630	3.09	3.16

preferred levels of independence were somewhat lower than students of
School *B*, generally attached more importance to their desired level of
independence than did School *B* students.

4. When the patterns for the criterion variable itself, need for
independence, were plotted, using factor scores, the profiles for
Schools *A* and *B* are seen to be very similar (Figure 6). The greatest
need perceived by students in both schools was for more control over
decisions relating to the choice of appropriate learning activities for
individual students.

Students appeared to have little need for more control over
coming back for extra help. It would seem they already had as much
independence in this matter as they wished.

5. When the profiles of the four dimensions and total
n Independence, for Schools *A* and *B*, were plotted using factor scores
in place of raw scores, the salient feature was the remarkable similarity
between the patterns of the two schools (Figure 7). The greatest
need disclosed by students was for control over curriculum matters,
with the need-strengths of Physical Movement, Workload Dimensions, and
Work Interactions following in that order (Table 21).

Need for Independence and Student Satisfaction

Sub-problem 1

The first sub-problem was to determine whether or not there was a
significant relationship between a student's perceived need for independence
and his perceived satisfaction.

Hypothesis 1. A negative relationship exists between a student's
need for independence and his perceived satisfaction level.
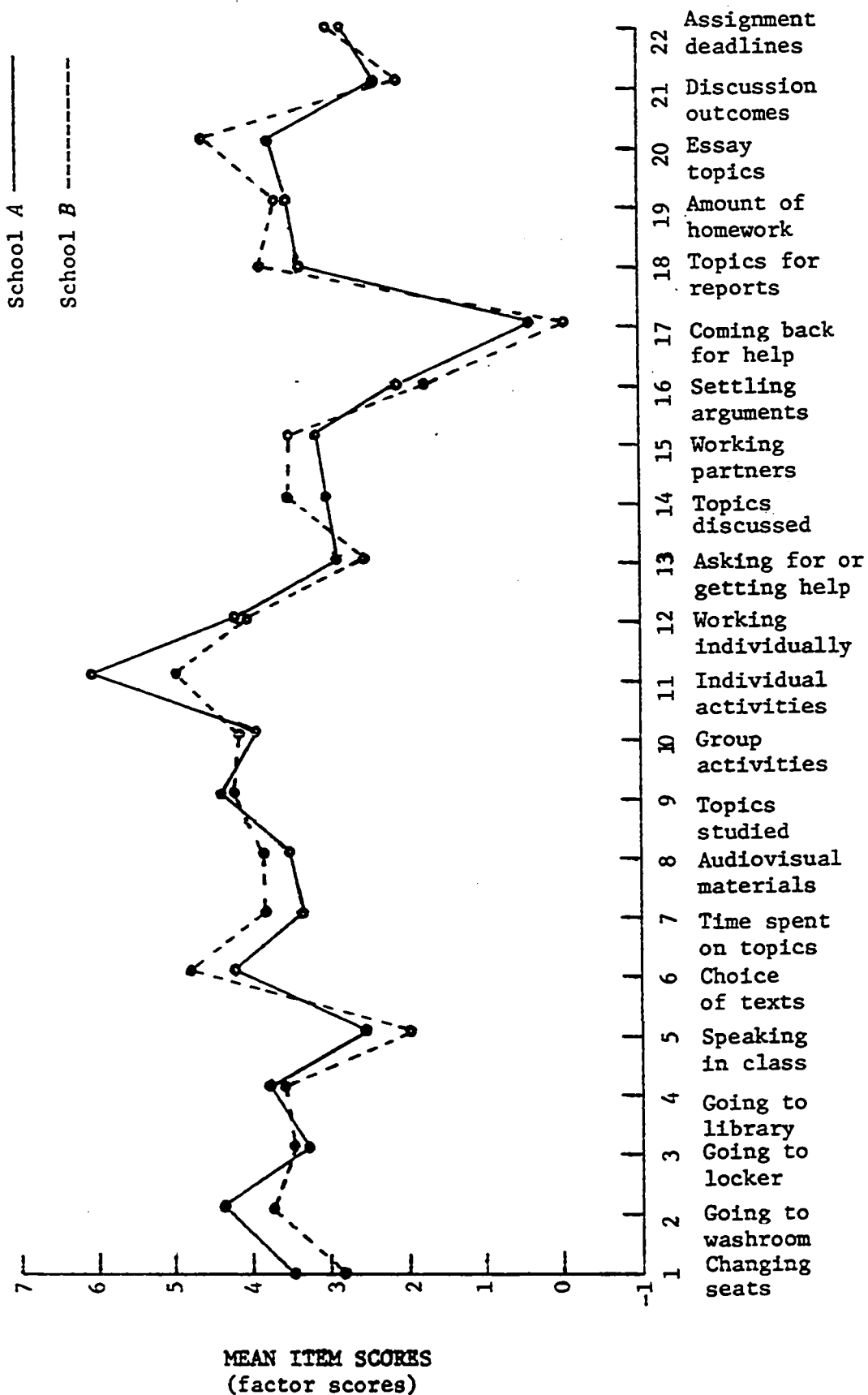
Figure 6. Need for Independence Profiles of Schools A and B
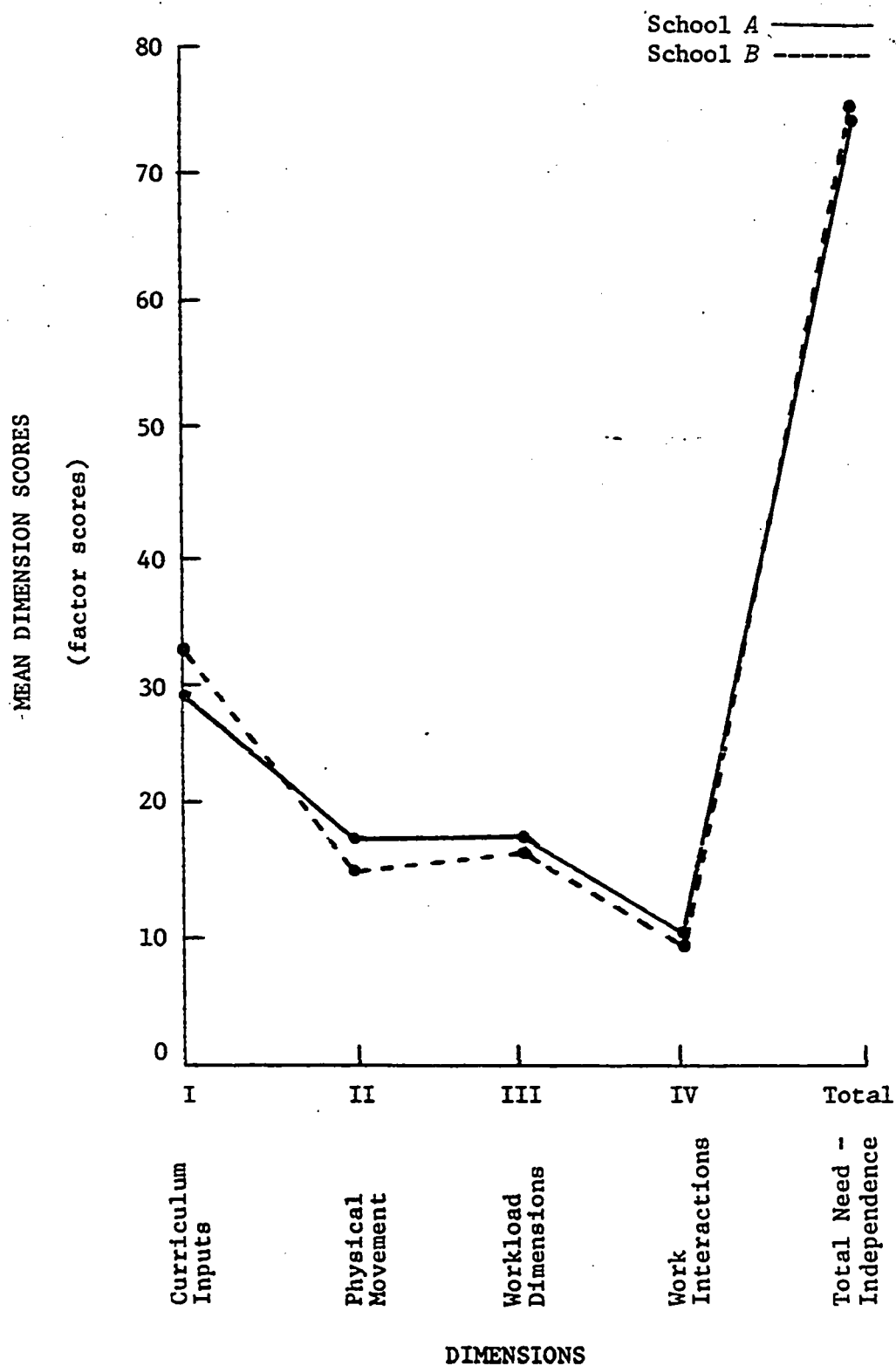
Figure 7. Need for Independence Profiles of Schools *A* and *B*

TABLE 21

MEAN FACTOR SCORES FOUR DIMENSIONS AND TOTAL NEED FOR INDEPENDENCE - SCHOOLS A AND B

School	Curriculum Inputs	Physical Movement	Workload Dimensions	Work Interactions	Total Need for Independence
A	28.738	17.692	17.659	10.851	74.939
B	32.148	15.793	17.102	10.000	75.043

Two complementary statistical procedures, Pearson Product-Moment correlations and canonical correlations, were used to test this hypothesis. Data from School *A* only were used in these analyses.

Findings. The first analysis of this relationship, by Pearson Product-Moment correlations, disclosed that 16 of 20 possible correlations were negative, that is, in the predicted direction. Seven of the relationships were significant at .05 level (Table 22).

The significant correlations were as follows:

1. Control over Curriculum Inputs correlated -.13 with total satisfaction, significant at .01 level.

2. Control over Physical Movement correlated -.09 with satisfaction with school-adult relations, significant at .05 level.

3. Control over Work Interactions correlated -.18 with satisfaction with peer relations, and -.18 with total satisfaction, both correlations significant at .001 level.

4. Total need for independence correlated -.14 with satisfaction with peer relations, -.14 with satisfaction with school-adult relations, and -.16 with total satisfaction. The first two correlations were significant at .01 level and the third at .001 level.

Hypothesis 1 received limited support.

Discussion 1. The absence of high correlations between n Independence, on each dimension and in total, and satisfaction, on each dimension and in total, indicates that need for independence is of limited usefulness in predicting student satisfaction. Nonetheless, with 16 of 20 correlations negative, there is an association between these two sets of variables which accounts for about 5% of the total variance in satisfaction.

TABLE 22

PEARSON PRODUCT-MOMENT INTERCORRELATIONS n
INDEPENDENCE AND SATISFACTION - SCHOOL *A*

(n = 428)

| Independence | Satisfaction Factor | | | |
	School—adult Relations	Progress in English	Peer Relations	Total Satisfaction
Control over Curriculum Inputs	-.08	-.06	-.07	-.13**
Control over Physical Movement	.09	-.09*	.03	.01
Control over Workload Dimensions	-.03	.02	-.06	-.04
Control over Work Interactions	-.07	-.05	-.18***	-.18***
Total Need for Independence	-.14**	-.01	-.14**	-.16**

*p < .05
**p < .01
***p < .001

The low correlations were to be expected in view of the fact that, in addition to n Independence, there are other self-esteem needs such as achievement, confidence, and strength, operating within the student at the same time. Presumably, the extent to which these other needs are met also contributes to the affective orientation of the student. The need for independence is but one of many adolescent needs which must be met if students are to feel satisfied with their classroom experiences.

The second analysis, using canonical correlations, was performed to reveal the degree of confidence which could be placed in the over-all hypothesis.

Chi-square was used to test the significance of the canonical correlation:

$$H_o \; : \; \chi^2 < 26.22$$

$$H_1 \; : \; \chi^2 > 26.22$$

The results of this analysis have been reported in Table 23.

Discussion 2. The second analysis confirmed the earlier finding of a significant but low correlation between need for independence and satisfaction. The null hypothesis was rejected since $\chi^2 > 26.22$. Therefore, a low score on satisfaction appeared to be associated with a high score on need for independence.

Need for Independence and Classroom Climate

Sub-problem 2

This sub-problem was to determine whether or not a student's need for independence was significantly related to his rating of his classroom climate.

TABLE 23

CANONICAL CORRELATIONS INDEPENDENCE AND SATISFACTION TEST
OF SUCCESSIVE LATENT ROOTS

Number of Roots Removed	Largest Latent Root Remaining	Corresponding Canonical R	Lambda	χ^2	df	P
0	0.056	0.237	0.921	33.76	12	<.001
1	0.017	0.132		9.21	6	>.05
2	0.004	0.063		1.70	2	>.05

Hypothesis 2. A negative relationship exists between a student's need for independence and his rating of the climate in the English classroom.

