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Motivating factors influencing students who attain valedictorian or salutatorian status

Ahnert, Sharon Fitzpatrick, Ph.D.

The University of Arizona, 1990
MOTIVATING FACTORS INFLUENCING STUDENTS WHO ATTAIN VALEDICTORIAN OR SALUTATORIAN STATUS

by

Sharon Fitzpatrick Ahnert

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A Dissertation Submitted to the Faculty of the DIVISION OF TEACHING AND TEACHER EDUCATION in Partial Fulfillment of the Requirements For the Degree of DOCTOR OF PHILOSOPHY WITH A MAJOR IN SECONDARY EDUCATION in the Graduate College THE UNIVERSITY OF ARIZONA

1990
As members of the Final Examination Committee, we certify that we have read the dissertation prepared by Sharon Fitzpatrick Ahnert entitled MOTIVATING FACTORS INFLUENCING STUDENTS WHO ATTAIN VALEDICTORIAN OR SALUTATORIAN STATUS and recommend that it be accepted as fulfilling the dissertation requirement for the Degree of Doctor of Philosophy.

Final approval and acceptance of this dissertation is contingent upon the candidate's submission of the final copy of the dissertation to the Graduate College.

I hereby certify that I have read this dissertation prepared under my direction and recommend that it be accepted as fulfilling the dissertation requirement.

Donald C. Clark
Dissertation Director

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ABSTRACT

This study was undertaken to explore the motivational factors which influence students who attain valedictorian or salutatorian status.

The study employed quantitative data to assess differences between the valedictorian and salutatorian and the top quartile of the class in one school in the Midwest in the categories of absences and test scores and qualitative data based on the interviews of the two top students from the last 19 to investigate participants' views on intrinsic and extrinsic motivational factors.

For the quantitative portion of the study, raw data consisting of MPA (Mark Point Average), days absent, and local percentile on standardized achievement tests were collected from students' cumulative record files. The null hypothesis that the mean number of absences for the Valedictorians/Salutatorians and Upper Quartile students was equal was rejected at the .05 level of significance. The null hypothesis that the mean Normal Curve Equivalent test scores for the Valedictorians/Salutatorians and Upper Quartile students were equal was rejected at the .001 level of significance.

For the qualitative section, interviews were conducted with the top two students from each of the 19 years of the study. A common coding system was developed, and information was coded using the categories. The protocol included questions on general motivation, parents, teachers, peers, school climate, and personal feelings regarding the attainment of academic success. Additional questions were posed on choice of college, present career, and post-high school motivators.
The qualitative section of the research revealed that the high achievers expressed an innate desire to learn and to use their innate drive to get a job done. In addition to intrinsic motivation, extrinsic factors were explored. Parental interest, encouragement, expectations, and the provision of a nurturing home environment were noted. Academic, inspirational, interpersonal, and managerial qualities of teachers were cited. Most high achievers questioned indicated that their friends were academically oriented. In terms of the acceptance aspect of school climate, the population experienced belongingness and nonacceptance. The academic climate was explored, emphasizing praise and reward. Interviewees additionally spoke of their personal feelings when academically successful, post secondary education, career status, and current motivators.
CHAPTER I

THE PROBLEM

Introduction

Whereas all students ostensibly go to school to learn, some students view school as a place of socialization or merely as an endurance test. What motivates those students who achieve well academically, distinguishing them from the educational drifters or from other students who work hard but do not do as well? Combs (1965) speaks of the nature of motivation as "An insatiable need for the maintenance and enhancement of the self; not the physical self--but the phenomenal self, of which the individual is aware, his self concept" (p. 8). Vroom (1964) provides an interpretation of the essential meaning of the term motivation when he states that there are two somewhat different kinds of questions that are typically dealt with in discussions of motivation. The first question deals with the arousal or energizing of the organism; the second involves the direction of behavior or the form (emphasis in original) the activity will take. The formulation of subsequent motivational theories revolves around these two factors.

Various motivational theories have been propounded through the years, ranging from the stimulus--response theory of Pavlov (1927) to the current work of Brophy (1987), centering on strategies for promoting extrinsic and intrinsic motivation. In concert with these theories, various specific forces play prominently in the literature regarding high achieving students. These include parents, teachers, peers, and school climate.

In regard to parents, three conditions have been described as leading the developing individual to both value self and to regard self as an object of
worth. They are parental warmth, respectful treatment, and clearly defined limits whereby the child understands that the parents care what happens to him/her through parental demands and expectations for success (Coopersmith, 1967). Purkey (1970) argues that the critical factor in development is how children interpret their parents' view of them. He states: "If parents wish to provide a home environment which will build positive self-regard in children, then they must give consideration to the attitudes they express toward their children and be sensitive to how these attitudes are being perceived" (p. 36). Henderson (1988) reports that according to the National Committee for Citizens in Education (NCCE), if school improvement efforts are judged successful when they raise student achievement, the research strongly suggests that involving parents can make a critical differences.

A second powerful influence on the lives of students is the teacher. Purkey (1970) contends that the ways significant others evaluate the student directly affect the student's conception of academic ability; this in turn puts limits on success in school. Purkey states: "Teachers, in their capacity of significant others, need to view students in essentially positive ways and hold favorable expectations" (p. 47). He holds that when the teacher believes that students can achieve, the students appear to be more successful. Tauber (1985) emphasizes that whereas teachers do not possess complete control over children's learning, the potential for substantial teacher power over the learning experiences exists. He discusses five categories of power—coercive, reward, legitimate, referent, and expert—and relates them to selected learning outcomes. Deci (1986) states that the way teachers deal with students can greatly affect learning. His studies measure the intrinsic motivation and self-
esteem of children with both supportive and controlling teachers and found that students with supportive teachers scored higher in each category than those with controlling teachers.

In addition to parents and teachers, the impact of peers upon academic outcomes is also cited in the research. In their study to determine whether improved self-concept results from the expectations and evaluations held by significant others as perceived by the students, Brookover, Erickson, and Joiner (1967) conclude: "The hypothesis that students' perceptions of the evaluations of their academic ability by others (teachers, parents, and friends) are associated with self concepts of academic ability was confirmed" (p. 110). Wood (1985) also includes peer influences as one of the four main influences on an adolescent's motivation for learning. Brophy (1986) advocates building peer interaction opportunities into whole-class activities as a learning device.

Wood (1985) cites the importance of school climate, writing that program success is based on providing students with an environment conducive to active learning. Lezotte (1984) comments that effective schools research relates climate to productivity, that is, a businesslike atmosphere, commitment to achievement of goals, and to student engagement in academic tasks. In her review of school climate, Anderson (1982) has found that the most recurring attitude associated with climate and student outcomes is the level of expectation that teachers and administrators hold for each other and especially for students. Anderson cites Rosenthal and Jacobson (1968, p. 174) who define an expectation as a "self-fulfilling prophecy." She states that without exception the research portrays the high-achieving school as one in which the staff manifests attitudes of confidence that students will be able to succeed academically. It
can be inferred that the teacher's handling of these environmental factors would in turn be a mediating influence in shaping classroom learning.

Grades also are seen as a motivator. Holt (1987) emphasizes that less pressure for grades and more hard work for learning and personal satisfaction would be better for students. Robbins (1983) found that in school-related athletic activities, grading and awards systems may decrease the strength of internal motivation and strengthen the need for external rewards. Brophy (1987) argues that teachers can capitalize on intrinsic motivation by planning academic activities that students will engage in willingly due to interest in the content or enjoyment of the task.

The concepts of locus of control and attribution theory also relate to studenting. Boekarts (1986), in writing of causal attributions, discusses the fact that success-oriented individuals prefer tasks and activities with an intermediate level of difficulty which they perceive as stable and controllable. She contends that this attributional bias results in a maximal experience of positive feelings and in a minimal experience of negative feelings, giving one a realistic success expectancy on future learning occasions.

The review of the literature indicates that motivation deals with both energizing the student and the direction of behavior the energy will take. Parents, teachers, peers, and school climate have been found to be pivotal forces affecting motivation. Other intrinsic and extrinsic motivators and attributions likewise have an effect on student performance.

In that a search of the literature reveals no empirical data on the motivational factors that have been the impetus for those who have ultimately become class valedictorians or salutatorians, this research will provide a study
of unusually high-achieving students to determine how the above mentioned factors work together to affect student motivation.

**Purpose of the Study**

In order to study factors affecting student motivation, this study focused on students who ultimately became class valedictorians or salutatorians.

The purpose of this study was to explore the motivational factors which ultimately accounted for student academic success so that educators can key in on these elements, thus encouraging more students to reach their own pinnacles of academic success.

This paper then explored the motivational factors influencing those students who were ranked first and second in their respective classes. It explored the question of whether students were self-motivated or whether they were mainly influenced by parents, teachers, peers, or school climate. Were the aforementioned indeed motivating factors? How important were intrinsic and extrinsic motivational factors?

**Statement of the Problem**

This study examined the motivational factors affecting students who ultimately became class valedictorians or salutatorians. It explored motivational theories as well as extrinsic motivators, namely parents, teachers, peers, and school climate. The factors of intrinsic motivation and attribution theory were also addressed.
Research Questions

The questions examined were:

1. Do the school records of the valedictorian and the salutatorian differ from those of other class members with respect to standardized test scores and absenteeism?

2. What motivating forces influence students to do well in school such that they attain valedictorian or salutatorian status?

Research Approach

In order to examine these questions, a combination of quantitative and qualitative approaches were employed. Records of 21 valedictorians and 18 salutatorians of one secondary school were examined to obtain information on such factors as mark point average, standardized test findings, and absenteeism. In addition, these people were contacted and interviewed in depth about their experiences during and following high school.

While this retrospective approach yielded important and useful information, there were a number of limitations:

1. The study was limited to graduates of a single midwestern high school.

2. The time span of the study was restricted to the 19 years from 1971 through 1989.

3. The qualitative study was limited by the ethnographer's capacity to perceive and to understand the relationships and behaviors detailed by the various respondents to the interview schedule.
4. The study was limited to the ability of the interviewees to accurately recall experiences incurred during their elementary and secondary schooling experiences.

5. Many of the studies cited in the review of the literature have limited utility by virtue of both age and research techniques. Some of the studies have historical significance only and should be viewed in that context.

6. Also, the data herein statistically presented was subject to the limitations inherent in the statistical techniques used.

7. As used in this paper, the definition of terms has limited meaning. Any conclusions must be drawn with the full awareness that there are other definitions equally complete and/or accurate.