Pearson Product-Moment correlations were used to test this hypothesis.

Findings. All five correlations between the four dimensions and total n Independence, and classroom climate were negative and in the predicted direction. Three of the five correlations: between Workload Dimensions and classroom climate; between Work Interactions and classroom climate; and between total n Independence and classroom climate, were significant at the .001 level. The correlation between Curriculum Inputs and classroom climate was significant at .05 level. The correlation between Physical Movement and classroom climate, although not significant, was in the predicted direction (Table 24).

Hypothesis 2 received limited support.

Discussion. A student's rating of his classroom climate was associated with the extent to which his need for independence was being met. The relationship was a negative one, that is, the higher a student's score on need for independence, the less positive was his rating of the climate of his English classroom.

Of the four dimensions of n Independence, the best predictors of classroom climate were Workload Dimensions and Work Interactions. In neither case did the factor account for more than 5% of the total variance in classroom climate score.

Once more, the existence of other unmet needs in students tends to reduce the size of the correlations between n Independence and

TABLE 24

PEARSON PRODUCT-MOMENT INTERCORRELATIONS
n INDEPENDENCE AND CLASSROOM CLIMATE
SCHOOL *A*

Independence	Classroom Climate Score
Control over Curriculum Inputs	$-.10*$
Control over Physical Movement	$-.04$
Control over Workload Dimensions	$-.19***$
Control over Work Interactions	$-.21***$
Total Need for Independence	$-.27***$

$*p < .05$
$***p < .001$

classroom climate. Need for independence is only one of many needs which must be satisfied if the student is to rate his English classroom climate positively.

Need for Independence and School Climate

Sub-problem 3

This sub-problem was to determine whether or not students in an open-climate school differ significantly from students in a closed-climate school on each dimension and in total need for independence in the English classroom.

Hypothesis 3. There is no significant difference between the mean score on each dimension, and on total need for independence, for students in an open-climate school as compared to students in a closed-climate school.

This hypothesis was tested using one-way analysis of variance of mean scores for students in Schools A and B.

$$H_o : \mu_A = \mu_B, \text{ reject if } p < .05.$$

Findings. Mean scores on each dimension and on total need for independence were calculated separately for students in Schools A and B (Table 21). When the mean scores for the closed-climate School A were compared with those of students in the open-climate School B, each of the probabilities exceeded .05. Consequently no evidence was found to reject Hypothesis 3 (Table 25).

Discussion. The findings in this section supported earlier research by Willower (1967) and Jones (1969) that a school's climate is more closely related to the pupil control ideology of the teacher than

TABLE 25

ANALYSIS OF VARIANCE OF STUDENT SCORES
ON n INDEPENDENCE AND SCHOOL CLIMATE
SCHOOLS *A* AND *B*

Variable	Source	Mean Square	df	F	p
Control over Curriculum Inputs	Groups	2070.13	1	2.14	0.144
	Error	967.79	731		
Control over Physical Movement	Groups	641.69	1	1.59	0.208
	Error	404.37	731		
Control over Workload Dimensions	Groups	55.25	1	0.16	0.689
	Error	344.70	731		
Control over Work Interactions	Groups	128.81	1	0.40	0.527
	Error	321.41	731		
Total Need for Independence	Groups	2.00	1	0.00	0.985
	Error	5560.28	731		

it is to the PCI of the principal. Failure to reject the null hypothesis
in this case raises doubts about the effectiveness of a principal's
actions in "opening up" the climate of a school. It is possible that
this can be accomplished only with active teacher support.

Other Correlates of Need for Independence

Sub-problem 4 was to determine whether or not each student's
need for independence was significantly related to such personal and
situational variables as: sex, grade, age, school program, period of
school attendance, average achievement in all subjects, English mark,
aspiration level in English, absenteeism, future plans, socioeconomic
status, English course, and teacher.

Hypothesis 4 states that there is no significant difference in
student needs for independence when students are grouped by: sex,
grade, age, school program, period of school attendance, average
achievement in all subjects, English mark, aspiration level in English,
absenteeism, future plans, socioeconomic status, English course, and
teacher.

This hypothesis was first tested by subjecting the data to
multivariate analysis to determine whether or not the four factors of
need for independence, acting in combination, were significantly
related to each predictor.

$$H_o : \mu_1 = \mu_2 = \ldots, \text{ reject if } p < .05.$$

Where there was evidence to reject the null hypothesis, additional
analyses, involving each factor and each predictor, were undertaken with
single-factor analysis of variance and multiple comparison of group means.

The results of the various tests of Hypothesis 4 have been divided into three parts, each dealing with one of the above methods of analysis.

Multivariate Analysis

The results of the preliminary analysis of variance, as reported in Table 26, show that for five of the predictors, sex, grade, period of attendance, socioeconomic status, and aspiration level, the probabilities exceeded .05. Thus, the relationship between the combined factors of need for independence and each of these predictors was not significant.

Each of the remaining predictors, teacher, English course, program, future plans, age, average mark, English mark, and absenteeism interacted significantly with the cluster of n Independence factors. Consequently, for these predictors the null hypothesis was rejected.

In the first analysis, Hypothesis 4 received partial support. Taken as a group, there was no significant relationship between the factors of need for independence and the following personal variables: sex, grade, period of attendance, socioeconomic status, and level of aspiration in English. The hypothesis that student scores on need for independence were not significantly related to the teacher, English course, school program, future plans, age, English mark, average mark in all subjects, and absenteeism, was rejected.

The rejection of the null hypothesis for these predictors led to a search for alternate, directional hypotheses, using single-factor analysis of variance.

Single-factor Analysis of Variance (one-way).

Each of the factors and total n Independence was analyzed separately

TABLE 26

ANALYSIS OF VARIANCE – GROUP EFFECT FOUR FACTORS
n INDEPENDENCE AND VARIOUS PREDICTOR VARIABLES

Predictor	df1	df2	F	p	Lambda
Teacher	36	1556.9	2.93	0.00	0.782
English Course	20	1390.6	2.58	0.00	0.886
Program	8	844.0	3.99	0.00	0.928
Future Plans	12	1114.2	2.56	0.00	0.931
Age	8	844.0	3.46	0.00	0.938
English Mark	12	1114.2	2.25	0.01	0.939
Average Mark	12	1114.2	2.08	0.02	0.943
Absenteeism	8	844.0	1.95	0.05	0.964
Grade	8	844.0	1.63	0.11	0.970
Socioeconomic Status	16	1283.8	1.43	0.12	0.948
Period of Attendance	8	844.0	1.23	0.28	0.977
Sex	4	423.0	1.05	0.38	0.990
Aspiration Level	8	844.0	0.62	0.77	0.988

with each of the 13 predictors to locate significant relationships. The results of the second analysis were as follows:

Factor I, Control over Curriculum Inputs, was found to be significantly related to teacher, grade, age, school program, English mark, absenteeism, socioeconomic status, and English course (Table 27).

Factor II, Control over Physical Movement, was not related significantly to any of the predictors. Age and sex were the variables which most closely approached the criterion level (Table 28).

Factor III, Control over Workload Dimensions, was related significantly to teacher and English course (Table 29).

Factor IV, Control over Work Interactions, was significantly related to age, school program, average mark (Table 30).

Total need for independence was found to be significantly related to teacher, school program, average mark, English mark, and English course (Table 31).

Comparison of Group Means

Significant relationships were further tested, using the Scheffé comparison of group means. Grouping methods, which took advantage of natural divisions, were employed to categorize the sample separately for each predictor. In general, the number of categories was restricted to ensure approximate equality of cell size. The mean scores for groups for each of the predictors can be found in Appendix H.

Teacher. Significant differences were found between students of Teachers 2 and 10, on Curriculum Inputs. Students of Teacher 2 scored higher on this dimension of n Independence than did those of Teacher 10 (Appendix H - Table H).

TABLE 27

ANALYSIS OF VARIANCE OF STUDENT SCORES ON FACTOR I
n INDEPENDENCE AND VARIOUS PREDICTOR VARIABLES

Predictor	Source	Mean Square	df	F	p
Teacher	Groups	283.44	9	2.94	0.00
	Error	96.29	418		
Sex	Groups	51.00	1	0.51	0.48
	Error	100.45	426		
Grade	Groups	488.50	2	4.96	0.01
	Error	98.48	425		
Age	Groups	479.50	2	4.87	0.01
	Error	98.54	425		
School Program	Groups	715.00	2	7.34	0.00
	Error	97.43	425		
Attendance	Groups	205.50	2	2.06	0.13
	Error	99.80	425		
Average Mark	Groups	366.33	3	3.72	0.01[a]
	Error	98.36	424		
English Mark	Groups	407.60	3	4.16[b]	0.01
	Error	98.11	424		
Aspiration Level	Groups	31.00	2	0.31	0.74
	Error	100.62	425		
Absenteeism	Groups	440.50	2	4.46	0.01
	Error	98.97	425		
Future Plans	Groups	543.50	2	4.46	0.01
	Error	100.76	425		
Socioeconomic Status	Groups	343.75	4	3.51	0.01
	Error	97.95	423		
English Course	Groups	410.20	5	4.25	0.00
	Error	96.59	422		

a - homogeneity of variance test not met - $p < .05$.
b - although this F-ratio was significant, the Scheffé test did not
   provide statistics achieving significance.

TABLE 28

ANALYSIS OF VARIANCE OF STUDENT SCORES ON FACTOR II
n INDEPENDENCE AND VARIOUS PREDICTOR VARIABLES

Predictor	Source	Mean Square	df	F	p
Teacher	Groups	114.67	9	1.15	0.32
	Error	99.92	418		
Sex	Groups	252.00	1	2.52	0.11
	Error	99.97	426		
Grade	Groups	54.00	2	0.54	0.58
	Error	100.51	425		
Age	Groups	191.00	2	1.91	0.15
	Error	99.89	425		
School Program	Groups	109.00	2	1.09	0.34
	Error	100.27	425		
Attendance	Groups	63.50	2	0.63	0.53
	Error	100.47	425		
Average Mark	Groups	16.33	3	0.16	0.92
	Error	101.87	424		
English Mark	Groups	64.00	3	0.64	0.59
	Error	100.53	424		
Aspiration Level	Groups	73.00	2	0.73	0.48
	Error	100.43	425		
Absenteeism	Groups	38.50	2	0.38	0.68
	Error	100.59	425		
Future Plans	Groups	20.97	2	0.20	0.82
	Error	103.57	425		
Socioeconomic Status	Groups	89.50	4	0.89	0.47
	Error	100.35	423		
English Course	Groups	93.80	5	0.93	0.46
	Error	100.35	422		

TABLE 29

ANALYSIS OF VARIANCE OF STUDENT SCORES ON FACTOR III
n INDEPENDENCE AND VARIOUS PREDICTOR VARIABLES

Predictor	Source	Mean Square	df	F	p
Teacher	Groups	483.56	9	5.26	0.00
	Error	91.98	418		
Sex	Groups	96.00	1	0.96	0.39
	Error	100.33	426		
Grade	Groups	30.00	2	0.76	0.47
	Error	100.41	425		
Age	Groups	88.00	2	0.88	0.42
	Error	100.36	425		
School Program	Groups	225.50	2	2.26	0.11
	Error	99.72	425		
Attendance	Groups	92.50	2	0.92	0.40
	Error	100.32	425		
Average Mark	Groups	59.33	3	0.59	0.62
	Error	100.57	424		
English Mark	Groups	100.67	3	1.06	0.36
	Error	100.22	424		
Aspiration Level	Groups	131.50	2	1.31	0.27
	Error	100.15	425		
Absenteeism	Groups	258.50	2	2.60	0.08
	Error	99.55	425		
Future Plans	Groups	156.03	2	1.60	0.20
	Error	97.35	425		
Socioeconomic Status	Groups	10.50	4	0.10	0.98
	Error	101.10	423		
English Course	Groups	308.40	5	3.15	0.01
	Error	97.79	422		

TABLE 30

ANALYSIS OF VARIANCE OF STUDENT SCORES ON FACTOR IV
n INDEPENDENCE AND VARIOUS PREDICTOR VARIABLES

Predictor	Source	Mean Square	df	F	p
Teacher	Groups	238.67	9	2.45	0.01[a]
	Error	97.25	418		
Sex	Groups	24.00	1	0.24	0.62
	Error	100.51	426		
Grade	Groups	76.00	2	0.76	0.47
	Error	100.41	425		
Age	Groups	598.00	2	6.10	0.00
	Error	97.98	425		
School Program	Groups	504.00	2	5.12	0.01
	Error	98.42	425		
Attendance	Groups	125.50	2	1.25	0.29
	Error	100.18	425		
Average Mark	Groups	347.33	3	3.52	0.02
	Error	98.54	424		
English Mark	Groups	199.67	3	2.01	0.11
	Error	99.57	424		
Aspiration Level	Groups	12.00	2	0.12	0.89
	Error	100.72	425		
Absenteeism	Groups	37.50	2	0.37	0.69
	Error	100.60	425		
Future Plans	Groups	242.91	2	2.58	0.08
	Error	94.22	425		
Socioeconomic Status	Groups	122.00	4	1.22	0.30
	Error	100.04	423		
English Course	Groups	199.20	5	2.01	0.08
	Error	99.10	422		

a - Homogeneity of variance test not met - $p < .05$.

TABLE 31

ANALYSIS OF VARIANCE OF STUDENT SCORES ON TOTAL
n INDEPENDENCE AND VARIOUS PREDICTOR VARIABLES

Predictor	Source	Mean Square	df	F	p
Teacher	Groups	1504.55	9	3.98	0.00
	Error	377.49	418		
Sex	Groups	32.00	1	0.08	0.78
	Error	402.22	426		
Grade	Groups	104.77	2	0.26	0.77
	Error	402.71	425		
Age	Groups	312.00	2	0.78	0.46
	Error	401.73	425		
School Program	Groups	1904.00	2	4.83	0.01
	Error	394.32	425		
Attendance	Groups	152.00	2	0.38	0.69
	Error	400.52	425		
Average Mark	Groups	1429.33	3	3.63	0.01
	Error	394.08	424		
English Mark	Groups	2176.00	3	5.60	0.00
	Error	388.79	424		
Aspiration Level	Groups	352.00	2	0.88	0.42
	Error	401.54	425		
Absenteeism	Groups	752.00	2	1.88	0.15
	Error	399.70	425		
Future Plans	Groups	1017.00	2	2.68	0.07
	Error	379.83	425		
Socioeconomic Status	Groups	707.00	4	1.78	0.13
	Error	398.45	423		
English Course	Groups	1353.60	5	3.47	0.00
	Error	389.95	422		

Students of Teacher 2 had a higher mean score on Factor III, Workload Dimensions, than did students of Teacher 1. Similarly, on this factor, student scores for Teacher 4 were significantly above those of Teachers 1 and 3 (Appendix H - Table H).

On total n Independence, students of Teacher 1 and 2 were found to differ significantly, with students of Teacher 2 having the higher scores (Appendix H - Table H).

Unfortunately, the design of this study was such that no inferences could be made concerning these significant differences between mean scores of groups taught by different teachers. Attributing the differences solely to the fact that the groups had different teachers would have ignored the simultaneous operation of other important variables such as English course, program, and grade. On the basis of the statistical evidence available, it was felt that the formulation of a research proposition was not warranted.

Sex. No significant differences on n Independence scores for boys and girls were found. This supported the results of the earlier analysis and provided additional support for Hypothesis 4 as it pertains to the sex variable. The absence of a significant difference between sexes on n Independence scores was at variance with the findings of Komarovsky (1960, p. 689) that females are more dependent and less able to make decisions than males. On the other hand, the results were in keeping with the discovery by Friesen (1969, p. 52) that female aspirations for higher education were similar to those of male high school students. Conceivably, female-male role differences are becoming more diffused (Appendix H - Table I).

Grade. The Scheffé test revealed that grade 12 students had significantly higher scores on the dimension of Control over Curriculum Inputs, on the average, than did students in grade 10 (Appendix H - Table J). To the extent that grade and age are highly correlated, a finding of this nature might suggest that grade 12 students, at a later stage of adolescence than the grade 10's, experienced a greater need for control over this aspect of their life-space in preparation for the assumption of adult roles (Muuss, 1964, pp. 101-102).

Proposition 1: a student's need for independence on the dimension of Curriculum Inputs is significantly related to his grade. The higher the grade, the greater is the student's need for Control over Curriculum Inputs.

Age. Significant differences were discovered between 14-year-old students and those in the 17 year and older category on Control over Curriculum Inputs, with the latter registering higher mean scores (Appendix H - Table K). This finding tends to complement Proposition 1. On Control over Work Interactions dimension of n Independence, a significant difference was also found between these two groups, but this time the direction was reversed. Younger students perceived lower need-fulfilment than did the two older groups whose needs were roughly equivalent (Appendix H - Table K).

A possible explanation for the second finding is that the 14-year-olds had recently attended junior high schools where, as senior students, they may have enjoyed privileged status. Thus, they may have expected more freedom to be extended to them in the high school. When these expectations were not fully realized, they may have experienced a greater

need in the dimension of Control over Work Interactions than in the other

dimensions of n Independence. Willower and Jones (1967) have pointed out

that teachers in junior high schools have a strong custodial pupil

control ideology. Consequently, the 14-year-olds, in grade 10, would be

unlikely to find more teacher control over their physical movements, but

rather less than they had encountered in the junior high. If, as middle

adolescents, they were becoming more opinionated and assertive, they

would tend to find less acceptance of their views by teachers in the

subject-centered high school classroom.

Proposition 2: a student's need for independence on the dimension

of Control over Curriculum Inputs is significantly related to his age.

The older the student the greater is his need to participate in decisions

relating to curriculum.

Proposition 3: a student's need for independence on the Work

Interactions dimension is negatively related to his age. The younger

the student, the higher is his perceived need to participate in class

discussion and to have his opinions heard.

Program. Three significant correlations were found when Scheffé

comparisons were made. Business education students scored lower than

matriculation students on Control over Curriculum Inputs, Control over

Work Interactions, and in total n Independence (Appendix H – Table L).

One interpretation of this consistent finding might be that the

business education program is immediate-goal oriented. The courses of

study are practical and relevant to the needs of a student whose object

is to enter the labor market with a saleable skill. Students are not as

likely to challenge teacher decisions in a highly effective program as

they are in matriculation, where the primary purpose of the program is not job placement but university entrance.

English course content for matriculation students tends to concentrate on a study of the various forms of literature: the novel, poetry, and the short story. Teacher decisions about matters of literary style are more open to challenge than are those about the correct style of a business letter.

A higher level of academic ability on the part of matriculation students may be a contributing factor to their higher need for independence. Further investigation of this problem could well include refined statistical procedures which permit variables such as academic ability to be controlled.

Proposition 4: a student's need for Control over Curriculum Inputs, Control over Work Interactions, and his total need for independence are significantly related to his school program. Matriculation students tend to have a higher need on both dimensions, and in total, than students of business education.

Average achievement in all subjects. The Scheffé comparison of group means showed that students with academic averages exceeding 70% had a significantly higher need for Control over Work Interactions and a higher total need for independence than students whose averages were below 60% (Appendix H - Table M). If higher academic achievement is equated with higher n Achievement, these results are consistent with the experimental findings of Krebs (1958) and Mehrabian (1968) that the needs for achievement and independence were positively correlated.

High achievers may want a larger share in classroom decision making because their previous academic success has given them confidence in their own ability to make sound decisions. Low achievers would tend to rely more on teachers for decisions about coming in for extra help or getting assistance from other students. Also, low-average students would tend to be less certain of their expertness in judging the outcomes of classroom discussions.

Proposition 5: a student's scores on the Work Interactions dimension and on total need for independence are significantly related to his average achievement in all subjects. The higher a student's average achievement level, the higher is his need for Control over Work Interactions and his total need for independence.

English mark. Analysis of difference between group means revealed that high achievers in English scored significantly higher on total need for independence than did students whose English mark was below 60%. This finding was similar to the previous one regarding average achievement. In this case the differences were accentuated, which would mean that English mark was a better predictor of need for independence than was a student's average mark (Appendix H - Table N).

Proposition 6: a student's score on total need for independence is significantly related to his mark in English. The higher his mark in English, the greater is his total need for independence.

Absenteeism. Absenteeism was measured by asking each student how many English classes he had "skipped" during the term. Students who had skipped only one or two classes were found to have significantly higher scores on n Independence in the Curriculum Inputs dimension than either

students who never skipped a class, or students who had skipped three or more classes (Appendix H - Table O). The relationship between these two variables appeared to be curvilinear and thus outside the scope of the statistical design of this study. Further research should be undertaken to ascertain the underlying structure of the relationship between absenteeism and independence.

Future plans. The need for independence, on any dimension or in total, was not found to be significantly related to the future plans of students. The differences, however, approached significance. A rather consistent pattern emerged, with students who planned to attend university showing a higher need for independence than those who intended to go to a junior college or technical institute. The latter, in turn, scored higher as a group than students who had indicated they would graduate from school and then find employment (Appendix H - Table P).

Length of school attendance. A matrix of intercorrelations between period of school attendance and the four factors and total n Independence produced no significant relationships. No consistent patterns were discernible (Appendix H - Table Q). This analysis supported Hypothesis 4 as it applied to length of school attendance.

Aspiration level in English. A measure of a student's aspiration level was obtained by asking him how high a mark he thought he would have gotten in English if he had done his best. Three response categories were chosen: about the same mark to 5% higher, 6 to 10% higher, and 11% or more higher. No consistent patterns or significant relationships were found between categories (Appendix H - Table R). These findings gave support for Hypothesis 4 as it pertained to aspiration level in English.

Socioeconomic status. Each student was assigned a socioeconomic status score which was a composite index of: father's occupation, father's education, and mother's education (Blishen, 1958, p. 523; Turner, 1964, pp. 245-251). Five categories were created from high to low socioeconomic status. Only one significant difference between groups was found. Mean score on Control over Curriculum Inputs for students in the below-average socioeconomic category was found to be significantly lower than the mean score for high socioeconomic status students (Appendix H - Table S). However, the low group mean score was higher than that of the below-average group, but not significantly different from the high group.

The relationship between Curriculum Inputs and socioeconomic status appeared to be curvilinear and, therefore, beyond the scope of this analysis. One clear pattern emerged from the scores on total n Independence: there was a consistent increase in total need for independence scores through all five categories of socioeconomic status, from low to high, although the differences were not significant.

English course. Scheffé comparisons of ordered means showed English 33 students having significantly higher scores than English 20 students on the Curriculum Inputs dimension. On the Workload Dimensions factor of n Independence, students taking English 33 had significantly higher scores than did English 13 students. The analysis of group differences on total need for independence revealed the English 20 mean score to be significantly higher than that of the English 13 students. The findings of this analysis have been reported in Appendix H - Table T.

Interactions among teacher, program, and English course variables have made it extremely difficult to interpret these findings. The

statistical methods employed in this study did not permit control to be exercised over concomitant variables. Although significant relationships were found between English course and need for independence, no statement has been made about the nature of these relationships due to the limitations imposed by the experimental design.

Summary

A description of the nature of the need for independence was presented by means of profiles of perceived need for independence, preferred need for independence, and importance of preferred level of independence.

Research Hypotheses 1 and 2 received limited support. The results of this study supported the findings in the literature that the meeting of a student's need for independence tended to be related to his feeling of satisfaction with his student role, and also with his rating of the climate in his English classroom. Failure to obtain more decisive results was attributed to the interaction of n Independence with other self-esteem needs.

No evidence was found to reject Hypothesis 3. Students in the open-climate school appeared to have the same need for independence as students in the closed-climate school.

Partial support was found for Hypothesis 4. There was no experimental evidence to reject the null hypothesis with respect to five of the thirteen predictors. Propositions were advanced dealing with the significant relationships found during analysis of five of the remaining predictor variables. The presence of concomitant variables

and the limitations of experimental design ruled out attempts to provide proper interpretations of the significant relationships found between need for independence, and teacher and English course variables.

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

Summary

The Problem

The central purpose of the study was to determine the nature of
the need for independence in high school students. A second, complementary
purpose of the research was to explore the relationships between the
criterion variable, need for independence, and a number of variables,
including student satisfaction, classroom climate, school climate, as
well as certain student characteristics.

Theoretical Basis for the Research

Schools are social institutions established to meet both the needs
of society and those of the individual. A primary objective of schools
is to facilitate the development of a healthy personality for each student.

Personality growth and human motivation may be viewed, as Maslow
has done, as the sequential gratification of the basic human needs:
physiological, safety, belongingness, self-esteem, and self-actualization.
The full flowering of the individual, his self-actualization, cannot
take place until his deficit needs have been largely met.

If, as for most students, the lower, basic needs for food, shelter,
safety, and affiliation have already been met, full and healthy personality
growth depends ultimately upon the satisfaction of an individual's
self-esteem needs. These ego needs include: self-respect, the respect
of others, confidence, competence and mastery, independence and freedom.

While the interdependence of the self-esteem needs is a principle of most theories of personality, in a culture which prizes independence as an adult virtue, the development of behavioral patterns based on self-initiative and responsibility in the adolescent assumes added importance. Although other self-esteem needs are important, the growth of strong feelings of independence may be indispensable to the formation of a healthy self-identity.

Among adolescents the transition from child to adult status involves a gradual adjustment from a dependence state to one of relative independency. One implication of the adolescent's increasing emancipation from family and adults is the requirement of more opportunities to practice making his own decisions in order to become more independent.