**Definition of Terms**

The following definitions will apply throughout this study:

**Valedictorian:** The student having the highest academic rank in a graduating class as cited on school records.

**Salutatorian:** The student having the second highest academic rank in a graduating class.

**Advanced Placement Course:** High school course which qualifies student for obtaining college credit if certain criteria are met.

**Advanced Class:** Student-selected course which follows an accelerated curriculum. The course content is presented in more depth in that the enrollees are primarily college-bound.
In the 12 point system, the following computations apply: A=12 points; A-=11 points; B+=10 points; B=9 points; B-=8 points; C+=7 points; C=6 points; C-=5 points; D+=4 points; D=3 points; D-=2 points; E=1 point; F=0 points.

Summary

The information presented in this introduction is concerned with factors influencing students who do well in school such that they attain valedictorian or salutatorian status. In that no known studies exist on a retrospective basis of this phenomena, it was thought that research was warranted to explore this subject.
CHAPTER 2
REVIEW OF THE LITERATURE

Introduction

What is motivation? One definition (Hoy & Miskel. 1978) includes the following elements: "The complex of forces, drives, needs, tension states, or other internal psychological mechanisms that start and maintain activity toward the achievement of personal goals" (p. 96). In dealing with a study of high achievers and what factors led to attainment of high academic status, a focus on motivation to learn is more appropriate. According to Boekarts (1986), motivation to learn refers to the learner's resolve or intention to put in some effort to perform a learning task. This motivation is a momentary intention which may not be very resistant to distraction or frustration. Brophy (1987), on the other hand, defines student motivation to learn as a tendency to find academic activities meaningful and worthwhile and to try to derive the intended academic benefits from them.

Why do some students find meaningfulness and worthwhileness from academics and thus derive benefit? Why are they motivated to do well in school? Let us explore several motivational theories to help answer these questions.

Motivational Theories

Pavlov

Respondent conditioning, an early theory of motivation, was developed by Ivan Pavlov while working at the University of Moscow. Pavlov (1927) relates that the physiologist must take his own path where a trail has already
been blazed for him. Pavlov's trail was blazed for him by Descartes who evolved the idea of the reflex. Pavlov states:

Starting from the assumption that animals behaved simply as machines, he (Descartes) regarded every activity of the organism as a necessary reaction to some external stimulus and the response being made through a definite nervous path: and this connection, he stated was the fundamental purpose of the nervous structures in the animal body (p. 4). Thus commenced the origin of the stimulus--response theory. Based on Descartes' premise, Pavlov three centuries later ascertained that the dogs in his laboratory could be conditioned to respond in a certain fashion, depending upon the situation.

In conducting his experiments, Pavlov placed the whole animal under a limited number of rigidly defined conditions, thus studying the reflexes independently of one another. In the first of three demonstrations, the dog's salivary glands remained quite inactive so long as no special stimulus was applied. However, when the sounds from a beating metronome were heard by the dog, a salivary secretion began after nine seconds, and in 45 seconds eleven drops had been secreted. Thus the sound of the metronome, a stimulus quite alien to food, activated the salivary gland. Pavlov (1927) contends that it is obvious that the underlying principle of this activity is signalization. He found that the sound of the metronome provides the signal for food, and the animal reacted to the signal in the same way as if it were food. No distinction could be observed between the effects produced on the animal by the sounds of the beating metronome and showing it real food.
In a second demonstration, food was shown to the animal, with the salivary secretion beginning after five seconds; six drops were collected in the course of 15 seconds. Pavlov states that the effect was the same as that observed with the sounds of the metronome, with a case of signalization being apparent and being due to the activity of the hemispheres.

In the third demonstration, food was suddenly introduced into the dog's mouth, with secretion beginning in one to two seconds. In this instance, the secretion was brought about by the physical and chemical properties of the food acting upon receptors in the mucous membrane of the mouth and tongue. The response was purely reflex. Pavlov (1927) asserts: "This comparatively simple experiment explains how a decerebrate dog can die of starvation in the midst of plenty, for it will only start eating if food chances to come into contact with its mouth or tongue" (p. 23).

Pavlov goes on to explain that food, through its chemical and physical properties, evokes the salivary reflex in every dog from birth, whereas the signal reflex is built up gradually in the course of the animal's own existence. Man too has the path of the inborn reflex completed at birth, but, according to Pavlov (1927), "the path of the signaling reflex has still to be completed in the higher nervous centres" (p. 25). Pavlov terms this new group of reflexes conditioned reflexes or acquired reflexes and states:

Conditioned reflexes are a phenomena of common and widespread occurrence: their establishment is an integral function in everyday life. We recognize them in ourselves and in other people or animals under such names as 'education,' 'habits,' and 'training,' and all of these are
really nothing more than the results of an establishment of new nervous connections during the post-natal existence of the organism (p. 26).

To establish new conditioned reflexes Pavlov relates that any external stimulus which is to become the signal in a conditioned reflex must overlap in point of time with the action of an unconditioned stimulus. He additionally states that the conditioned stimulus should begin to operate before the unconditioned stimulus comes into action.

What is the relationship between Pavlov's dogs and motivating students in a classroom? Shaughnessy (1984) tells us that teachers want to classically condition their students into producing memorable work and a creative product; the environment should thus provide that stimulation that may condition a motivating response. The teachers must come to a determination as to what conditions are most facilitative and amenable to creative work. Shaughnessy (1984) states: "Brainstorming, relaxation, dealing with improbabilities and fluencies may all be antecedent conditions. Role playing and small group work may further assist in the creative process" (p. 23).

Thus dating back to Descartes and Pavlov and arriving at the modern day classroom, respondent conditioning can be cited and moreover can be used as a motivating influence.

**Skinner**

Motivational overtones are also seen in the writings of B.F. Skinner of Harvard University. Skinner is widely known for his reinforcement theory. Carpenter (1974) relates that the principle of reinforcement can be stated as follows: "When a given act is followed closely by a reinforcer (reward), the
organism tends to increase the frequency of that acting under the same or similar conditions" (p. 17). Carpenter says that the reinforcement may be positive when an animal or person does something that results in the presentation of a positive stimulus or negative when a person learns that he can escape from an uncomfortable situation by performing some act. He goes on to tell that the sum and substance of Skinnerian psychology is that rewards, threats and punishments shape the patterns of behavior that make up human personalities. And, according to Carpenter, "the most important fact is that a person's own behavior brings consequences that change his action. In addition, consequences arise in the environment; hence, the environment influences or controls changes in behavior" (p. 10).

A second major notion of Skinnerian psychology as cited by Carter (1974) is contingency which refers to the proposition that a reward can only occur if some act precedes it; in other words, a contingency of reinforcement is a sequence of events in which some key is essential before the reward can be experienced.

Also central to Skinnerian psychology is the concept of operant conditioning. According to Rachlin (1970), the term was coined by Skinner ...who first proposed that instrumental behavior consists of emitted acts, which are classified according to their effect on the environment (as opposed to classically conditioned behavior, which consists of elicited acts, which are classified according to the stimulus that elicits them). (p. 89)

According to Reynolds (1968), the practitioner of operant conditioning scarcely mentions motivation, as it has come to refer only to those conditions
that render a given event reinforcing at a given time. Reynolds, in speaking of experiments involving pigeons, states:

Since the emphasis in operant conditioning is on the effects of reinforcement, these motivational conditions have become mere technological details. The pigeon, for example, is routinely maintained at eighty per cent of its free-feeding weight, because this is a sufficient motivational condition to render food reinforcing. (p.127)

Reynolds discusses when and why a reinforcer is reinforcing, saying that the problem is often complicated for the human organism. For example, the behavior of children may be reinforced by a gamut of events, but the reinforcers usually share the troublesome properties of evanescence. He relates: "What is reinforcing at one moment may not be reinforcing a short time later. It is a difficult, although empirical and solvable problem, to find motivational conditions under which reinforcers are not evanescent" (p. 27). In order to solve this problem, two solutions are advanced: to vary the reinforcer continually and to work with experimental sessions so brief that evanescence cannot occur. However, Reynolds contends that these merely by-pass the fundamental motivational problem.

In accord with Reynolds' statement that the practitioner of operant conditioning barely mentions motivation is the following quote by Skinner (1950) wherein he says that an explanation should not appeal to

...events taking place somewhere else, at some other level of observation, described in different terms, and measured, if at all, in different dimensions...when we attribute behavior to a neural or mental event, real or conceptual, we are likely to forget that we still have the task
of accounting for the neural or mental event. When we assert that an
animal acts in a given way because it expects to receive food, then what
began is the task of accounting for expectancy. The (latter) problem is at
least equally complex and probably more difficult. (pp. 193-194)

Skinnerian philosophy is relevant to the educational arena. Skinner
(1974) states:

...the point of education can be stated in behavioral terms: a teacher
arranges contingencies under which the student acquires behavior
which will be useful to him under other contingencies later on. The
teacher cannot bring enough of the real life of the student into the
classroom to build behavior appropriate to the contingencies he will
encounter later. (p. 184)

Teachers then, according to Skinner (1974), are in a position "to do a
person good" (p. 183) or they can withhold the good to extinguish a behavior.
Such behaviors relate to a deprivation and satiation. In a classroom situation,
as cited in Skinnerian thought, a teacher should be cognizant of deprivation
and satiation and their concomitant reinforcers. Blackwood (1971) contends
that once the reinforcers have been found, two things should be done:

Arrange things so that the scarce reinforcer is contingent upon desired
behaviors so that you will strengthen desired behaviors and extinguish
unwanted behaviors;
Find ways to enrich the environment with the scarce reinforcer so that
children will not be deprived and so will not need to misbehave to get the
reinforcer. (pgs. 6-7)
Blackwood relates that in operant conditioning one attempts to avoid inferred concepts; instead one looks more carefully at the data, the observables, from which the inferences are made. Thus a teacher infers satiation and deprivation from observations of response frequency and time.

Shaughnessy (1984) warns that reinforcement must be chosen with care in that astute, gifted students may have very high standards and may reject what they discern to be empty praise. "Often 'honesty is the best policy' with many gifted students. For others, a five minute break to 'stop and smell the roses' is more reinforcing than M&M's." (p. 5) He posits that the gifted or creative child may be reinforced by the natural consequences of an event, for example the completion of a task. Such a situation reinforces through intrinsic motivation.

**Gestalt Psychology**

A third motivational theory to be cited is Gestalt psychology. According to Rachlin (1970), the predominant approach in psychology in Germany during the early twentieth century was both mental and structural. Gestalt psychology arose in reaction to the structural aspect of German psychology. Arkes and Garske (1982) relate that Max Wertheimer founded Gestalt theory in 1912 and the publication of books by Köhler (1929) and Koffka (1924) more than a decade later introduced the theory to American psychologists.

What is meant by Gestalt theory as introduced to American psychologists? Köhler (1929) states:

In the German language--at least since the time of Goethe, and especially in his own papers on natural science--the noun "gestalt" has two meanings: besides the connotation of "shape" or "form" as a property
of things, it has the meaning of a concrete individual and characteristic entity, existing as something detached and having shape or form as one of its attributes. Following this tradition, in gestalt theorie the word "gestalt" means any segregated whole, and the consideration of gestalt-qualitäten has become a more special side of the gestaltproblem, the prevailing idea being that the same general type of dynamical process which leads to the formation of extended wholes will also explain their specific properties. Here the main stress is laid upon a characteristic type of process. This, indeed, is the most general concept of gestalttheorie: whenever a process dynamically distributes and regulates itself, determined by the actual situation in a whole field, this process is said to follow the principles of gestalttheorie. (pp. 192-193)

Katz (1950) notes definitions of the Gestalt concept by three leading Gestalt psychologists. They are as follows:

1. Köhler (1950) states that 'Gestalt means a separate whole.'
2. Wertheimer's statement reads: 'A Gestalt is a whole whose characteristics are determined, not by the characteristics of its individual elements, but by the internal nature of the whole.'
3. Koffka (1935) says: 'Organization is the process that leads to a Gestalt. The definition would be unsatisfactory if it failed to specify that the organization must be in accord with the law of pregnance. Organization is diametrically opposed to chance distribution' (pp. 91-92).

Arkes and Garske (1982) relate that one of the central tenets of Gestalt psychology is that the whole is greater than the sum of its parts. The Gestalt emphasis on looking at whole field rather than at individual elements is
revealed. A proponent of field theory was Kurt Lewin, a psychologist whose "ideas profoundly influenced the motivational theorists who followed him" (p. 227). According to Arkes and Garske (1982), Lewin was one of the most prominent advocates of Gestalt psychology and was unique among Gestalt theorists in that his theory stressed motivational topics.

Bolles (1967) sums up Lewin's motivational construct in this manner: Lewin asserts that a man's actions are to be explained on the grounds that he perceives particular ways and means of discharging certain tensions. Those activities which an individual perceives as making possible the release of tension will attract him; they will have a positive valence for him and he will experience a force moving him to engage in these activities. Certain other activities may have the opposite effect; they are seen as increasing tension; they are said to have a negative valence, and to generate repulsive forces. (p. 72)

Young (1961) explains Lewin's theory by defining a motive as a state or an event within the individual which initiates or regulates behavior in relation to a goal. Within this framework, the state of desire or need to achieve the goal is motivation in its general sense. "When a need exists there is a tension within the person that persistently motivates behavior. Lewin does not attempt to reduce tension to physical or psychological terms; he thinks of tension psychologically as a cause of action" (p. 482). Young goes on to say that very intense motivation leads to a state of high tension, resulting in the person's efforts being less constructive than they would be under lower levels of tension. If there is a conflict of strong motives, a person may escape from the field of conflict.
Katz (1950) writes of Lewin's viewpoints in relation to educational problems, stating that in Lewinian philosophy teaching would arrive at better and more enduring results if personal participation in activities could be substituted for reward and punishment, which are often unrelated to the subject matter. In order for a child to participate, his activities must be integrated into another more inclusive activity in which he engages gladly and spontaneously. If one activity is embedded in another in this manner, its meaning is changed, and consequently the child's attitude toward it is altered.

Lewin (1936) reveals: "A child that does not like a certain food eats it without more ado if the goblin on the end of the spoon is to be buried, or if the spoon, as a train, is to enter the station of the mouth" (p. 168).

Rusnick (1983) posits that the Gestalt emphasis on underlying structures of knowledge led to an interest in "discovery" methods of teaching. She states: "The notion was that if one discovered something rather than being told or shown it, then the underlying principles rather than just a performance pattern would be acquired" (p. 10). Discovery learning is correlated with the motivated learner.

Arkes and Garske (1982) state three contributions of Lewinian theory. First, Lewin's field theory added a wide range of new topics to the realm of motivation theory. Second, human beings, according to Lewin, evaluate possibilities and assess the relative strengths and valences, inserting the thinking individual between the S (stimulus) and the R (response). Thus, they hold that Lewinian theory is an important ancestor of cognitively oriented contemporary motivational theories. Third, the ideas of Lewin strongly influenced achievement motivation theory.
DeCharms (1976) relates that psychologists have been developing measures of goal-setting, risk-taking and levels of aspiration at least since the early efforts by Lewin and his students. One result of this research has been the finding that motivation, particularly achievement, is related to realistic risk-taking.

Rogers

Carl Rogers' ideas came to the fore in education during the period of romantic radicalism, a time of free schools and open classrooms. According to Glatthorn (1987), Rogers became the chief apostle of nondirective teaching. He states: "...his chief contribution seems to have been his ability to articulate clearly and to practice effectively what open educators and free school advocates could only haltingly express and imperfectly implement" (p. 71).

In *Freedom to Learn* (1969) Rogers gives his view of personal development, tying in with his thesis that the only person who is educated is the person who can adapt and change. In this process of development and adoption, the enhancement of self-concept and self-esteem in youth is facilitated, thus enhancing motivation.

Rogers, an advocate of experiential learning, states in the prologue of *Freedom to Learn* (1969) the qualities of significant or experiential learning. He holds that it has a quality of personal involvement, including both affective and cognitive aspects; it is self-initiated, with the sense of discovery, of reaching out coming from within; it is pervasive, making a difference in the behavior, the attitudes, and perhaps in the personality of the learner; it is evaluated by the learner in that the learner knows whether it is meeting one's needs, and its
essence is meaning, that is the element of meaning to the learner is built into the experience. Arkes and Garske (1982) state that at "at the core of his comprehensive theory is a central assumption about the motivation of behavior: that an inherent tendency provides a consistent impetus toward psychological growth and fulfillment" (p. 112).

Rogers (1969) speaks of the goal of education as being facilitation of change and learning and states that the only man who is educated is the one who has learned how to adapt and change and the one who is cognizant of the fact that only the process of seeking knowledge gives a basis for security.

Rogers (1969) further contends that when learning has been facilitated to the point that a group has been transformed into a community of learners that curiosity is freed and individuals are thereby inclined to pursue their own interests. This kind of environment which facilitates learning "rests upon certain attitudinal qualities which exist in the personal relationship between the facilitator and the learner" (p. 106). The author goes on to expound on qualities which facilitate learning: a realness in the facilitator of learning, that is one who is a person to the students, "not a faceless embodiment of a curricular requirement nor a sterile tube through which knowledge is passed from one generation to the next" (p. 106); prizing, acceptance and trust, and empathetic understanding whereby "the teacher has the ability to understand the student's reactions from the inside, has a sensitive awareness of the way the process of education and learning seems to the student" (p. 111). Such facilitators of learning thus create a climate wherein students are given the freedom and opportunity to learn. Rogers insists that if we are to have individuals who can
live constructively in a changing world then they must become self-starting, self-initiating learners.

What are some methods which facilitators can use to create a classroom climate of freedom? Rogers (1969) holds that, first of all, students should be faced with issues having meaning and relevance to them; resources should be provided, giving students experiential learning relevant to their needs; student contracts can be used, providing a sort of "transitional experience between complete freedom to learn whatever is of interest, and learning which is relatively free but which is within the limits of some institutional demand" (p. 133); division of a group, wherein those students who wish to initiate their own learning may do so and others who wish to learn passively may be instructed and guided; facilitator-learning groups can be devised to divide large classes into small self-motivated groups; the conduct of inquiry method whereby the "teacher sets the stage of inquiry by posing the problems, creating an environment responsive to the learner, and giving assistance to the students in the investigative operations (p. 136)"; simulations whereby students are provided with first hand experience of various processes which occur in real life; programmed learning enabling students to work at their own rate and to gain immediate positive reinforcement; the basic encounter group whereby a leader facilitates expression, helping the group to work toward a meaningful experience; and self-evaluation which Rogers sees as one of the major means by which self-initiated learning becomes also responsible learning. Such techniques of the Rogerian approach give students "the opportunity to learn to be responsibly free" (p. 144).
Rogers sums up his principles of learning which are correlated with how a person learns through the following statements:

1. Human beings have a natural potentiality for learning.
2. Significant learning takes place when the subject matter is perceived by the student as having relevance for his own purposes.
3. Learning which involves a change in self organization—in the perception of oneself—is threatening and tends to be resisted.
4. Those learnings which are threatening to the self are more easily perceived and assimilated when external threats are at a minimum.
5. When threat to the self is low, experience can be perceived in differentiated fashion and learning can proceed.
6. Much significant learning is acquired through doing.
7. Learning is facilitated when the student participates responsibly in the learning process.
8. Self-initiated learning which involves the whole person of the learner—feelings as well as intellect—is the most lasting and pervasive.
9. Independence, creativity, and self-reliance are all facilitated when self-criticism and self-evaluation are basic and evaluation by others is of secondary importance.
10. The most socially useful learning in the modern world is the learning of the process of learning, a continuing openness to experience and incorporation into oneself of the process of change. (pgs. 157-163)

In this learning process, Rogers contends that the facilitator relies upon each student’s desire to implement those purposes having individual meaning, as the motivational force behind significant learning. Thus the facilitator can
assist in helping to use the individual's own drives and purposes as the moving force behind the student's learning. In such an environment, a commitment to learning should occur. Rogers defines commitment as "the emerging and changing total direction of the individual, based on a close and acceptant relationship between the person and all of the trends in his life, conscious and unconscious" (p. 274).

The goal of Rogers' program is to develop a fully-functioning person, that is one able to live fully in and with all of one's feelings and reactions. This will be a creative person. Rogers states: "This person at the hypothetical end point of therapy could well be one of Maslow's 'self-actualizing people'' p. 290).