In the school the basic activities which constitute the learning process take place in the classroom. It is here that many of the opportunities for fostering healthy personality growth for each student and for easing the transition to a more mature adult role are to be found.

The provision of more and more opportunities for a student to make real choices, to exercise greater initiative, and to assume more responsibility for his learning, is held to be crucial to the development of a healthy self-identity. However, this need is not confined to the adolescent stage of human growth. The evidence from industrial studies on employee satisfaction is indicative of the widespread nature of this need. At all levels of occuption, from the lowliest participant in the organization to the highest management position, studies have shown

that employee satisfaction is positively related to opportunities for participation in the making of decisions about the job.

In this study, the definition of the need for independence was based on Vroom's multiplicative model: need for independence is the product of the discrepancy between preferred and perceived independence, and the importance attached by the student to the preferred level of independence, in a given classroom situation. Need for independence has been conceptualized in terms of these three aspects of decision making.

The Sample

The two urban high schools selected for participation in this study were rated as having the least open climate, School *A*, and the most open climate, School *B*, of the nine urban public high schools. These ratings were first made by the principals of the schools and were independently confirmed by a panel of judges.

A sample of 16 English classes from School *A* and 12 classes from School *B* were chosen for the study. Four hundred twenty eight students in School *A* and 305 students in School *B* constituted a proportional sample of the two populations by grade and school program. Data from both schools were used to investigate the nature of the need for independence, and also to test Hypothesis 3. Because of the larger size and the greater representativeness of the sample, data from School *A* only were used in tests of Hypotheses 1, 2, and 4.

Instrumentation and Methodology

The Student Opinion Questionnaire, consisting of three

subscales, need for independence, Classroom Climate, and Satisfaction, was developed for this study with the aid of factor analysis. The subscales were technically reliable and were considered sufficiently valid for the purposes of an exploratory study.

Data provided by student responses were analyzed, using parametric techniques of multivariate analysis of variance, single-factor analysis of variance, canonical correlations, Pearson Product-Moment correlations, and the Scheffé test for comparing means.

Hypotheses

The research hypotheses tested were:

1. A student's need for independence correlates negatively with his satisfaction;

2. A student's need for independence correlates negatively with his rating of his classroom climate;

3. Student scores on need for independence in an open-climate school do not differ significantly from student scores in a closed-climate school; and

4. A student's need for independence is not significantly related to various personal and situational variables such as: sex, grade, age, school program, period of school attendance, average achievement in all subjects, English mark, aspiration level in English, absenteeism, future plans, socioeconomic status, English course, and teacher.

Findings

The Nature of the Need for Independence

The need for independence was conceptualized as a function of

three variables. Each of these was examined in turn.

Perceived independence. Students in both schools perceived themselves to have less control than the teacher in all but one of the classroom situations. The single exception was the item dealing with students coming in after school for extra help. In the items making up Curriculum Inputs, students perceived themselves to have the least amount of control, while they felt they had most control over Work Interactions.

Preferred independence. In every situation in both schools, on the average, students expressed a wish to have more control over decision making. The highest desired level of independence was for Work Interactions, and the least for Curriculum Inputs.

The greatest discrepancy between preferred and perceived independence was found for Curriculum Inputs and Physical Movement, and the smallest difference occurred for Work Interactions.

Intensity or importance. Students generally rated decision situations as above average in importance. The least important area of decision making was Physical Movement. Matters dealing with Curriculum Inputs and Work Interactions were assigned the greatest importance by students. To students in both schools, the item of greatest concern was their preference for greater participation in the choice of learning activities in the classroom.

Throughout this part of the study, one finding occurred time and time again: there was a striking similarity between both schools on all aspects of the need for independence. The profiles for the two schools on each variable and for total need for independence were virtually identical.

Need for Independence and Satisfaction

Hypothesis 1, that there was a negative relationship between a student's need for independence and his satisfaction, received partial support. Sixteen of 20 correlations were negative, seven of them significantly so. The correlations were all below 0.20, which would indicate that factors outside the scope of this study were contributing to the variability. Nonetheless, a weak negative association was found between need for independence and student satisfaction.

Need for Independence and Classroom Climate

Partial support for Hypothesis 2 was obtained. On three of four dimensions, and also on total need for independence, significant negative correlations with the student's rating of classroom climate were found. In general, a high need for independence was associated with a less positive rating of classroom climate.

Need for Independence and School Climate

No evidence was found to reject Hypothesis 3. Student scores on need for independence in the open-climate school did not differ statistically from those of students in the closed-climate school.

Need for Independence and Other Variables

Student scores on the combined dimensions of need for independence did not differ significantly when grouped by sex, grade, period of attendance, socioeconomic status, or aspiration level in English.

Student scores on the combined dimensions of need for independence differed significantly when students were grouped by: age, program, teacher, future plans, English mark, average achievement in all subjects,

absenteeism, and English course.

The failure of the research design in controlling for concomitant variables ruled out the possibility of adequately explaining the significant relationships between need for independence and the two variables, teacher and English course. Contradictory results prevented a proper interpretation of the relationship between independence and absenteeism.

The following propositions were advanced:

Proposition 1. A student's score on the Curriculum Inputs dimension of the need for independence is significantly related to his grade in school: the higher the grade, the greater the student's need for control over Curriculum Inputs.

Proposition 2. A student's score on the Curriculum Inputs dimension of the need for independence is significantly related to his age: the older the student, the greater the student's need to participate in decisions relating to curriculum.

Proposition 3. A student's score on the Work Interactions dimension of the need for independence is negatively related to his age: the younger the student, the higher his perceived need to participate in class discussion and to have his opinion heard.

Proposition 4. A student's need for independence on the dimensions of Curriculum Inputs and Work Interactions, and on total need for independence, is significantly related to his school program, the needs for matriculation students being greater than those of business education students.

Proposition 5. A student's need for independence on the Work Interactions dimension and his total need for independence are

significantly related to his average mark in all courses: the higher a student's average achievement level, the greater his need for control over Work Interactions and his total need for independence.

Proposition 6. A student's score on total need for independence is significantly related to his mark in his English course: the higher a student's mark in English, the greater his total need for independence

Conclusions

The conclusions presented herewith must be viewed with caution, keeping in mind the limitations of the sampling procedure, the restrictions of the research design, and the nature of the underlying assumptions regarding the criterion variable. Inferences drawn from the findings, and generalizations to other school populations, should be made with extreme care.

Nature of the Need for Independence

As one might expect from a study of an organization with an hierarchical authority structure, students, as the lowest participants in the organization, did not perceive themselves to have much control over the activities in which they engaged as English students. Both in their roles as students and as adolescents they expressed a desire to participate more fully in the making of classroom decisions. However, students did not indicate a uniform level of preference for control over their learning activities. They differentiated between matters such as choice of texts and homework assignments, matters for which they recognize the teacher's more expert knowledge, and those areas in which the issues are less clear-cut. Choices about seeking help from fellow students, selection of working partners, and coming in after school for extra help,

were perceived by students to reside more in the domain of the student than the teacher.

Even when students were prepared to concede the teacher's superiority, or his greater responsibility, in decision making, they were not willing to accept complete teacher control over these matters. They wanted to be consulted more in matters relating to their learning and classroom environment. Students felt that they, rather than their teachers, ought to decide the appropriateness of learning activities for individual students.

A major conclusion from this study about the nature of the need for independence was that there are differential needs, rather than a single need. A second important conclusion was based on the remarkable similarity between the need profiles for students in the two schools. Student needs may reflect a student subculture which is more pervasive than was originally thought.

Student Satisfaction

As predicted there was a negative association between students' needs for independence and their affective orientation toward various aspects of the school and their English class. The low correlations suggest the operation of other factors and other student needs. The results tended to support the findings of industrial job satisfaction studies.

Classroom Climate

When the focus of student attitudes was narrowed to his English classroom, the negative association with need for independence became

stronger. The results substantiated findings of greater initiative
and higher morale among students in classrooms where decision making
and problem solving were shared between the teacher and the student,
rather than dominated by the teacher.

School Climate

Mean scores on the four dimensions and on total need for independence
for students in the open-climate school did not differ significantly from
those of students in the closed-climate school. On the basis of this
evidence it would seem that openness of school climate was not a factor
in meeting the need for independence of students in the classroom.

Personal and Situational Variables

Variables such as sex, socioeconomic status, aspiration level in
English, and period of school attendance, appeared to be unrelated to the
student's need for independence in the classroom. On the other hand, age,
grade, program, future plans, average achievement in all subjects, English
mark, English course, and teacher, were variables which were related signifi-
cantly to a student's need for independence. Older, more able students
in grade 12 on the matriculation program had a higher n Independence level
than younger, less able students in the lower grades on the diploma program.
Students planning to continue their education after high school by
attending a technical-vocational institute, junior college, or
university, had a higher need for independence than those who planned to
finish high school and find work.

The effects of teacher, English course, and absenteeism were
significant but the research design and the scope of the study precluded

attempts to pinpoint precise relationships or to draw definite

conclusions from the findings.

Implications

This study has certain implications for educational administrators.
As educational leaders, principals introduce change into their school
organizations. One such recent innovation has been the introduction of
the "open-campus" high school. The meaning of openness differs from
situation to situation as do the measures undertaken to accomplish it.
Sometimes the opening up of the structure of a school may be an
administrator's response to student protest, or it may be a positive
step taken by an administrator sensitive to the needs of his students.

Where principals react to mounting student unrest and increasing
protest, they tend to do so by relaxing or abolishing the more
objectionable and more visible forms of student constraint. Under these
circumstances, such changes in school structure tend to be superficial,
involving relaxation of student dress and appearance codes, and perhaps
attendance regulations. The immediate effect of such changes is a
reduction in student complaints, if only temporarily. Friction between
staff and students subsides and a more harmonious atmosphere prevails
within the school. But, as far as the educational processes are
concerned, nothing has really changed in the classroom.

On the other hand, a principal with a philosophical commitment
to more open relations between people may alter school structures more
drastically. He may adopt new decision-making procedures within the
school and genuinely involve students. The principal may believe that

changes in the external structures of the school will lead to the more effective meeting of student needs. It is at this point that the administrator must proceed with care, for he cannot assume that changing external aspects of school organization will automatically result in the meeting of a student's needs in the classroom. One of the most interesting suggestions emerging from this study is that it takes more than a principal's determination to open up the climate of a school. Even with staff approval, measures taken at the school level to provide more freedom and responsibility for high school students do not appear to produce more freedom and independence for students in the classroom.

The prerequisite to openness in school climate may be the changing of basic teacher attitudes, a complex and lengthy problem. One approach to the problem is to inform teachers, individually or in groups, about the nature of student needs, including the need for independence. Data from a study such as this could be fed back into the system, revealing patterns of student preferences and the degree of importance attached by students to decision situations. Concerned teachers would utilize this information and new procedures for curriculum development might evolve. Over-all control would remain with the teacher but the students would be less dependent upon the teacher for the choices they must make and the consequences for which they must ultimately be responsible.

Patience and understanding are essential characteristics for any administrator who would introduce greater openness into his school structures. The time element might be shortened if staff recruitment procedures included the taking of attitude tests by prospective teachers.

The principal could then select teachers whose natural inclinations predispose them toward openness in teacher-student relations. Probably, however, the greatest challenge for the administrator is the generation in teachers of an attitude of openness.

In line with this thought is a suggested development in teacher training practices. Greater emphasis by faculty members in universities, both in theory and in practice, on meeting the full range of student needs, might assist student teachers to adjust their achievement-oriented attitudes to one of greater awareness of the self-esteem needs, and their importance in the growth of healthy adolescent personalities. Encounter groups and sensitivity training might also become integral parts of the educational programs of teachers.

Administrators should take cognizance of the rather marked differences in need for independence shown by older, more able students in their final year of the matriculation program, as compared to younger, less able students on other programs. No doubt it can be argued that the need to be successful takes precedence over a student's need for independence, especially when he plans to continue his education. Nevertheless, there must be many needless restrictions placed on such students' freedom of choice under the guise of preparing them for their final external examinations. How a student learns may be much more important than what he learns. Both teachers and administrators should consider the implications of this study that students prefer to have the major share of decisions about the appropriateness of classroom learning activities.

A final implication of this study for all educators is that the more fully a student's need for independence is met, the more positive is

his attitude toward his subject, and the more satisfied he tends to be with his relations with significant others in the school. Establishing more and better ways of providing for greater student initiative in the classroom could spill over into more congenial and relaxed learning atmospheres in classrooms. Greater independence and responsibility is the goal, not more permissiveness and license.

Implications for Further Research

The need for independence is but one of several interrelated and important self-esteem needs. The satisfaction of these needs is believed to be essential both for the self-actualization of the student and for his eventual assumption of a responsible adult role. More research is needed in the area of the self-esteem needs of all students, both at the elementary and the secondary levels of education.

Studies, which go beyond the present one, must be undertaken to determine how student personality interacts with need for independence. Questions for which answers are required include:

1. Do high achievers consciously relinquish some of their independence in order to maintain high grades, or is this choice made for them by the very structure of school organization?