Subsequent to analyzing Rogers' 1969 work, Glover, Bruning, and Filbeck (1983) suggest several guidelines from Freedom to Learn which can enhance motivation. They advocate the following guidelines: students being given sufficient opportunities to participate in class discussions; teachers allowing students to express their feelings, to have an opportunity to learn about themselves and how to express their feelings; maintaining a classroom climate of acceptance; establishing specific rules for classroom behavior; and emphasizing activities leading to success.

Thus in this approach a positive self-concept can be established in an environment wherein students can adapt and change, and motivation will be enhanced.

Ausubel

The classroom climate can be enhanced by teachers' advising students in advance about upcoming assignments, key concepts, and material they are
The function of the organizer is to provide ideational scaffolding for the stable incorporation and retention of the more detailed and differentiated material that follows in the learning passage, as well as to increase discriminately between the latter material and similar or ostensibly conflicting ideas in cognitive structure. In the case of completely unfamiliar material, an "expository" organizer is used to provide relevant proximate subsumers. These subsumers, which bear a superordinate relationship to the new learning material, primarily furnish ideational anchorage in terms that are already familiar to the learner. In the relatively familiar learning material a "comparative" organizer is used both to integrate new ideas with basically similar concepts in cognitive structure, as well as to increase discriminability between new and existing ideas which are essentially different but confusably similar. (pp. 148-149)

Ausubel goes on to explain that organizers facilitate the learning of factual material more than abstract material due to abstractions containing their own built-in organizers. He advises restricting organizers to the learning of material
which includes a substantial body of differentiated or factual outcome, thereby offering adequate scope for the ideational scaffolding provided by abstract organizers.

Advance organizers are, according to Ausubel (1968), also applicable in the facilitation of the learning and retention of meaningful verbal learning because logically meaningful material becomes incorporated most quickly and stably in cognitive structure insofar as it is subsumable under specifically relevant existing ideas. The author states: "It follows, therefore, that increasing the availability in cognitive structure of specifically relevant subsumers - by implanting suitable organizers - should enhance the meaningful learning of such material" (p. 137).

Ausubel (1968) suggests three different ways in which advance organizers probably facilitate the incorporability of longevity of meaningfully learned material. First of all, advance organizers explicitly draw upon and activate any relevant anchoring concepts which are already in the learner's cognitive structure and make them part of the subsuming entity. Second, they can provide optimal anchorage. Third, they make much of the rote memorization which students resort to unnecessary.

Resnick (1983) concurs with Ausubel's findings and states that advance organizers are advantageous under certain conditions: (1) the learner does not know a sufficient amount about the topic to provide the organizer without assistance; (2) the organizer provides a general structure rather than just a preview; (3) the material itself does not contain the essential organizing and anchoring ideas; (4) the test comes a sufficient time after the exposure to the
organizer and often the learner cannot recall the material verbatim but must instead create an interpreted version.

In addition to his discussion of the use of advance organizers, Ausubel (1968) also deals with the question of whether or not motivation is necessary for learning. He concludes that the weight of evidence indicates that despite motivation's being a greatly significant factor in learning and a facilitator of learning, it is by no means an indispensable condition. Some reasons he advances for his theory pertain to Pavlovian conditioning's merely depending on the temporary contiguity of the conditioned and unconditioned stimuli and learning which occurs incidentally rather than intentionally. He does state, however, that apart from classical conditioning, motivation is probably less indispensable for meaningful reception learning than for any other kind of learning. He further contends that hunger, thirst, pain, and the like infrequently motivate human learning; although material rewards are frequently efficacious, intrinsic (task-oriented) and ego-enhancing motives increasingly dominate the motivational picture with advancing age. According to Ausubel, the trend in research and thinking has been to place more emphasis on the motivational power of such intrinsic and positive motives as curiosity, exploration, activity, manipulation, mastery or competence, and the need for stimulation.

Ausubel (1968) goes on to discuss the fact that a great deal of the facilitating effect of motivation on learning is mediated by an increase in attention. Learning is fostered by merely directing students' attention to aspects of subject matter, regardless of how this is done. In addition to the importance of students' paying attention, Ausubel gives suggestions of ways to increase classroom motivation.
First, motivation is as much an effect as a cause of learning.

Second, always make the objective in a given learning task as explicit as possible.

Third, make full use of, but do not be limited by existing interests and motivations.

Fourth, maximize cognitive drive by arousing intellectual curiosity, by using attention-attracting materials, and by arranging lessons so as to insure ultimate success in learning.

Fifth, set tasks that are appropriate to each learner’s ability level.

Sixth, help pupils to set realistic goals and to evaluate their progress toward these goals by providing tasks that test the limits of their ability and by providing generously informative feedback about degree of goal attainment.

Seventh, take account of developmental changes and individual differences in motivational patterns.

Lastly, make judicious use of extrinsic and aversive motivation, avoiding high levels of each. (p. 393)

**Maslow**

Aububel's motivators may correlate with the writings of Abraham Maslow, who addresses the notion of self-actualization as being central to his system. However, unlike Rogers, Maslow developed an explanatory system which used many constructs which he defined as needs and developed a hierarchal arrangement of their motivational potencies. His theory is more complex than Rogers and provides a greater breadth of analysis. (Arkes and Garske, 1982)
Maslow (1954) writes that the positive theory of motivation which he attempted to frame derives most directly from clinical experience. Maslow states:

This theory is, I think, in the functionalist tradition of James and Dewey, and is fused with the holism of Wertheimer, Goldstein, and Gestalt psychology, and with the dynamicism of Freud and Adler. This fusion or synthesis may be called holistic-dynamic theory. (p. 80)

In his hierarchy of motives, the fundamental constructs in Maslow's theory are the basic needs, with the starting point being the physiological needs which Maslow (1954) classifies as "the most prepotent of all needs" (p. 82). He explains that in the human being who is missing everything in life in an extreme fashion, it is most probable that the major motivation would be the physiological needs rather than any others. Maslow contends that for the chronically and extremely hungry man, Utopia can be defined as a place where there is plenty of food. When man's physiological needs are satiated, they cease to exist as active determinants or organizers of behavior. Such needs become unimportant in the current dynamics of the individual; a new set of needs emerges which Maslow names the safety needs. He contends that the same criteria hold for these needs, but in less degree. Maslow posits that we can attempt to understand safety needs through observation of infants as they do not inhibit the reaction to danger as do adults; even when adults' safety is threatened, they may not show it on the surface. He believes that the healthy, normal, fortunate adult in our culture is largely satisfied in the area of safety needs.
Maslow argues that if both the physiological and the safety needs are quite well gratified, the love and affection and belongingness needs will emerge. The individual will feel greatly the absence of friends, a sweetheart, a wife, or children; the person will hunger for affectionate relations with people in general, for a place in one's group, and will work hard to attain this goal. Maslow stresses that the love needs involve both giving and receiving love.

"All people in our society (with a few pathological exceptions) have a need or desire for a stable, firmly based, usually high evaluation of themselves, for self-respect, or self-esteem, and for the esteem of others" (Maslow, 1954, p. 90). Maslow thus turns his attention to the esteem needs; satisfaction of these needs leads to feelings of self-confidence, worth, strength, capability, and adequacy, that is of being necessary and useful in the world. The most stable and thus the most healthy self-esteem is based on deserved respect from others, not on external face or celebrity and unwarranted adulation.

Despite the above needs being satiated, a new discontent and restlessness will develop unless the person is doing what one is prepared for, that is what one can and must be. Maslow refers to this phenomenon as self-actualization and uses the term to refer to desire for self-fulfillment, that is for the individual to become actualized in what he or she is potentially.

In reference to motivation per se, Maslow contends that most behavior is multimotivated, with any behavior tending to be determined by several or all of the basic needs at once rather than by only one of them.

Bolman and Deal (1986) state that a number of researchers have attempted to assess the validity of Maslow's theory yet have not met with complete success. The problem lies in the fact that it is difficult to measure
people's needs. To test the theory, both the strength and the level of satisfaction of each need must be assessed. The authors contend that even though no one is certain the theory is right, it has still become the most influential single view of motivation in organizations. It has become a myth, with its validity often assumed, despite the lack of convincing empirical evidence.

Educationally speaking, Shaughnessy (1984) feels that the teacher must know the students and be able to determine their present level of functioning, e.g. helping a child feel safe and secure, making a loner feel part of a group, helping a child to belong and to be accepted by peers, recognizing one's achievement, giving approval, and reflecting on a child's competence. Shaughnessy warns that some confident, creative, talented students may not need extensive motivation to actualize their talents, yet the instructor's interest, support, and care may be helpful to their endeavors.

**McClelland**

Risk-taking and especially the concept of achievement motivation is cited in the writings of McClelland. Unlike Lewinian theory, the theory of achievement motivation as posed by McClelland is concerned exclusively with motivation.

McClelland, Atkinson, Clark and Lowell (1953) observed that the thoughts of successful people as expressed in words appeared to be saturated with ideas about competition, about liking to win and hating to lose, and about plans that could lead to success. Subsequently, he asked college students to write short stories and found that those who wrote about competitive situations, planning, working, and winning were indeed different from those who did not.
McClelland describes this difference by the term *achievement motivation*. He holds that the achievement motive, like other forms of human motivation, can best be studied in the realm of fantasy; fantasy is free in the sense that conditions of testing do not place external constraints on the responses that are possible. Based on specified categories, McClelland defines the need to achieve (n Achievement) as the desire to compete with some standard of excellence. An individual's achievement motivation score is the total number of such categories found in one's stories that have a stated achievement goal, with a high score indicating high achievement motivation. McClelland et al. (1953) state:

In general, people with a high achievement imagery index score complete more tasks under achievement orientation, solve more simple arithmetic problems in a timed test, improve faster in their ability to do anagrams, tend to get better grades, use more future tenses and abstract nouns in talking about themselves, set a higher level of aspiration if reality factors are ruled out, tend to recall more incompleted tasks, score higher on the Interest Maturity scale of the Strong Vocational Interest Test, show a slight tendency to recognize achievement related words faster, and so on. In addition, we found evidence for differences between the subjects who are moderately high on the achievement motive index and subjects who were very high. Those who are moderately high appear to be actuated more by a fear of failure as suggested by some Rorschach indicators of anxiety, a tendency to remember completed tasks, and by a resistance to recognizing words connoting failure. Those who score very high, on the other hand, appear to be actuated more by a
hope of success as indicated by greater sensitivity to success words and better recall of incompleted tasks. (p. 327)

McClelland (1961) likewise ties the concept of achievement motivation to economic growth. He states that the first to suggest this phenomenon was Winterbottem who tried to discover how parents or, more particularly mothers, produced a strong interest in achievement in their sons. She found that mothers of the "highs" expected their sons to master earlier such activities as knowing their way around the city, being active and energetic, trying hard for things for themselves, making their own friends and doing well in competition.

Winterbotten's findings (cited in McClelland, 1961, p. 46) correlate with Max Weber's belief that the Protestant Reformation represented a shift toward self-reliance; her study suggests a psychological means by which the historical development described by Weber may have come about.
McClelland holds that it seems reasonable enough to interpret Weber's arguments for the connection between Protestantism and the rise of capitalism in terms of a revolution in the family, leading to sons with strong internalized achievement drives. Studies show that Protestant boys have higher achievement than Catholic boys where other factors are equal. Too, he found that leadership as defined by peer nominations is not associated with high achievement; boys with high achievement were not regarded by their peers as likely to be future leaders. However, boys with high achievement appeared to look more favorably on business occupations. McClelland (1961) also examines sources of achievement and looks at what conditions do change achievement levels. First of all, degree of challenge from the environment is an important determinant of aroused achievement motivation, but its effect is
greatly influenced by initial levels of \( n \) Achievement. Next, early mastery training promotes high \( n \) Achievement, provided it does not reflect generalized restrictiveness, authoritarianism, or rejection by the parents. Third, a very high level of \( n \) Achievement in mothers is likely to lead to lower \( n \) Achievement in their sons. Parents who impose reasonably high standards of excellence at a time when the sons can attain them, who show a willingness to let children attain them without interference, and with real emotional pleasure in achievements short of overprotection and indulgence thereby display moderate child-rearing practices optimal for producing \( n \) Achievement. In contrasting Protestant and Catholic values and child-rearing practices, McClelland forms two conclusions: 1) more traditional Catholics do appear to have some of the values and attitudes that would be associated with lower \( n \) Achievement, and 2) other groups of Catholics exist at least in the United States and Germany which have moved away from some of the traditional values and toward the achievement ethic. He states that while Protestant and Catholic religious labels may have been significantly associated with certain value attitudes, they are not associated in any marked overall way with \( n \) Achievement. Jews, however, who were noted for higher achievement in the past, appear to have had such still at the time *The Achievement Society* was written. Additionally, institutionalized individualistic approaches to God which are usually represented by some strain of positive mysticism should be associated with higher levels of \( n \) Achievement. In general, a person with high \( n \) Achievement wants to be responsible for his own decisions and the very act of making a decision implies some uncertainty as to the outcome.
McClelland (1961) also explores the effects of education on \( n \) Achievement. The research suggests that the crucial period for acquiring \( n \) Achievement probably lies somewhere between the ages of five and ten. Exposure to partial educational experiences—such as young Arabs being placed in a nursery school—which might increase \( n \) Achievement do not appear to be very effective when they are unsupported by an ideological conversion of the total group in which the experience occurs. Thus social influences may raise \( n \) Achievement level if they are accompanied by an ideological conversion but lower it if they lead to mixed or confused loyalties.

Craig, Mehrews, and Clarizio (1975, p. 11) state in commenting on McClelland's work that an appropriate program for the development of achievement motivation should include these characteristics:

1. It must teach participants about the concept of achievement motivation and its importance in becoming successful.
2. It must create strong positive expectations that the student can, will, and should become more achievement oriented.
3. It must demonstrate that the change sought is consistent with the demands of reality, the individual's own makeup, and cultural values.
4. It must bet the student to commit himself to accomplish realistic, practical and specific goals as a consequence of his new motive to achieve.
5. It must have the student record his progress toward the goals to which he/she is committed.
6. It must provide an atmosphere in which the individual feels honestly accepted and respected as a person capable of directing his future.
Shaughnessy (1984) refers to McClelland's (1965) belief that teachers should stress the benefits of achievement motivation and the means by which it can enhance students' self-images. Too, teachers can help students in establishing concrete goals and in keeping a record of progress toward meeting those goals.

**Herzberg**

Whereas Maslow's hierachal theory centered around five basic needs, Herzberg (1966) developed a "two-factor" theory of motivation based on his research with managers and workers. The "hygiene level" includes Maslow's physiological, safety, and belongingness needs; the "motivator" level includes primarily self-esteem and self-actualization.

When queried about his theory's being frequently compared to Maslow's theory of the need hierarchy, Herzberg (1976) responded:

> It is true that Maslow's lower-order needs can be equated in some fashion to my hygiene needs and his higher-order needs in some fashion to what I call the motivation needs of man. However, that is about as much connection between the two theories as is really relevant and pertinent. The attempt to combine the two theories into one, I really believe, is an exercise in the 'creativity of textbook and review writers' (p. 317).

Herzberg's theory (1976, p. 94) regarding the needs of man can be cited in the following figure.
Hygiene needs
Job dissatisfaction <--------Animal avoidance needs--No job dissatisfaction

Motivator needs
No job satisfaction--Human activity needs---->Job satisfaction

Figure 2. Herzberg's theory regarding the needs of man

He explains that the theory was first drawn from an examination of events in the lives of engineers and accountants. Subsequent studies have been done which replicate the original in the field of job attitudes. He further contends that the hygiene factors, maintenance factors, extrinsic factors, job content factors, or dissatisfiers operate on the continuum running from dissatisfaction to no dissatisfaction. Factors which he cites include supervision, co-workers, company policy and administration, status, working conditions, and security. This group also includes salary. Herzberg, (1976) states: "The basic criteria for inclusion as a hygiene factor are that the factors should have short-term effects, contribute more to dissatisfaction, and be cyclical in action—that is, need frequent replenishment" (p. 253). On the other hand, the motivator factors, intrinsic factors or satisfiers, run on a different continuum, ranging from no satisfaction to satisfaction. According to Herzberg, achievement, recognition for achievement, advancement, possibility of growth, work itself, and responsibility are included in this category. He contends that these factors give satisfaction for the human need or psychological growth or competence and act as reinforcement for the generator called motivation.
Based on his research with managers and workers, Herzberg (1976) concludes that three factors determine motivated behavior: what an individual can do, what that individual is permitted to do, and what is reinforced when that individual does something. For example, a person cannot be motivated to do a good job if such a job is unavailable to be done. Herzberg contends that the attitude of motivation impels people to seek appropriate arenas where their ability can be fostered by the ability to put it to use, in the hope that there will be further development of that ability. With regard to behavior's reinforcement and how it can be reinforced, Herzberg gives the following approach:

You did a great job. You show a great deal of talent, and because of that, we are going to use more of your talent. By the way, so you will not be unhappy in your new situation, you are going to receive more money.

(p. 99)

Herzberg believes that people on a job are motivated, first of all, by selecting talent and developing it, and, secondly, by maximizing the use of talent. He concludes that man is an animal suffering not only from physical distress but also from psychological hurt. He requires decent treatment as a preventative from harming himself and the organization. Yet man is equally a human being when he finds positive satisfaction through the exercise of human talents. Thus when allowed to do so, he will give the organization the kind of extra performance essential to long term success.

Long term success, according to Herzberg, is not generated in an organization through what is known as the KITA approach. Herzberg (1976) says: "The surest and least circumlocuted way of getting someone to do something is to kick him in the pants - give him what might be called the KITA"
He elaborates saying that KITA is not motivation and KITA personnel practices such as reducing time spent at work, spiraling wages, fringe benefits, communications, two-way communication, job participation, and employee counseling result only in short term movement. Such factors are dissatisfaction--avoidance or hygiene (KITA) factors and describe job environment. Herzberg states:

Because man is Abraham, and as Abraham he is a human with an overriding goal to use his human talents for psychological growth, which is the source of human happiness. The motivators are the nutrients for psychological growth. It is what man can accomplish that makes him human, and what he can accomplish on the job that will determine his human feelings" (p. 69).

Herzberg (1976, p. 106) posits a formula for motivation:

\[
\text{Motivation} = f \left( \frac{\text{Ability}}{\text{Potential}} ; \frac{\text{Opportunity}}{\text{Ability}} ; \text{What is reinforced} \right)
\]

He explains that the first ratio of ability over potential determines what the individual is capable of doing, contending that the more a person is capable of doing, the more that person can be motivated to do. The second ratio of opportunity over ability determines how much of one’s talent or capability is allowed to come forth on the job.

Herzberg, Mausner, Peterson, and Capwell (1957) report on studies in which information on intelligence test scores or educational achievement is available, stating that they do not show any tendency for job attitudes to vary
with these factors. They do report, however, that some studies reflect lower morale among more educated than among less educated workers. Inconclusive evidence exists on the differences in job morale among workers differing in intelligence test scores. Nevertheless the authors state that there are some data which show that workers with higher IQs display more sharply defined likes and dislikes in the work arena, and that intelligence test scores are highly correlated with morale if the worker's interests are also taken into account.

Although Herzberg's research relates to industry, his principles apply to the educational field as well in the areas of reinforcement, maximizing of talent, and intrinsic satisfiers such as achievement, possibility of growth, and opportunity for advancement.

McGregor

When queried about the work of McGregor, Herzberg (1976) stated: "...McGregor finally provided, by an oversimplified dichotomy, the concepts of managerial styles in such a way that he got the donkey's attention" (p. 319). This dichotomy is cited in McGregor's (1960) Theory X, the traditional view of direction and control, and in Theory Y, which displays the integration of individual and organizational goals.

Three basic premises are inherent to Theory X:

1. The average human being has an inherent dislike of work and will avoid it if he can.

2. Because of this human characteristic of dislike of work, most people must be coerced, controlled, directed, threatened with punishment to get
them to put forth adequate effort toward the achievement of organizational objectives.

3. The average human being prefers to be directed, wishes to avoid responsibility, has relatively little ambition, wants security above all. (McGregor, 1960, pp. 33-34)

This theory implies that managers must actively control and direct subordinates on the job, due to the subordinates being passive, lazy, unambitious, self-centered, opposed to change, and lacking in initiative.

On the other hand, McGregor (1960) posits another theory with respect to the management of human resources known as Theory Y. Some of the assumptions of this theory are as follows:

1. The expenditure of physical and mental effort in work is as natural as play or rest.

2. External control and the threat of punishment are not the only means for bringing about effort toward organizational objectives. Man will exercise self-direction and self-control in the service of objectives to which he is committed.