2. Are there personality patterns among students which predispose them to particular levels of need for independence?

Until a more valid instrument for measuring need for independence is constructed, the present scale could be used to augment empirical knowledge about need for independence. The instrument could be administered under a variety of circumstances which would permit comparisons to be made between student need for independence in:

1. Large and small schools.

2. Rural and urban schools.

3. Academic and non-academic courses.

Indeed, the mere replication of this study would shed some light on the pervasiveness of student perceptions of need for independence. Is there a common profile of need for independence across urban systems, and also from school system to school system?

Insofar as the research design for the present study is concerned, it is apparent that a number of improvements could be made:

1. Further validation is needed. Students who take the independence subscale could also complete a test for anxiety. A significant negative correlation would tend to increase test validity, since dependent children have been shown to demonstrate a higher level of anxiety than do independent children.

2. The inconclusive findings in this study with respect to the effect of teachers on a student's need for independence might be partially resolved if the teachers in such a study could be persuaded to complete an instrument such as the Pupil Control Ideology Test (Willower et al., 1967). Some insights might be gained into the relationship between the teacher's attitude toward pupil control and his students' needs for independence.

3. Better sampling procedures are essential if the results of such a study are to be applied to student populations at large. A more representative sample is needed.

4. Statistical techniques should be employed which incorporate appropriate measures for controlling concomitant variables. The

researcher would then be able to determine the relative importance of the various predictors of a student's need for independence.

A search should be made for additional variables to be added to a further study. It is apparent that the present ones do not account for a very large percentage of the variability in n Independence.

Concluding Statement

A rather halting first step has been taken in this study to explore the need for independence among high school students. Some insight has been gained into the characteristics of schools and students which may be associated with this need.

The findings suggest that teachers and administrators might re-examine the nature of school programs and classroom procedures with the objective of providing students with more opportunities for increased independence.

Further research may result in changes in school organization and in student-teacher relations. These changes may in turn lead to improved student attitudes toward the learning process and at the same time result in more effective forms of educational institutions.

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A'PPENDICES

A P P E N D I X A

SCHOOL CLIMATE QUESTIONNAIRE

SCHOOL CLIMATE QUESTIONNAIRE

PART I - INTRODUCTION

The statements in Part III of this questionnaire have to do with certain aspects of a school's operation. Each statement represents, directly or indirectly, some aspect of school policy with reference to student personnel. The extent to which each of these practices is permitted in a school can be construed as being partially indicative of the principal's philosophy of education, subject to whatever constraints are imposed by external bodies such as the School Board or Department of Education.

Within each school the application of school management practices affects student and staff attitudes, thus contributing to the creation of what has been called the school's 'climate'. For the purpose of this study only one general dimension of school climate will be considered, *openness*.

PART II - INSTRUCTIONS

A. Use the categories described below for your responses to the statements in Part III.

1. *No students* are permitted to engage in the practice. The practice is officially banned in the school.

2. *A few students* are officially permitted to engage in the practice.

3. *Many students* are allowed to engage in the practice.

4. *All students* may engage in the practice.

B. For each of the practices in Part III please *circle* the number of the category which *best* describes your school's official policy.

C. In order that the scores of all schools be directly comparable it is essential that you respond to every item.

D. Make certain you write the name of your school at the top of both pages 3 and 2.

PART III   School_____

1. Students are permitted to leave the school
    premises (grounds and buildings) during
    school hours without special permission
    from the office.   1   2   3   4

2. Students may go home when their last class for
    the day is over.   1   2   3   4

3. Students may use their study or free periods
    as they wish.   1   2   3   4

4. Matters of school dress and appearance are
    left to the student's discretion.   1   2   3   4

5. Students are permitted free access to school
    hallways and to their lockers during class
    time (no pass required).   1   2   3   4

6. Students are permitted free access to school
    facilities such as library, cafeteria, or
    unused classrooms during study periods or
    unassigned time (no pass required).   1   2   3   4

7. Attendance by students at scheduled classes
    is voluntary.   1   2   3   4

8. Students who arrive at school after a
    school session has begun are permitted to
    go directly to class without first obtaining
    a late slip from the office.   1   2   3   4

9. Before each school session students must
    register in home rooms to have their
    attendance taken.   1   2   3   4

10. Students are required to bring a note to
    explain absences from school.   1   2   3   4

11. Students are freely permitted to enter the
    school program of their choice (no
    arbitrary restrictions such as marks over
    50 per cent are imposed).   1   2   3   4

12. Students are freely permitted to drop a
    course when they feel their course load is
    too heavy or when they feel they have no
    chance of passing the course.   1   2   3   4

PART III

13. Smoking by students is permitted in a
    special room in the school or on the
    school grounds.   1   2   3   4

14. Students are permitted to arrive at school
    in the morning or afternoon at the time of
    their first scheduled class.   1   2   3   4

PART IV   School_____

1. Compared with the other high schools in the Edmonton Public
    School System, estimate the degree of openness that exists
    in your school, with respect to students.

    Circle the number of your response.

    1. High   5. Slightly below average

    2. Moderately high   6. Moderately below average

    3. Somewhat high   7. Well below average

    4. Average

2. Comment on the reasons for your answer in Question 1.

3. In your school what do you feel are the significant aspects
    of school policy as it relates to students?

A P P E N D I X B

STUDENT OPINION QUESTIONNAIRE

STUDENT OPINION

QUESTIONNAIRE

The items in this questionnaire have to do with typical situations in the classroom or within the school. Please respond to each item from your personal experience.

It is important that your answers be "independent", so please do not discuss your answers with other students. Though there is no time limit, it will take about thirty minutes to complete the questionnaire.

Please be frank in your responses with the assurance that individual replies are strictly confidential.

DIRECTIONS

(a) READ each item carefully.

(b) THINK about how each item applies to you in this class-room or in this school.

(c) DECIDE which of the possible responses best describes your opinion.

(d) RESPOND to the item in accordance with the instructions at the beginning of each part.

(e) If you wish to change an answer cross it out and circle your new response.

DO NOT WRITE YOUR NAME ON THE QUESTIONNAIRE.

Please respond to EVERY item.

PART I   *YOUR ENGLISH CLASS*

Items 1 - 22 deal with decision-making situations that commonly arise in your English class. One way or another each decision is made:

A. Almost entirely by you.

B. Mostly by you, but with the help of your English teacher

C. About equally by yourself and the teacher.

D. Mostly by the teacher, but with your help.

E. Almost entirely by the teacher.

DIRECTIONS

Consider carefully each situation as it applies to you *in THIS CLASSROOM.*

When you have decided how each decision is made CIRCLE the letter which corresponds most closely to your choice.

WHO DECIDES

1.	Whether you may change to another seat	A B C D E
2.	When you may go to the washroom	A B C D E
3.	When you may go to your locker	A B C D E
4.	When you need to go to the library	A B C D E
5.	When you may speak in class	A B C D E
6.	What texts are used in your English class	A B C D E

WHO DECIDES

7.	How much class time you spend on a particular topic or text	A B C D E
8.	Which records, tapes, films, and filmstrips are used in class	A B C D E
9.	Which topics or selections are studied from your present English text	A B C D E
10.	What type of learning activity you will engage in next in this class	A B C D E
11.	What kinds of learning activities are appropriate for you	A B C D E

PART I - continued

    A. Almost entirely by you

    B. Mostly by you, but with the help of your teacher

    C. About equally by yourself and the teacher

    D. Mostly by the teacher, but with your help

    E. Almost entirely by the teacher

WHO DECIDES

12. Whether, and under what conditions, you work by yourself   A B C D E

13. Whether you may ask for, or receive, help from another student   A B C D E

14. What topics are discussed in class   A B C D E

15. With whom you work on group projects   A B C D E

16. Whose opinion prevails when there is a difference of opinion during class discussion   A B C D E

17. Whether you should come back after class for extra help   A B C D E

WHO DECIDES

18. What topic you will report on orally to the class   A B C D E

19. How much homework is assigned   A B C D E

20. What essay topics you write on   A B C D E

21. What conclusions are drawn from classroom discussions   A B C D E

22. When assignments or reports are to be ready   A B C D E

DIRECTIONS

    CIRCLE the letter of the response which applies to you.
DO NOT UNDERLINE.

23. State your sex.

    A. Boy

    B. Girl

24. In which school grade are you?

    A. Ten

    B. Eleven

    C. Twelve

25. What is your age as of last birthday?

    A. 14 or under   E. 18

    B. 15   F. 19

    C. 16   G. 20 or over

    D. 17

26. In which of the following high school programs are you
now registered?

    A. Business education   E. Matriculation

    B. Business – Matriculation   F. General

    C. Technical   G. Combined

    D. Technical-Matriculation   H. Trades and Services

27. How long have you attended this school?

    A. Less than five months   E. 2 to 2 1/2 years

    B. Five months to one year   F. 2 1/2 to 3 years

    C. One to 1 1/2 years   G. more than 3 years

    D. 1 1/2 to 2 years

PART II – continued

28. What was your average percentage mark for all subjects on your last report in this school?

   A. 90% or over   E. 50 – 59%

   B. 80 – 89%   F. 40 – 49%

   C. 70 – 79%   G. 39% or lower

   D. 60 – 69%

29. What was your percentage mark in English on the last report in this school?

   A. 90% or over   E. 50 – 59%

   B. 80 – 89%   F. 40 – 49%

   C. 70 – 79%   G. 39% or lower

   D. 60 – 69%

30. If you had done your best in English during the last reporting period, what percentage mark would you have made?

   A. About the same   E. 16 – 20% higher

   B. 1 – 5% higher   F. 21 – 25% higher

   C. 6 – 10% higher   G. 26% or more above
                                 present report mark
   D. 11 – 15% higher

31. How many English classes have you missed, more or less deliberately, since the beginning of the present school year? Exclude illnesses.

   A. none

   B. 1 – 2 classes

   C. 3 – 5 classes

   D. 6 – 9 classes

   E. 10 classes or more

32. Which of the following statements best describes your future plans?

    A. Leave school before graduation

    B. Graduate and then find work

    C. Go into technical–vocational training after high school

    D. Enter University after high school

    E. Attend Junior College after high school

    F. Other

33. What is your father's present occupation?

_____

34. What is your mother's present occupation? (If working outside your home)

_____

35. What is the highest level of your father's education?

    A. Elementary

    B. Junior High

    C. Some High School

    D. High School Graduate or equivalent

    E. Some University training or equivalent

    F. University Graduate

36. What is the highest level of your mother's education?

    A. Elementary

    B. Junior High School

    C. Some High School

    D. High School Graduate or equivalent

    E. Some University training or equivalent

    F. University Graduate

37. What is the number of the English course in which this questionnaire is now being administered?

A. 10	D. Language 21	G. 23
B. 13	E. 22	H. 30
C. 20	F. Literature 21	I. 33

The purpose of this instrument is to measure the attitude of various students toward your English class by having them judge this concept against a series of descriptive scales. In taking this test, please make your judgements on the basis of what this concept means to *you*.

DIRECTIONS: Here is how to use these scales:

1. If you feel that this concept is *very closely related* to one end of the scale, you should place your check-mark as follows:

hard__x__:_____:_____:_____:_____:_____:_____soft

or

hard_____:_____:_____:_____:_____:_____:__x__soft

2. If you feel that this concept is *quite closely related* to one side as opposed to the other (but not extremely), you should place your check-mark as follows:

rough_____:__x__:_____:_____:_____:_____:_____smooth

or

rough_____:_____:_____:_____:_____:__x__:_____smooth

3. If this concept seems *only slightly related* to one side as compared to the other (but not really neutral), then you should check as follows:

broad____:_____:__x__:_____:_____:_____:_____ narrow

or

broad____:_____:_____:_____:__x__:_____:_____ narrow

The direction toward which you check, of course, depends upon which of the two ends of the scale seems most characteristic of the concept you are judging.

4. If you consider the concept to be *neutral* on the scale, both sides of the scale *equally associated* with the concept, or if the scale is *completely irrelevant*, or unrelated to the concept, then you should place your check-mark in the middle space.

safe_____:_____:_____:__x__:_____:_____:_____dangerous

IMPORTANT: (1) Place your check-marks in the middle of the spaces, not on the boundaries:

	THIS	NOT THIS
_____:_____:_____:_____:	x :	X_____

(2) Be sure to check every scale. *DO not omit any*.
(3) Never put more than one check-mark on a single scale.

PART III - continued

Sometimes you may feel as though you've had the same item before on the test. This will not be the case, so *do not look back and forth* through the items. Do not try to remember how you checked similar items earlier in the test. *Make each item an independent and separate judgment.* Work at fairly high speed through this test. Do not worry or puzzle over individual items. It is your first impression, the immediate "feelings" about the item that is wanted. On the other hand, please do not be careless because your true impressions are wanted.