3. Commitment to objectives is a function of the rewards associated with their achievement.

4. The average human being learns, under proper conditions, not only to accept but to seek responsibility.

5. The capacity to exercise a relatively high degree of imagination, ingenuity, and creativity in the solution of organizational problems is widely, not narrowly, distributed in the population.
6. Under the conditions of modern industrial life, the intellectual potentialities of the average human being are only partially utilized.

(pp. 47-48)

According to McGregor, Theory Y assumes that people will exercise both self-direction and self-control in the achievement of organizational objectives to the degree that they are committed to those objectives. It is evident that this viewpoint is in opposition to Theory X; this different viewpoint is based on Maslow's hierarchy. McGregor contends that one whose needs for safety, association, independence, or status are thwarted is as sick as the person who suffers from a severe dietary deficiency such as rickets, an illness which will result in behavioral consequences. Such behaviors are symptoms of illness, that is of deprivation of one's social and egoistic needs. McGregor (1967) says that the major elements of Theory Y in relation to organizational effectives include an independent team, self control, intrinsic motivation, and the transactional character of influences.

The subject of motivation to work is discussed by McGregor (1966) in relation to the previously mentioned study of Herzberg and his colleagues in fifteen manufacturing plants in the Midwest United States. Generalizations drawn from Herzberg's study offer leads to means of motivating people. McGregor contends that significant intrinsic motivations are properties of the human system, that the human being is not a passive machine requiring extrinsic force to induce motion, and that he is an organic system. He states: "Many powerful forms of motivated behavior can be released by appropriate manipulations of environmental variables" (p. 260). Unless there are
opportunities on the job to satisfy man's higher level needs, people will be deprived, with their behavior reflecting this deprivation.

How then do you motivate people either on the job or in the classroom? McGregor (1967) says that man is an organic, not a mechanical, system who is by nature motivated with inputs of nature being transformed into outputs of behavior. McGregor states: "His (man's) behavior is influenced by relationships between his characteristics as an organic system I and the environment E. [Performance p=f (individual...)]" (p. 11) According to this theory, creating these relationships is a matter of releasing energy in certain ways rather than others. Thus man is not motivated, because he is motivated.

This organic system, man, when freed from base wants and needs should be free to use available energy in pursuit of higher level needs. Teachers, parents, school climate, and peers can combine to provide stimuli which will release the intellectual potentialities of students.

**Piaget**

Another theory of motivation has been advanced by Jean Piaget, a Swiss psychologist trained in zoology. According to Philips (1981), Piaget's major interests were essentially philosophical. Phillips states: "He and his associates have been publishing their findings on the development of cognitive processes in children since 1927, and have accumulated the largest store of factual and theoretical observations extant today" (p. 3). Piaget (1950) centered his research on the domain of human growth during childhood and adolescence, providing a means for understanding how persons comprehend the physical world of time, space, and causality. Glatthorn (1987) contends that *The*
Psychology of Intelligence (1950) has been especially influential since it was one of the earliest works to present in a systematic manner Piaget's comprehensive view of the nature of intelligence and the child's developmental stages. Glatthorn states:

In this 1950 work he first of all clearly articulated his concept of intellectual operations. In his view, intelligent behavior is the outcome of several invariant processes: reciprocal interaction between an organism and its environment; the acquisition of mediated experience, which involves transformations within the organism; and the development of central processes of control. The operations of intelligent behavior, in Piaget's view, are the subjects' actions on the environment. The essential principle throughout intelligent behavior is the degree of continuity and discontinuity. Continuity depends upon familiarity in the interactions with the environment and results in the assimilation of the experience. Discontinuity, the encounter with the unfamiliar, results in the disruption of assimilation and the initiation of accommodation. Thus, one of the essential functions of teaching from a Piagetian perspective is to introduce controlled discontinuity into the learning environment. (p. 56)

Because of the discontinuity which results, Piaget has broken the total course of development into units called periods and stages. Phillips (1981, p.45) has categorized them as follows:
Table 1. Units in the development of intelligence according to Piaget

| Sensorimotor Period--six stages |  
|---------------------------------|---
| Exercising the ready-made       |  
| Sensorimotor schemes            | 0 - 1 month  
| Primary circular reactions      | 1 - 4 months  
| Secondary circular reactions    | 4 - 8 months  
| Coordination of secondary schemes | 8 - 12 months  
| Tertiary circular reactions     | 12 - 18 months  
| Preoperational Period           | 1 - 7 years  
| Concrete Operations Period      | 7 - 11 years  
| Formal Operations Period        | 11 - 15 years  

Glatthorn (1987) sums up each of the four major stages. He sees the sensorimotor stage as a preverbal period in which the child relies upon sensorimotor information to adapt to the environment and to acquire new behaviors. In the preoperational stage language and symbolic thoughts have their beginnings; the learner reconstructs the developments of the sensorimotor stage, integrating prior knowledge into the new intellectual systems. During the stage of concrete operations, the child develops the cognitive ability to classify, order, and handle numbers, spatial operations, and all the operations of classes and relations. With regard to this phase, Piaget (1967) states: "A child of seven
years is already capable of logical operations, but of operations which I shall call concrete, since they bear on objects and not on propositions" (p. 148).

Glatthorn relates that in the formal operations stage the adolescent can think about both the real and the possible.

In referring to a child's intellectual development, Piaget (1967) states: Current developmental or genetic theories of the psychology of intelligence either consecutively or simultaneously employ three factors. The first is maturation - an internal, structural, hereditary factor. The second is the influence of the physical environment, of experience or exercise. The third is social transmission. (p. 153)

Phillips (1981) relates that Piaget is often criticized because his method of investigation is largely clinical; that is, he observes the child's surroundings and his behavior, formulates a hypothesis concerning the structure that underlies and includes them both, and then tests that hypothesis by altering the surroundings slightly. Too, Gelman and Baillargeon (1983) contend:

In our opinion there is little evidence to support the idea of major stages in cognitive development of the type described by Piaget. Over and over again the evidence is that the preoperational child has more competence than expected. Further, the evidence is that the concrete-operational child works out concepts in separate domains without using the kind of integrative structures that would be required by a general stage theory. (p. 214)

Whereas Piaget deals with the stages and factors of learning at great length, he does not go into great depth on motivation as such. However, he does state: "Each scheme provides its own need to be fed and to act. The
scheme starts to reproduce, to repeat itself and to incorporate all sorts of new things into itself." (1945, p. 231) Learning is thereby motivated from within the intelligence itself, with children attempting to accommodate and assimilate new material to their existing schemata. Shaughnessy (1984) states that teachers can provide new information on a continual basis in order to involve students in the learning process. He warns, however, that teachers should be aware of the stage of development of the child and contends that motivation may be seen as a challenge in the Piagetian framework by creating a disequilibration, with the teacher prompting the student to seek equilibration.

**Extrinsic Motivation**

Gellerman (1963) demonstrated that students who possess motivation seem to be more curious and interested and are more able to proceed from the known to the unknown. Herzberg (1966) has shown that when motivation is high the result is increased performance. How then is extrinsic motivation related to such high performance and to academic attainment?

First of all, Whitehead (1984) argues that if an individual is extrinsically motivated then a task is learned for some reward which is external to the task but contingent upon its completion. She contends that there are three main ways in which pupils are extrinsically motivated to be in school: external pressure being placed on the individual by significant others: parents, friends, and the school itself. Whitehead states: "Extrinsic motivation in both boys and girls is associated with authoritarian parents" (p. 31). She continues on the subject of extrinsic motivation: "...parents who are satisfied with their job and authoritarian do appear to have children who are also authoritarian and
motivated by the desire for a high status job and recognition of achievement" (p. 32).

This brings us to Whitehead's second type of extrinsic motivation: students' desiring the long-term advantages that educational qualifications can give them in terms of better job prospects.

Stipek (1982) expresses the belief that the current educational system assumes that motivation stems from the application of external rewards--for example good grades--thus ignoring the powerful motivational forces inherent in the human psyche. She further holds that consequently all external rewards accrue to students who are already successful within the grading system.

In addition to grades, Brophy (1987) cites other consequences valued by students: material rewards such as money, prizes, trinkets, food; activity rewards and special privileges such as the opportunity to play games, use special equipment, or engage in self-selected activities; symbolic rewards such as attaining honor roll status, posting good papers on the wall; praise and social rewards; and teacher rewards such as going places or doing things with the teacher.

Besides Brophy's gamut of extrinsic motivators, parents, peers, and school climate also fit into the category of extrinsic motivators.

**Parents, Teachers, Peers, School Climate**

It can be conjectured that motivational factors influenced the six hundred high-performing students in the Glenbrook, Illinois high schools who were sampled for a study entitled *Early Identification of High Performers* (McGrew, Gatta, Wicks and Weeks, 1984). An initial list of 33 possible predictors of future
achievement was drawn up. Included were the following: Comprehensive
Tests of Basic Skills scores, intelligence test scores, number of semesters in
accelerated classes, and record of absences. The predictor of absence will be
analyzed in this research as well as the factors of parents, teachers, peers, and
school climate in order to determine what factors influence students to do well in
school such that they attain valedictorian or salutatorian status.

First of all, it has been shown that parental influence is a significant factor
among talented students. (Bloom, 1985; Sloan, 1985). The parents of highly
talented individuals value the work ethic and doing one's best. The families are
very child-centered and spend a great deal of time with their children, with the
children being the priority in their lives.

In his study of ethnicity, family environment, and adolescents' aspirations,
Marjoribanks (1984) examines the relations between family environments and
cognitive performance of 11 year old Australian children from different ethnic
groups. In his follow-up study, Marjoribanks used those data to examine
relationships of the children when they were 16 years old. His study supports
evidence for the growing realization that adolescents do not reject their parents;
indeed they rely on them for matters involving future life goals and careers,
providing strong influences on aspirations.

Often parents can work in concert with the schools to encourage
children's academic motivation. For example, Smith's study (cited in Tangri and
Moles, 1987) emphasizes the content of intellectual skills as well as the value of
praise and parental interest in children's work. As part of the study, parents of
children and the second and fifth grades attended group meetings at which they
were taught in ways to model a regard for learning and to assist with homework
completion. They were urged to read to their children, read in their presence, inquire about their child's work, praise their efforts, and arrange a quiet place and a regular time for homework. Subsequently their children made greater gains in reading vocabulary over a five-month period than children in a matched comparison group. Such an approach reveals an emphasis on the value of praise and parental interest in children's work and a modeling of interest in reading.

Just as the parent is important, so is the teacher an important influence on students' lives. Good (1987) cites that the relationship of teacher expectations to student performance has been an area of active research over the past 20 years. Tauber (1985) writes of referent power which is based on a student's identification with the teacher and his/her desire to be like the instructor. In this situation, the person, not necessarily the position, is respected. The teacher then serves as a role model, one who can incite the student to do well. Motivation can be enhanced according to Ellis (1962) through examining students' attitudes, expectations, and beliefs relative to their abilities and their tasks. Brophy and Good (1970) relate how teacher performance expectations influence student behavior. Their model contends that teachers do expect different types of behavior and achievement from different students, thus behaving differently toward various students. This treatment communicates teacher expectations, affecting students' self-concepts, achievement motivation, and levels of aspirations.

Brophy (1986) further posits that levels of success that students can achieve on a particular task depend not only on the difficulty of the task itself, but on the degree to which the teacher prepares them for the task through
advance instruction and assists their learning through guidance and feedback. He states:

...whatever their ability levels, the levels of all students, even the most discouraged are open to reshaping by their teachers. Empty reassurances or a few words of encouragement will not do the job, but a combination of appropriately challenging demands with systematic socialization designed to make the student see that success can be achieved with reasonable effort should be effective. (p. 25)

Cotton and Savard (1982) agree that social means such as teacher feedback tend to have lasting, beneficial effects on student behavior and motivation. Farrell (1982) argues that motivation depends on the availability of feedback while learning and on the relationship of the "reward" of learning to the activity of learning.

Teachers are also cited in the literature as being connected with students' self-esteem. Bradford (1984) believes that educators can build self-esteem in a variety of ways such as providing positive reinforcement, showing interest in students, and exhibiting a positive approach to life and life situations. He feels that educators can teach students how to be successful by instructing them how to set goals, to formulate strategies for attaining goals, and to implement their plans successfully.

Another motivator that teachers can provide is cited by Webb and Baird (1980) who find that curiosity is a well-known motivational device which can be piqued by paradox, the appearance of contradiction within a phenomenon or statement. Incongruity is thus brought about, leading to active questioning, which is a prerequisite to deep learning.
In addition to parents and teachers being important, Ausubel (1954) suggests various functions of peer groups in adolescent development. In the transition from a dependent relationship on parents to the establishment of primary status, peer groups help bridge the gap, give status, and a new frame of reference as the childhood frame is being abandoned and steps toward emancipation are being taken. Ausubel further states that peer groups create precedents and operate as a pressure group, thus gaining privileges for its members and emancipation from adult and institutional controls.

Kandel (1978) argues that there is a similarity of various attributes among people who affiliate with each other; moreover those adolescents who share attributes in common tend to associate with each other and to influence each other due to sustained association. Mergendoller and Marcham (1987) concur in reporting that children and adolescents tend to have friends who are similar to themselves in realms such as need for achievement and self-confidence, areas relating to educational performance and aspirations. Duncan, Featherman, and Duncan's study (cited in Kandel, 1982) state that with social class held constant, adolescents whose friends aspire to college are more likely to aspire to college themselves.

Siman (1977) addresses the issue of homogeneity within the peer group, stating that clique members are uniformly influenced by their peer group and that it is the general group atmosphere that is the main determinant of individual adolescent behavior. In a study of girls' perceptions of schooling, Lomax (1978) concludes that "peer relationships were the most prominent feature" (p. 122). According to Johnston and Markle (1986), once a high social status has been obtained within the classroom peer group, the student's achievement status
may be affected. Covington (1984) states that one's sense of worth comes to depend on doing better than someone else. Ausubel (1954) writes that the moral values of the high school peer group are mainly based upon middle class norms and standards, chief of which is an acceptance of the importance of high academic achievement.

Spenner and Featherman's study (cited in Mergendoller and Marchan, 1987) concludes that relationships, both in the family and in the peer group, have an effect on students' academic performance and the establishment of lofty educational aspirations. Also Bain and Anderson's study (cited in Mergendoller and Marchan, 1987) states that in general, students who are intellectual, whose parents went to college, and whose friends desire to attend college are more likely to continue their education beyond high school.

In addition to the three previously mentioned factors, research also points to the importance of school climate, a climate which integrates students into a stimulating and scholarly atmosphere of active learning reinforced more by intrinsic than extrinsic reward/motivation technique (Coppedge and Exendine, 1987). These authors define climate, in a nontechnical sense, as the prevailing conditions in the classroom; a climate which maximizes learning is desired. Integration of students into a stimulating, scholarly, learning atmosphere is urged as a step to challenge students to be the best they can be. Here also the total environment or classroom climate is reinforcing. Good (1987, p. 165) states: "Students who interpret the classroom environment as interesting and challenging are likely to expend more effort and to achieve more than students who view the classroom differently." Cotton and Savard (1982) write that a structured, interactive, no-nonsense environment is best for enhancing student
interest and achievement. Such an environment is one which is attained through joint efforts. Grossnickle (1986) says that administrators and teachers must work cooperatively to motivate students on a daily basis to create a school environment built on positive student and staff relationships. Koerner (1987) holds that educators can increase motivation by establishing a climate within the school that encourages motivation. Some steps he advocates include fostering a climate that is purposeful and achievement-oriented, honoring student achievement in both academic and cocurricular programs, recognizing student performance on the basis of mastery of objectives rather than comparison with other students, promoting school-parent relationships that support schooling, motivation and high achievement, and implementing a curriculum which is both demanding and realistic.

In its guidelines for improving the student learning climate, the Minnesota State Department of Education (1985) urges that teachers' expectations and evaluations be raised, that high teacher expectations be communicated to the entire school population, and that an instructional program be established that makes operative the high expectations of all students.

Parents, teachers, peer groups, and school climate combine as important forces in motivating students.

**Intrinsic Motivation**

Bruner (1966) recognizes the value of extrinsic motivation and recommends a subtle shift from extrinsic rewards, punishments, and immediate gratification to intrinsic motivation and delayed gratification. Whitehead (1984) finds that the amount of research on the effect of intrinsic motivation on
academic motivation and achievement is small and that its importance in the acquiring of intellectual skills is yet to be determined.

Stipek (1982) looks at the concept of intrinsic motivation by viewing human behaviors such as exploration, curiosity, and attempts at mastery as expressions of an innate need to feel competent. Through stimulating feelings of competence, achieving mastery of a learning task is naturally reinforced. Bruner (1966) argues that intrinsic motivation consists of curiosity (the attraction of uncertainty), competence (the mastery of tasks and problems), and reciprocity (working with others to solve problems). He also stresses the physiological aspect of intrinsic motivation wherein we are in a sense compelled to resolve incongruity.

According to Eble (1988), students learn best from tasks which are neither too easy nor too difficult; motivation is highest when there is a fair chance but not a definite easy chance of success.

Brophy (1986) provides strategies by which teachers can capitalize on students' intrinsic motivation by planning academic activities that students will engage in willingly due to their interest in content or in enjoying the task. Some of his methods include offering students choices of alternative ways of meeting requirements; encouraging comments and questions, including divergent questions and opportunities for students to express opinions or provide other, personal response to the content; giving immediate feedback; introducing fantasy or imagination elements that will engage students' emotions; providing simulation exercises; and building peer interaction opportunities. Thus Brophy contends that whenever curriculum objectives can be achieved through a variety of methods, teachers should stress those activities which students find
rewarding and shun those which are aversive or boring. He relates two limitations to the use of intrinsic motivational strategies: 1) the whole curriculum must be taught, not just the appealing parts, and factual and basic skills must be taught in addition to higher level objectives; 2) even though intrinsic motivational strategies should increase students' enjoyment of classroom activities, they will not directly increase the students' motivation to learn the material being taught.

To ensure the implementation of intrinsic motivation strategies in the classroom, Brophy (1983) urges that teachers learn about communicating positive expectations and attitudes through modeling and positive presentation of tasks and be exposed to techniques such as cognitive behavior modification and attribution retraining.

**Attribution Theory**

Weiner's (1974) attribution theory draws from the locus of control work of Rotter (1966). Weiner's theory assumes that one's perceptions of the causes of successes and failures are influential in the quality of future achievement. He proposes four cognitive attributions as the major determinants of achievement behavior: ability, effort, luck and task ease/difficulty. The locus of control dimension is seen as being either internal or external; ability and effort are internal; task difficulty and luck are external.

Wittrock (1986) hypothesizes in relation to the attributional processes that students will be highly motivated to continue to learn when they attribute their success or failure to their effort, or lack of it, instead of to forces over which they have little or no control, for example their ability, luck, or other people. Wittrock
further contends that explanations of how teaching processes influence the thought processes which mediate achievement represent the major contribution of attribution theory and lead to attributional retraining programs and self-management instructional materials. As an example of the type of explanation of teaching processes offered by attribution theory, Wittrock explains how reinforcement might function to enhance learning. In this regard, he comments:

Attribution theory suggests that success is not enough to increase learning and achievement, which do not occur automatically or with mediation by students’ thoughts. Reinforcement attributed by students to easy tasks, luck, ability, and even to excellent teachers, all internal or external factors over which the students have little control, will not increase persistence or motivation. The reason is that the students cannot or do not see that their contingent reinforcement, and sometimes teacher praise, functions to increase achievement by conveying to students that their effort produced the learning in school. (p. 305)

Wang and Stiles’ study (cited in Wittrock, 1986) found that students who think their effort influences their achievement are more likely to learn than students who contend that learning depends on teachers or other people.

Valedictorian/Salutatorian Studies

Whereas no existing research has been located on the motivating factors which influence students who do well in school such that they attain valedictorian or salutatorian status, three studies relating to valedictorians and salutatorians will be cited.
In a study by Donlan and Echternacht (1977) the Scholastic Aptitude Test (SAT) scores of the 1960 to 1970 valedictorians and salutatorians from a sample of public, experimental, and private schools were studied. Demographic stability was the criteria for the experimental school. Whereas the comparison schools were also selected for stability, the criteria were less stringent. For the students from the experimental schools, there was no evidence of a decline in either SAT verbal or mathematics scores; indeed modest annual increases were observed. For the comparison group, the data showed an initial period of increase, followed by a decline. This study contends that the score decline of valedictorians and salutatorians is a consequence of social change and social forces but is unable to establish this as a conclusion.