MY ENGLISH CLASS

38.	friendly	___	___	___	___	___	___	___unfriendly
39.	warm	___	___	___	___	___	___	___cold
40.	unhealthy	___	___	___	___	___	___	___healthy
41.	positive	___	___	___	___	___	___	___negative
42.	favorable	___	___	___	___	___	___	___unfavorable
43.	free	___	___	___	___	___	___	___restricted
44.	inefficient	___	___	___	___	___	___	___efficient
45.	sweet	___	___	___	___	___	___	___sour
46.	tense	___	___	___	___	___	___	___relaxed
47.	wise	___	___	___	___	___	___	___foolish
48.	clear	___	___	___	___	___	___	___confusing
49.	trustful	___	___	___	___	___	___	___distrustful
50.	good	___	___	___	___	___	___	___bad
51.	dishonest	___	___	___	___	___	___	___honest
52.	passive	___	___	___	___	___	___	___active
53.	fair	___	___	___	___	___	___	___unfair
54.	weak	___	___	___	___	___	___	___strong
55.	fast	___	___	___	___	___	___	___slow
56.	unpleasant	___	___	___	___	___	___	___pleasant
57.	valuable	___	___	___	___	___	___	___worthless

PART IV   SATISFACTION

DIRECTIONS:

        Rate your degree of satisfaction as a student in each
of the following areas, using this scale. CIRCLE the letter which
best describes your feelings.

        A. Highly satisfied

        B. Quite satisfied

        C. Slightly satisfied

        D. Slightly dissatisfied

        E. Quite dissatisfied

        F. Highly dissatisfied

58. Relations with other students in your   A   B   C   D   E   F
English class

59. Relations with your English teacher   A   B   C   D   E   F

60. Relations with the principal and other
administrators   A   B   C   D   E   F

61. Relations with other students in this
school   A   B   C   D   E   F

62. Relations with counsellor(s)   A   B   C   D   E   F

63. Relations with other teachers in this
school   A   B   C   D   E   F

64. Your progress in this English class (the
mark you have achieved)   A   B   C   D   E   F

65. The quality of the work you have produced
in this English class   A   B   C   D   E   F

In this section each item has two parts: WHO SHOULD DECIDE:
and HOW IMPORTANT THE DECISION IS TO YOU.

Items 66 - 87 have to do with situations which arise in your
English class.

(a) IN YOUR OPINION, by whom SHOULD the following decisions be
made? DO NOT LOOK BACK AT YOUR PREVIOUS ANSWERS.

CIRCLE the letter of the answer which best describes your
opinion.

A. Almost entirely by you

B. Mostly by you, but with the help of your English
    teacher

C. About equally by yourself and the teacher

D. Mostly by the teacher, but with your help

E. Almost entirely by the teacher

(b) HOW IMPORTANT IS IT TO YOU, personally, to have the decision made
as you have just indicated?

A. Highly important

B. Quite important

C. Moderately important

D. Slightly important

E. Not important

WHO SHOULD DECIDE

66. Whether you may change to another seat   A   B   C   D   E

                             How important   A   B   C   D   E

67. When you may go to the washroom   A   B   C   D   E

                             How important   A   B   C   D   E

68. When you may go to your locker   A   B   C   D   E

                             How important   A   B   C   D   E

69. When you need to go to the library   A   B   C   D   E

                             How important   A   B   C   D   E

70. When you may speak in class   A   B   C   D   E

                             How important   A   B   C   D   E

71. What texts are used in your English class   A   B   C   D   E

                             How important   A   B   C   D   E

PART V – continued

WHO SHOULD DECIDE	HOW IMPORTANT IS IT TO YOU
A. Almost entirely by you	A. Highly important
B. Mostly by you, but with the help of your English teacher	B. Quite important
C. About equally by yourself and the teacher	C. Moderately important
D. Mostly by the teacher, but with your help	D. Slightly important
E. Almost entirely by the teacher	E. Not important

WHO SHOULD DECIDE

72. How much class time you spend on a particular topic or text   A   B   C   D   E

      How important   A   B   C   D   E

73. Which records, tapes, films, and filmstrips are used in class   A   B   C   D   E

      How important   A   B   C   D   E

74. Which topics or selections are studied from your present English text   A   B   C   D   E

      How important   A   B   C   D   E

75. What type of learning activity you will engage in next in this class   A   B   C   D   E

      How important   A   B   C   D   E

76. What kinds of learning activities are appropriate for you   A   B   C   D   E

      How important   A   B   C   D   E

77. Whether, and under what conditions, you work by yourself   A   B   C   D   E

      How important   A   B   C   D   E

WHO SHOULD DECIDE

78. Whether you may ask for, or receive, help from another student   A   B   C   D   E

      How important   A   B   C   D   E

79. What topics are discussed in class   A   B   C   D   E

      How important   A   B   C   D   E

80. With whom you work on group projects   A   B   C   D   E

      How important   A   B   C   D   E

PART V – continued

WHO SHOULD DECIDE

A. Almost entirely by you

B. Mostly by you but with the help of your English teacher

C. About equally by yourself and the teacher

D. Mostly by the teacher, but with your help

E. Almost entirely by the teacher

HOW IMPORTANT IS IT TO YOU

A. Highly important

B. Quite important

C. Moderately important

D. Slightly important

E. Not important

WHO SHOULD DECIDE

81. Whose opinion prevails when there is a difference of opinion during class discussion

	A	B	C	D	E
How important	A	B	C	D	E

82. Whether you should come back after class for extra help

	A	B	C	D	E
How important	A	B	C	D	E

83. What topic you will report on orally to the class

	A	B	C	D	E
How important	A	B	C	D	E

84. How much homework is assigned

	A	B	C	D	E
How important	A	B	C	D	E

85. What essay topics you write on

	A	B	C	D	E
How important	A	B	C	D	E

86. What conclusions are drawn from class discussions

	A	B	C	D	E
How important	A	B	C	D	E

87. When assignments or reports are to be ready

	A	B	C	D	E
How important	A	B	C	D	E

A P P E N D I X   C

RAW SCORE CUMULATIVE PERCENTAGE FREQUENCIES FOR DISTRIBUTION
OF NEED FOR INDEPENDENCE — SCHOOLS *A* AND *B*

TABLE A

RAW SCORE CUMULATIVE PERCENTAGE FREQUENCIES FOR DISTRIBUTION
OF NEED FOR INDEPENDENCE - SCHOOLS *A* AND *B*

Class Interval (Total Need for Independence)	School A			School B		
	Frequency	Cumulative Frequency	Cumulative Percentage Frequency	Frequency	Cumulative Frequency	Cumulative Percentage Frequency
350–399	1	428	100.00	0	305	100.0
300–349	1	427	99.77	2	305	100.00
250–299	6	426	99.53	3	303	99.34
200–249	20	420	98.13	16	300	98.36
150–199	47	400	93.46	27	284	93.11
100–149	83	353	82.48	54	257	84.26
50–99	84	270	63.08	66	203	66.56
0–49	113	186	43.46	98	137	44.92
–50–(–1)	66	73	17.06	39	39	12.79
–100–(–51)	7	7	1.64	0	0	0.00
Total	428			305		

A P P E N D I X   D

QUESTIONNAIRE DEVELOPMENT AND PILOT STUDY

Questionnaire Development and Pilot Study

Introduction

Included in Appendix D are the following:

1. An account of the development of the initial form of the questionnaire. ·
2. A description of the pilot study.
3. The factor analyses of the Classroom Climate Subscale.
4. The item distribution of the four dimensions of need for independence.

The Development of the Student Opinion Questionnaire

There were five stages in the development of the Student Opinion Questionnaire.

Student Interviews

The purpose of the interviews was to obtain topics for the item pool for the Perceived Independence Subscale. The interviews were conducted in an urban high school. Fifteen students from all three grades and both sexes, as well as from several school programs, were included in the sample.

The interviews were semi-structured in that a series of open-ended questions was asked. Students were then invited to make suggestions about new topics for inclusion in the study. They were asked to comment on the importance of the various decision-making situations. Each interview lasted 50 minutes and was recorded, with the interviewee's consent.

First Administration - Student Opinion Questionnaire

The investigator then constructed the Student Opinion Questionnaire, consisting of six subscales:

1. Perceived independence in the classroom,
2. Perceived independence in the school,
3. Classroom climate,
4. Satisfaction,
5. Preferred independence in the classroom,
6. Preferred independence in the school.

The questionnaire was submitted to a number of colleagues and to a member of the staff for possible changes in item construction and format. In its amended form the Student Opinion Questionnaire (SOQ) was administered to a group of volunteer high school students in an after-school session. Once the subjects had completed the questionnaire they engaged in a lengthy discussion with the investigator concerning the clarity and usefulness of each item. A number of suggested revisions were then incorporated in the SOQ.

The Pilot Study

Permission was obtained by the investigator from his advisor to conduct a pilot study. The purpose was to continue the refinement of the SOQ and to obtain some indication of its reliability and validity. A suburban high school was chosen as the participating school. Five teachers in the English Department agreed to cooperate by allowing their students to complete the questionnaire.

In all, 203 students from eleven classes participated in the Pilot Study. This sample constituted 40% of the whole school population. The sample is described in Table B.

TABLE B

DISTRIBUTION OF STUDENTS IN PILOT STUDY SAMPLE
BY COURSE, TEACHER, AGE, GRADE, AND SEX

(Number of students = 203)

Class	English Course	Teacher	Sex M	Sex F	Age 14	Age 15	Age 16	Age 17	Age 18	Age 19	Total	
1	30	A	11	7			1	10	7		18	
2	30	A	11	2				9	3	1	13	Grade
3	33	B	11	6				4	12	1	17	Twelve
4	33	B	11	1				9	2	1	12	n = 60
5	20	B	5	12			10	6	1		17	
6	20	B	8	17			14	10	1		25	Grade
7	23	C	6	9			9	3	3		15	Eleven
8	23	C	23	0			6	13	4	:	23	n = 80
9	10	D	6	13		12	7				19	
10	10	D	12	12	2	7	14	1			24	Ten
11	10	E	0	20		5	10	5			20	n = 63
Totals			104	99	2	24	71	70	33	3	203	

Final Form of Student Opinion Questionnaire

Following tabulation and analysis of the data from the Pilot Study a number of revisions in the SOQ were made. The changes were:

1. *Subscales for Perceived and Preferred Independence in the School*

The two subscales, preferred and perceived independence in the school were dropped from the SOQ as being irrelevant to the purposes of the proposed study. The major focus of the study is the student's perceived need for independence in the classroom.

2. *Satisfaction Subscale*

Two items were added to this 6-item subscale to broaden the area of satisfaction sampled to include the satisfaction of the student with his performance in the English course.

3. *Personal Information*

The items relating to sociometric status were dropped from the SOQ. The possibility of jeopardizing the validity of student responses by requiring students to identify themselves was felt to be too great.

4. *Importance of Preferred Independence State*

The form of the questionnaire used in the Pilot Study was such that a discrepancy score was generated as the student's need for indepen-dence. Earlier, in Chapter III, the case was presented for using a multiplicative. model to measure the need for independence.

In the final form of the SOQ each student was asked to indicate how much importance he attached to the attainment of his preferred degree of control over decision making.

Classroom Climate Subscale

The semantic differential technique was chosen for the measurement of student attitudes toward the concept "My English Class". Nunnally (1967, p. 541) has rated this method of scaling verbalized attitudes as being the most valid measure available.

Originally the semantic differential consisted of 22 scales chosen by the investigator from the literature on classroom climate and from Osgood, Suci, and Tannenbaum (1957).

The 22 scales were then administered to a group of 57 students in the high school mentioned earlier. The sample included an English 30 class, an English 33 class, and the 15 students interviewed originally.

Student responses were subsequently factor-analyzed using the Varimax Rotation to simple structure. The results of the factor analysis are presented in Table C. The unrotated factor matrix had revealed one strong factor with communalities totalling 47.6% of the variance. The two items with communalities less than 0.50 were dropped, reducing the semantic differential to 20 scales.

The remaining 20 scale scores were again subjected to factor analysis with Varimax Rotation. Three factors were tentatively identified: Evaluative factors I, II, and III (Nunnally, 1967, pp. 536-537). The results of the second factor analysis are reported in Table D.

TABLE C

FACTOR LOADINGS: VARIMAX ROTATION DATA FROM
CLASSROOM CLIMATE SUBSCALE

(N = 57)

Item	Communalities	Factors 1	2	3
1	.602	.269	.661	.304
2	.623	.254	.514	.543
3	.635	.760	.164	.176
4	.385	.364	.375	.335
5	.640	.791	.118	.006
6	.737	.747	.392	.158
7	.631	.084	.771	.173
8	.694	.806	.202	.063
9	.679	.275	.720	.293
10	.787	.132	.857	-.189
11	.658	.762	.154	.230
12	.548	.578	.351	.301
13	.689	.268	.064	.783
14	.741	.728	.346	.304
15	.244	.428	.162	.186
16	.643	.190	.147	.765
17	.558	.594	.271	.362
18	.525	.284	.433	.507
19	.624	.677	.119	.389
20	.658	.771	.070	.242
21	.760	.685	.488	.229
22	.756	.745	.050	.445
	13.815	7.026	3.761	3.027

TABLE D

FACTOR LOADINGS: VARIMAX ROTATION DATA FROM
20 ITEMS – *CLASSROOM CLIMATE SUBSCALE*

(N = 57)

Item	Communalities	Factors 1	Factors 2	Factors 3
1	.572	-.015	.401	.641
2	.516	.086	.316	.639
3	.443	.160	.626	.159
4	.371	.309	.439	.289
5	.601	.482	.432	.426
6	.436	.236	-.083	.611
7	.635	.780	.127	.101
8	.512	.393	.289	.524
9	.508	.021	.005	.712
10	.578	.687	.324	.025
11	.326	.316	.409	.243
12	.659	.173	.777	.159
13	.664	.539	.573	.157
14	.531	.184	.705	-.002
15	.441	.610	.185	.186
16	.582	.359	.659	.139
17	.521	.599	.360	.179
18	.636	.790	.090	.055
19	.636	.440	.403	.529
20	.599	.658	.340	.224
	10.747	4.219	3.724	2.804

The Dimensions of the Need for Independence

The four factors tentatively identified as underlying dimensions

of the need for independence were:

Factor   I.   Control over Curriculum Inputs – texts, audiovisual
materials, topics studied and discussed, kinds of
learning activities.

7 items – 6, 7, 8, 9, 10, 11, and 14.

Factor   II.   Control over Physical Movement – going to locker,
washroom, library; changing seats.

5 items – 1, 2, 3, 4, and 12.

Factor III.   Control over Workload Dimensions – amount and
deadlines for homework, topics for written and oral
work.

5 items – 15, 18, 19, 20, and 22.

Factor   IV.   Control over Work Interactions – coming in for extra
help, asking or receiving help from fellow students.

5 items – 5, 13, 16, 17, and 21

Final Subscale – Need for Independence

I.   *Control over Curriculum Inputs* – Items

6.   What texts are used in your English class?

7.   How much time you spend on a particular topic or text?

8.   Which records, tapes, films, and filmstrips are used in class?

9.   What topics or selections are studied from your present
English text?

10.   What type of learning activity you will engage in next
in class?

11.   What kinds of learning activities are appropriate for you?

14.   What topics are discussed in class?

II. *Control over Physical Movement* - Items

 1. Whether you may change to another seat?

 2. When you may go to the washroom?

 3. When you may go to your locker?

 4. When you may go to the library?

12. Whether, and under what conditions, you work by yourself?

III. *Control over Workload Dimensions* - Items

15. With whom you will work on group projects?

18. What topics you will report on orally in class?

19. How much homework is assigned?

20. What essay topics you write on?

22. When assignments or reports are to be ready?

IV. *Control over Work Interactions* - Items

 5. When you may speak in class?

13. Whether you may ask for, or receive, help from another student?

16. Whose opinion prevails when there is a difference in opinion during class discussion?

17. Whether you should come back after class for extra help?

21. What conclusions are drawn from class discussions?

A P P E N D I X   E

NEED FOR INDEPENDENCE – ADDITIONAL FACTOR ANALYSES

TABLE E

VARIMAX ROTATION FOUR FACTOR ANALYSIS n INDEPENDENCE –
SCHOOLS *A* AND *B* COMBINED

(N = 733)

Item	Communalities	Factors			
		I	II	III	IV
1	.516	.178	.645	.109	.236
2	.623	.137	.757	.174	-.018
3	.657	.210	.778	.084	.036
4	.449	.330	.544	.178	.110
5	.328	.153	.455	.203	.239
6	.604	.692	.286	.182	.098
7	.557	.701	.160	.152	.130
8	.580	.659	.211	.297	.108
9	.664	.771	.164	.171	.121
10	.617	.722	.157	.251	.092
11	.436	.534	.238	.187	.242
12	.482	.363	.363	.130	.449
13	.480	.185	.288	.250	.548
14	.475	.532	.159	.369	.174
15	.443	.295	.144	.228	.539
16	.462	.178	.219	.616	.059
17	.531	.010	.007	.006	.726
18	.503	.221	.078	.630	.225
19	.470	.288	.177	.532	.269
20	.470	.265	.143	.591	.172
21	.534	.129	.108	.711	.014
22	.364	.313	.129	.382	.323
	11.245	3.917	2.744	2.726	1.858

TABLE F

PROMAX OBLIQUE PRIMARY FACTOR PATTERN MATRIX
NEED FOR INDEPENDENCE — SCHOOL *A*

(N = 428)

Item	Factors			
	I	II	III	IV
1	.030	.764	.166	-.158
2	-.097	.848	.156	-.119
3	.021	.831	-.041	-.038
4	.339	.441	-.169	.137
5	-.052	.308	-.274	.660
6	.722	.064	-.118	.118
7	.751	.043	-.004	-.101
8	.714	.021	.139	-.067
9	.857	-.030	.072	-.113
10	.861	-.065	-.004	-.062
11	.534	.032	-.021	.307
12	.171	.317	-.021	.307
13	-.155	.262	.313	.351
14	.519	-.070	.096	.227
15	.193	.060	.472	-.055
16	.075	-.140	.142	.615
17	-.294	-.030	.124	.685
18	-.048	-.026	.739	.080
19	.094	-.001	.626	.076
20	-.090	.189	.725	-.042
21	.098	-.315	.094	.743
22	.211	-.027	.482	.031

TABLE G

PROMAX OBLIQUE PRIMARY FACTOR PATTERN MATRIX
NEED FOR INDEPENDENCE - SCHOOL B

(N = 305)

	Factors			
Item	I	II	III	IV
1	-.214	-.041	.365	.378
2	-.032	.064	.949	-.403
3	.084	-.174	.927	-.157
4	.146	-.088	.461	.204
5	.077	.161	.303	.097
6	.851	-.186	.162	-.027
7	.832	-.013	-.082	-.007
8	.617	.176	.024	-.041
9	.939	-.218	-.026	.049
10	.681	.276	-.060	-.126
11	.501	.094	.040	.012
12	.292	.041	.203	.251
13	-.029	.131	.020	.634
14	.444	.333	-.025	-.028
15	-.168	.378	-.004	.517
16	-.117	.782	.104	-.163
17	.020	-.346	-.343	1.030
18	-.020	.699	-.109	.105
19	.128	.355	.065	.223
20	.159	.717	-.233	.023
21	-.157	.979	-.003	-.320
22	.115	.309	.036	.230

A P P E N D I X   F

PILOT STUDY FOLLOW-UP QUESTIONNAIRE

PILOT STUDY FOLLOW-UP QUESTIONNAIRE

PART I

INSTRUCTIONS

This part consists of fifteen questions. For each question there are five possible responses.

1. Read each question carefully.

2. Choose the response which most satisfactorily describes the way you feel about the situation.

3. Place a check mark in the space beside the response you have chosen.

1. How important is it for you to feel that you can run your life without depending upon people who are older and more experienced than you? (Check one).

____Not at all
____Slightly
____Somewhat
____Very
____Extremely

2. How often do you find that you can carry out other people's suggestions without changing them any? (Check one).

____Rarely
____Sometimes
____Often
____Very often
____Almost always

3. How much humility do you think you should show to those whom you respect and admire? (Check one).

____None at all
____A little
____Some
____Quite a bit
____Very much

4. How much respect do you think should be shown to a judge even outside his courtroom? (Check one).

____None at all
____Some
____Quite a bit
____Very much
____Extremely much

5. How much do you usually want the person who is in charge of a group you are in to tell you what to do? (Check one).

____Not at all
____A little
____Somewhat
____Quite a bit
____Very much

6. When you have a problem how much do you think it through yourself without help from others? (Check one).

____Not at all
____Somewhat
____Quite a bit
____Very much
____Extremely much

7. How much respect do you think people should show to a policeman? (Check one).

_____None at all
_____Some
_____Quite a bit
_____Very much
_____Extremely much

8. How hard do you find it to disagree with others even in your own thinking? (Check one).

_____Not at all
_____Slightly
_____Somewhat
_____Quite
_____Very

9. How much do you feel that you are not as good in most things as people who are older and more experienced than you? (Check one).

_____Not at all
_____A little
_____Somewhat
_____Quite a bit
_____Very much

10. In school how much do you dislike teachers who have forceful and dominant personalities? (Check one).

_____Not at all
_____A little
_____Somewhat
_____Quite a bit
_____Very much

11. If you have thought about something and come to a conclusion, how hard is it for someone else to change your mind? (Check one).

_____Not at all
_____Somewhat
_____Quite
_____Very
_____Extremely

12. How much do you feel that officers of the law should tell people what to do rather than ask them? (Check one).

_____Not at all
_____A little
_____Somewhat
_____Quite a lot
_____Very much

13. At school under which of these conditions would you learn best? (Check one).

_____If I were left completely alone to seek out whatever I wanted
_____If I were given suggestions from teachers as to what might be best to study
_____If I were given some suggestions and some assignments to complete
_____If I were instructed, given assignments, and tested occasionally
_____If I were given daily instructions, daily assignments, and frequent tests

PART I - continued

14. How much do you dislike being told by
    an adult to do something that is
    contrary to your wishes?   (Check one).

    _____Not at all
    _____A little
    _____Somewhat
    _____Quite a bit
    _____Very much

15. How often do you base your actions on
    your own judgments and evaluations?
    (Check one).

    _____Almost always
    _____Very often
    _____Often
    _____Sometimes
    _____Rarely

PART II

   This part consists of 12 statements concerning your school.

Instructions

    1. Read each statement carefully.

    2. Indicate your reaction to each statement by choosing the
       response which most satisfactorily describes the way you
       feel about the statement.

    3. Circle the letter which corresponds to your choice.

       Possible responses   A. - strongly agree

                            B. - agree

                            C. - undecided

                            D. - disagree

                            E. - strongly disagree

16. Pupils often are given the opportunity to
    express their ideas about how the school
    ought to be run.   A   B   C   D   E

17. The school experiences of pupils are
    controlled by plans devised by others.   A   B   C   D   E

18. The school principal is really interested
    in all the pupils in this school.   A   B   C   D   E

PART II – continued

Possible responses

A. – strongly agree

B. – agree

C. – undecided

D. – disagree

E. – strongly disagree

19. In this school pupils can complain to the principal and be given a fair hearing.　　　　A B C D E

20. Schools are run by others and there is little that pupils can do about it.　　　　A B C D E

21. The teachers will not listen to pupil complaints about unfair school rules.　　　　A B C D E

22. In discipline cases the pupil's explanation of the circumstances is carefully weighed by the school authorities before punishment is decided upon.　　　　A B C D E

23. There really isn't much use complaining to the teachers about the school because it is impossible to influence them anyway.　　　　A B C D E

24. In this school the teachers are the rulers and the pupils are the slaves.　　　　A B C D E

25. Pupils have adequate opportunities to protect themselves when their interests conflict with the interests of those who run the school.　　　　A B C D E

26. Pupils in this school are given considerable freedom in planning their own programs to meet their future needs.　　　　A B C D E

27. Pupils' ideas about how this school should be run are often adopted in this school.　　　　A B C D E

The end

Thank you very much for your cooperation.

IMPORTANT – HAVE YOU ANSWERED EVERY ITEM?

A P P E N D I X   G

VALIDATION INSTRUMENTS

ROTTER'S INTERNAL-EXTERNAL CONTROL SCALE
VROOM'S NEED FOR INDEPENDENCE SUBSCALE
KOLESAR'S POWERLESSNESS SUBSCALE

ROTTER'S INTERNAL-EXTERNAL CONTROL SCALE

1. a. Children get into trouble because their parents punish them too much.
   b. The trouble with most children nowadays is that their parents are too easy with them.

2. a. Many of the unhappy things in people's lives are partly due to bad luck.
   b. People's misfortunes result from the mistakes they make.

3. a. One of the major reasons why we have wars is because people don't take enough interest in politics.
   b. There will always be wars, no matter how hard people try to prevent them.

4. a. In the long run people get the kind of respect they deserve in this world.
   b. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.

5. a. The idea that teachers are unfair to students is nonsense.
   b. Most students don't realize the extent to which their grades are influenced by accidental happenings.

6. a. Without the right breaks one cannot be an effective leader.
   b. Capable people who fail to become leaders have not taken advantage of their opportunities.

7. a. No matter how hard you try some people just don't like you.
   b. People who can't get others to like them don't understand how to get along with others.

8. a. Heredity plays the major role in determining one's personality.
   b. It is one's experiences in life which determine what they are like.

9. a. I have often found that what is going to happen will happen.
   b. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.

10. a. In the case of the well prepared student there is rarely if ever such a thing as an unfair test.
    b. Many times exam questions tend to be so unrelated to course work that studying is really useless.

11. a. Becoming a success is a matter of hard work, luck has little or nothing to do with it.
    b. Getting a good job depends mainly on being in the right place at the right time.

12. a. The average citizen can have an influence in government decisions.
    b. This world is run by the few people in power, and there is not much the little guy can do about it.

13. a. When I make plans, I am almost certain that I can make them work.
    b. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.

14. a. There are certain people who are just no good.
    b. There is some good in everybody.

15. a. In my case getting what I want has little or nothing to do with luck.
    b. Many times we might just as well decide what to do by flipping a coin.

16. a. Who gets to be the boss often depends on who was lucky enough to be in the right place first.
    b. Getting people to do the right thing depends upon ability, luck has little or nothing to do with it.

17. a. As far as world affairs are concerned most of us are victims of forces we can neither understand nor control.
    b. By taking an active part in politics and social affairs the people can control world events.

18. a. Most people don't realize the extent to which their lives are controlled by accidental happenings.
    b. There is really no such thing as "luck".

19. a. One should always be willing to admit mistakes.
    b. It is usually best to cover up one's mistakes.

20. a. It is hard to know whether or not a person really likes you.
    b. How many friends you have depends on how nice a person you are.

21. a. In the long run the bad things that happen to us are balanced by the good ones.
    b. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.

22. a. With enough effort we can wipe out political corruption.
    b. It is difficult for people to have much control over the things politicians do in office.

23. a. Sometimes I can't understand how teachers arrive at the grades they give.
    b. There is a direct connection between how hard I study and the grades I get.

24. a. A good leader expects people to decide for themselves what they should do.
    b. A good leader makes it clear to everybody what their jobs are.

25. a. Many times I feel that I have little influence over the things that happen to me.
    b. It is impossible for me to believe that chance or luck plays an important role in my life.

26. a. People are lonely because they don't try to be friendly.
    b. There's not much use in trying too hard to please people, if they like you, they like you.

27. a. There is too much emphasis on athletics in high school.
    b. Team sports are an excellent way to build character.

28. a. What happens to me is my own doing.
    b. Sometimes I feel that I don't have enough control over the direction my life is taking.

29. a. Most of the time I can't understand why politicians behave the way they do.
    b. In the long run the people are responsible for bad government on a national as well as on a local level.

VROOM'S NEED FOR INDEPENDENCE SUBSCALE

1. How important is it for you to feel that you can run your life without depending upon other people who are older and more experienced than you?

2. How often do you find that you can carry out other people's suggestions without changing them any?

3. How much humility do you think you should show to those whom you respect and admire?

4. How much respect do you think should be shown to a judge even outside his courtroom?

5. How much do you usually want the person who is in charge of a group you are in to tell you what to do?

6. When you have a problem do you like to think it through yourself without help from others?

7. How much respect do you think people should show to policemen?

8. How hard do you find it to disagree with others even in your own thinking?

9. How much do you think that the leaders of organizations to which you belong have the right to expect certain things from you to which you should conform?

10. How much do you feel that you are not as good in most things as people who are older and more experienced than you?

11. In school how much did you dislike teachers who had forceful and dominant personalities?

12. If you have thought about something and come to a conclusion, how hard is it for someone else to change your mind?

13. How much do you feel that officers of the law should tell people what to do rather than ask them?

14. If you were to go to night school under which of these conditions would you learn best?

15. How much do you dislike being told to do something by a superior that is contrary to your wishes?

KOLESAR'S POWERLESSNESS SUBSCALE

1. The school principal is really interested in all pupils in this school.

2. In this school pupils can complain to the principal and be given a fair hearing.

3. The school experiences of pupils are controlled by plans devised by others.

4. Schools are run by others and there is little that pupils can do about it.

5. Pupils often are given the opportunity to express their ideas about how the school ought to be run.

6. The teachers will not listen to pupil complaints about unfair school rules.

7. In discipline cases the pupil's explanation of the circumstances is carefully weighed by the school authorities before punishment is decided upon.

8. There really isn't much use complaining to the teachers about the school because it is impossible to influence them anyway.

9. In this school the teachers are the rulers and the students are the slaves.

10. Pupils have adequate opportunities to protect themselves when their interests conflict with the interests of those who run the school.

11. Pupils in this school are given considerable freedom in planning their own programs to meet their future needs.

12. Pupils' ideas about how the school should be run are often adopted in this school.

A P P E N D I X   H

MEAN SCORES ON FOUR FACTORS AND TOTAL n INDEPENDENCE
FOR STUDENTS GROUPED BY VARIOUS PREDICTORS — SCHOOL *A*

TABLE H

MEAN SCORES ON FOUR FACTORS AND TOTAL n INDEPENDENCE
FOR STUDENTS GROUPED BY TEACHER

Factor		Teacher									
		A	B	C	D	E	F	G	H	I	J
I.	Curriculum Inputs	47.94	56.28	52.55	50.75	49.32	48.72	50.08	49.97	48.66	45.67
II.	Physical Movement	48.91	48.78	50.61	48.13	50.48	49.98	52.90	49.62	48.40	53.19
III.	Workload Dimensions	44.62	55.03	46.83	54.41	49.49	46.74	48.89	50.42	50.20	54.25
IV.	Work Interactions	46.75	53.46	50.00	50.29	47.68	51.27	53.23	53.65	48.28	47.75
Total Need for Independence		188.23	213.55	199.99	203.58	196.98	196.70	205.10	203.67	195.54	200.86

TABLE I

MEAN SCORES ON FOUR FACTORS AND TOTAL n INDEPENDENCE
FOR STUDENTS GROUPED BY SEX

Criterion Variable	Sex	
	Male	Female
I. Curriculum Inputs	50.37	49.68
II. Physical Movement	49.17	50.71
III. Workload Dimensions	50.51	49.56
IV. Work Interactions	49.74	50.23
Total Need for Independence	199.80	200.17

TABLE J

MEAN SCORE ON FOUR FACTORS AND TOTAL n INDEPENDENCE
FOR STUDENTS GROUPED BY GRADE

	Criterion Variable	Grade		
		Ten	Eleven	Twelve
I.	Curriculum Inputs	48.48	49.52	52.09
II.	Physical Movement	50.61	49.99	49.37
III.	Workload Dimensions	50.15	50.38	49.47
IV.	Work Interactions	50.76	49.31	49.90
	Total Need for Independence	200.00	199.18	200.83

TABLE X

MEAN SCORES ON FOUR FACTORS AND TOTAL n INDEPENDENCE
FOR STUDENTS GROUPED BY AGE

			Age	
	Criterion Variable	14 years and under	15 – 16 years	17 years and over
I.	Curriculum Inputs	47.08	49.46	52.12
II.	Physical Movement	49.04	50.73	48.71
III.	Workload Dimensions	51.97	49.70	50.02
IV.	Work Interactions	55.25	49.39	49.66
	Total Need for Independence	203.35	199.28	200.50

TABLE L

MEAN SCORES ON FOUR FACTORS AND TOTAL n INDEPENDENCE
FOR STUDENTS GROUPED BY PROGRAM

			Program	
	Criterion Variable	Business Education	Matriculation	Combined or General
I.	Curriculum Inputs	47.62	51.15	46.66
II.	Physical Movement	50.11	49.64	51.71
III.	Workload Dimensions	48.63	49.82	52.32
IV.	Work Interactions	46.66	50.89	48.97
	Total Need for Independence	193.02	201.51	199.66

TABLE M

MEAN SCORES ON FOUR FACTORS AND TOTAL n INDEPENDENCE
FOR STUDENTS GROUPED BY AVERAGE MARK

	Criterion Variable	Average Mark - Percentage			
		70% or higher	60-69%	50-59%	49% or lower
I.	Curriculum Inputs	50.74	51.45	47.76	48.13
II.	Physical Movement	50.13	50.23	49.86	49.06
III.	Workload Dimensions	50.75	49.41	50.42	49.06
IV.	Work Interactions	52.40	49.64	48.24	49.38
	Total Need for Independence	204.03	200.73	196.28	195.63

TABLE N

MEAN SCORES ON FOUR FACTORS AND TOTAL n INDEPENDENCE
FOR STUDENTS GROUPED BY ENGLISH MARK

		English Mark - Percentage			
	Criterion Variable	70% or higher	60-69%	50-59%	49% or lower
I.	Curriculum Inputs	51.51	51.21	47.86	47.82
II.	Physical Movement	50.58	50.24	49.94	48.39
III.	Workload Dimensions	51.32	50.13	49.12	48.96
IV.	Work Interactions	52.15	49.40	49.31	49.27
	Total Need for Independence	205.58	200.98	196.23	194.45

TABLE O

MEAN SCORES ON FOUR FACTORS AND TOTAL n INDEPENDENCE
FOR STUDENTS GROUPED BY AMOUNT OF ABSENTEEISM

	Criterion Variable	Absenteeism – classes missed		
		No classes missed	One to two classes	Three or more
I.	Curriculum Inputs	49.46	52.19	48.23
II.	Physical Movement	50.13	50.33	49.12
III.	Workload Dimensions	48.99	51.10	51.34
IV.	Work Interactions	50.17	49.35	50.48
	Total Need for Independence	198.75	202.97	199.15

Note.– Absenteeism was measured by asking the student how many
English classes he had missed, more or less deliberately,
since the beginning of term.

TABLE P

MEAN SCORES ON FOUR FACTORS AND TOTAL n INDEPENDENCE
FOR STUDENTS GROUPED BY FUTURE PLANS

	Criterion Variable	Graduate-find work	Junior college-Technical school	University
I.	Curriculum Inputs	46.49	50.11	51.28
II.	Physical Movement	50.91	49.85	50.04
III.	Workload Dimensions	49.82	52.37	49.83
IV.	Work Interactions	48.48	48.73	51.07
	Total Need for Independence	195.71	201.06	202.23

TABLE Q

MEAN SCORES ON FOUR FACTORS AND TOTAL n INDEPENDENCE FOR STUDENTS GROUPED BY PERIOD OF SCHOOL ATTENDANCE

	Criterion Variable -	Period of School Attendance		
		Less than one year	One to two years	Two years or more
I.	Curriculum Inputs	49.02	49.85	51.46
II.	Physical Movement	50.69	49.44	49.80
III.	Workload Dimensions	50.29	50.63	48.97
IV.	Work Interactions	51.00	49.29	49.60
	Total Need for Independence	201.00	199.11	199.82

TABLE R

MEAN SCORES ON FOUR FACTORS AND TOTAL n INDEPENDENCE
FOR STUDENTS GROUPED BY ASPIRATION LEVEL

	Criterion Variable	Same mark– 5% higher	6 – 10% higher	11% or more higher
I.	Curriculum Inputs	49.54	49.89	50.46
II.	Physical Movement	50.86	49.41	49.86
III.	Workload Dimensions	51.22	49.53	49.46
IV.	Work Interactions	50.08	49.68	50.23
	Total Need for Independence	201.69	198.52	200.02

Note.– Aspiration level in English was measured by asking the
student how much higher his mark would have been if
he had done his best.

TABLE S

MEAN SCORES ON FOUR FACTORS AND TOTAL n INDEPENDENCE
FOR STUDENTS GROUPED BY SOCIOECONOMIC STATUS

| | Criterion Variable | Socioeconomic Status | | | | |
		Low	Below Average	Average	Above Average	High
I.	Curriculum Inputs	49.05	47.48	49.61	50.95	53.33
II.	Physical Movement	48.50	50.32	51.22	49.90	49.13
III.	Workload Dimensions	50.17	50.14	49.79	50.32	49.14
IV.	Work Interactions	49.20	48.81	49.74	50.36	52.25
	Total Need for Independence	196.92	196.75	200.36	201.53	204.12

Note.– Socioeconomic status was a combined index obtained for
each student by adding the ratings assigned for his
father's occupation, his mother's education, and his
father's education.

TABLE T

MEAN SCORES ON FOUR FACTORS AND TOTAL n INDEPENDENCE
FOR STUDENTS GROUPED BY ENGLISH COURSE

	Criterion Variable	English 30	English 33	English 20	English 23	English 10	English 13
I.	Curriculum Inputs	53.20	47.94	49.79	47.76	49.34	45.67
II.	Physical Movement	49.53	48.91	50.17	48.29	49.99	53.19
III.	Workload Dimensions	50.67	44.62	50.39	49.50	49.12	54.25
IV.	Work Interactions	50.68	46.74	49.56	47.64	51.69	47.75
Total Need for Independence		204.08	188.22	199.92	193.19	200.14	200.86

Note.– Courses numbered 30, 20, and 10 are normally taken by
matriculation students; the other courses are taken only
by non-matriculation students. English 30 and 33 are
grade 12 courses; English 20 and 23 are grade 11; and
English 10 and 13 are grade 10.