The second reference is a longitudinal study (Arnold & Terry, 1985) undertaken in 1981 to examine the educational and career achievement of 81 individuals who graduated from an Illinois high school as a valedictorian, salutatorian, or top honors student. These individuals completed questionnaires and were given in-depth interviews. The study concluded that the dramatic difference between men and women who were high school valedictorians is that women lower their estimation of their intelligence and lower their plans for career participation patterns of development shown by college women in general. An independence of educational aspirations from career participation plans was demonstrated. Too, traditionality of major field was unrelated to career involvement expectations of academically talented women. They also concluded that top academic achievement in high school related closely to college scholastic performance and that career participation...
plans for women of high academic achievement were far below their male counterparts four years after graduation.

The third reference stems from the work of Denny (1989 as cited in Conroy, 1989). Conroy reports that seven years into a 10 year study of valedictorians, Denny finds that two-thirds of the women in the study have begun to lower their career hopes by their sophomore year of college. The research shows that although female valedictorians outperform men in college, few of the women go on to pursue doctoral degrees.

Whereas the 1980 and 1982 information from the "High School and Beyond" study sponsored by the Office of Educational Research and Improvement does trace high school graduates, the study does not relate specifically to valedictorians and salutatorians and thus will not be included in this review.

**Summary**

Research indicates that there is indeed a body of material on motivation to learn, on basic motivational theories, and on parents, teachers, peers, and school climate as motivational forces. Research also provides information as to how the student may or may not be affected by intrinsic motivation and attribution theory.

Although no research is available on the motivational factors which influence students to do well in school such that they attain valedictorian or salutatorian status, three studies have been provided regarding such students to give additional insights in high achievers.
CHAPTER 3

METHODOLOGY

The following methodology was used to collect and analyze the data pertaining to motivating factors which influence students to do well in school such that they attain valedictorian or salutatorian status.

Population

The subjects for this study were graduates of a single high school located in a metropolitan area in a midwestern state. Largely a suburban area, this district serves all or parts of seven communities in a given county. The district covers 27 square miles of land and serves a population of approximately 32,000. A socio-economic cross-section is represented in the community, with a predominance of middle income citizens. The senior high school has approximately 1250 students currently enrolled. In addition to the senior high, there are five elementaries and one junior high in the district.

Specifically, the subjects are graduates of the district’s high school during the years of 1971--1989, the total span of graduating classes since a new site for the high school became available. All subjects were voluntary participants in this study; all contacted subjects agreed to be interviewed. It was impossible to establish contact with two of the subjects.

Access

Having been a faculty member on the staff of the high school in question, permission was granted to undertake this study by the assistant superintendent of schools. In addition, permission was granted by the head of the guidance
department for the researcher to gather the necessary information for the study from students' cumulative records. In order to protect the anonymity of both the school and the interviewees, it was agreed that anonymity of site and subjects would be observed. Pseudonyms are thus used in the research.

**Role of the Researcher**

The researcher assumed the role of interviewer in the qualitative portion of this study. As a member of the faculty of the staff of the institution from which the subjects graduated and as currently being an adult without authority, the researcher interviewed the subjects to access information pertinent to the project.

**Treatment of Data**

The procedures followed while conducting this study were:

1. The current literature on motivation of the high achiever in the secondary school was reviewed.

2. Raw data on the Question from students' cumulative record cards were collected. Standardized test scores were recorded for all students from the top quartile of each designated class: 1971-1977 from the Iowa Test of Educational Development; 1978-1986 from the Stanford Test for Academic Skills; 1987-1989 from the California Achievement Test. Data on absenteeism from grades 10-12 were also collected. Raw data were analyzed to determine the relative standing of the valedictorian and salutatorian to the top quartile.

3. T-tests were used to determine if a statistical significance existed in the above areas.
4. An ethnographic interview schedule (Spradley, 1979) was developed that allowed the interviewer to describe students' recollections of and beliefs about the forces that affected their achievement approach.

5. A pilot study was employed in which students who were then in high school and who were potential valedictorians or salutatorians were interviewed to test the clarity of the interview instrument. [See Appendix A.]

6. Valedictorians and salutatorians from the years 1971-1989 were formally interviewed in the following order of preference: personal interview or telephone interview.

7. Collection of data commenced with phone contacts being made to the individuals who achieved valedictorian or salutatorian status. Upon gaining a response from the contacted parties, an interview schedule was set up.

8. All interviews were audiotaped. Field notes were transcribed using domain analyses (Spradley, 1979) for categorization purposes.

9. Concurrently the quantitative measures were addressed at the onset of the study to effect appropriate statistical analyses.

10. As the interviews were completed, data were cross-referenced as to all possible domains (Spradley, 1979) and fieldnotes were transcribed for content analysis. [See Appendix B.]

11. Based on statistical data and interview information, conclusions were reached objectively regarding test scores (Iowa Test of Educational Development, Stanford Test for Academic Skills, or California Achievement Test) and absenteeism and through qualitative analysis (interviews of subjects).
CHAPTER 4

PRESENTATION AND ANALYSIS OF THE DATA

The purpose of this study was to explore the motivational factors which influenced those students who were ranked first and second in their respective classes during a 19 year period, 1971-1989. The study employed quantitative data to assess differences between the valedictorian and salutatorian and the top quartile of the class in the categories of absences and test scores; interviews were conducted with the top two students from each year to investigate participants' views on intrinsic and extrinsic motivators.

Demographic Data

The sample size of valedictorians and salutatorians studied for quantitative purposes totaled 39 students for the 19 year period, due to their being co-valedictorians for two years of the study. A salutatorian was not indicated in the school records for one of these years. Two students could not be located via school files, reunion data, or class contacts; qualitative data thus includes 37 participants. Regarding gender, 13 of the valedictorians were male; eight were female. Twelve salutatorians were female; six were male. This gender analysis includes the two individuals not located. A trend toward more female valedictorians was emerging as data indicate that in the last four years of the study, females ranked first in the class; in the final three years, both the first and second rankings were held by females.
As to the top quartile of the class, the numbers varied due to fluctuations in the school population. Some students lacked a complete absentee record for the three year period; others lacked standardized test scores. Only complete entries were used in the computation. This data is reflected in Table 2.

Table 2. Number of students in top quartile and complete entries

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<thead>
<tr>
<th>Year</th>
<th>Number in Top Quartile</th>
<th>Complete Entries</th>
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<tbody>
<tr>
<td>1971</td>
<td>98</td>
<td>77</td>
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<td>1972</td>
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Table 2, continued

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<tr>
<td>1989</td>
<td>80</td>
<td>63</td>
</tr>
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</table>

**Analysis of Quantitative Data**

Raw data consisting of MPA (Mark Point Average), days absent, and local percentile on standardized achievement tests were collected from students' cumulative record files, 1971-1989. Three achievement tests were used over the 19 year period: Iowa Test of Educational Development (1971-1977); Stanford Test for Academic Skills (1978-1986); California Achievement Test (1987-1989). Since the study was limited to a single site and since position in the reference group was of primary interest, local percentiles were used in the original data files. However, percentile ranks do not provide the interval or ratio data necessary for data analysis. Therefore, a BASIC program was written to transform these scores into Normal Curve Equivalents (NCEs), standardized scores that are suitable for statistical analysis. This BASIC program also merged all the individual year files (1971-1989) into one master file containing the data for the entire time period. As part of this merging, a new variable was added to each case record. This variable simply indicated
the student's year. Thus each case record included student's standardized test score, absenteeism record, and year of graduation.

In a longitudinal study which tracks the same student or cohort of students over a period of years, the change of tests would create problems of non-comparable data. However, this study is not longitudinal and no significant problem results from the use of different tests over time, due to the Valedictorian/Salutatorian and Upper Quartile groups being composed of approximately equal proportions of students with scores on the different tests.

Composite scores were used for the Iowa Test of Educational Development (ITED) and the California Achievement (CAT). The Reading score was used for the Stanford Test of Academic Skills (TASK). The use of the Reading score for one of the sets of years and Composites for the others does not create significant problems for the same reason advanced above.

The use of the TASK Reading score occurred because data found on cumulative records does not report a composite score. The choice of the Reading score as an overall indicator of achievement level is satisfactory as reading correlates highly with the other two areas on the TASK. The correlations for Grade 9 are: Reading with Mathematics .78 and Reading with English .85.

All data analyses were conducted with SYSTAT on a Unisys microcomputer. The Valedictorian/Salutatorian group consisted of 39 cases and the upper quartile group of 1813 cases. Table 3 indicates the mean and standard deviation for the Valedictorian/Salutatorian group and for the Upper Quartile Group for absences.
Table 3. Mean and standard deviation for absences

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valedictorian/Salutatorian</td>
<td>13.615</td>
<td>13.776</td>
</tr>
<tr>
<td>Upper Quartile</td>
<td>18.837</td>
<td>14.486</td>
</tr>
</tbody>
</table>

Table 3 indicates that for absences the mean and standard deviation for the Valedictorian group was 13.615 and 13.776, respectively. The corresponding values for the Upper Quartile group were 18.837 and 14.486. Bartlett's test for homogeneity of variances indicated the variances between the two groups were not significantly different.

Table 4 indicates the mean and standard deviation for the Valedictorian/Salutatorian group and the Upper Quartile group for achievement test scores.

Table 4. Mean and standard deviation for achievement

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valedictorian/Salutatorian</td>
<td>88.154</td>
<td>10.577</td>
</tr>
<tr>
<td>Upper Quartile</td>
<td>69.264</td>
<td>14.565</td>
</tr>
</tbody>
</table>
As indicated for achievement, the mean for the Valedictorian/Salutatorian group was 88.154, and the standard deviation was 10.577. For the upper quartile group the corresponding values were 69.264 and 14.565. Bartlett's test indicated that the variances were not significantly different at the .01 level. The results of Bartlett's test for both variables indicate that a statistical test such as an one-way analysis of variance (ANOVA) can be applied to test for significant differences in the means for the two groups.

Two null hypotheses were to be tested:

\[ H_1: \text{The mean number of absences for the Valedictorians/Salutatorians and Upper Quartile students was equal.} \]

\[ H_2: \text{The mean Normal Curve Equivalent test scores for the Valedictorians/Salutatorians and Upper Quartile students were equal.} \]

SYSTAT uses the Multivariate General Lineal Hypothesis model to conduct ANOVAs. Table 5 reflects the analysis of variance for attendance.

Table 5. Analysis of variance for attendance

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>1041.023</td>
<td>1</td>
<td>1041.023</td>
<td>4.971</td>
<td>0.026</td>
</tr>
<tr>
<td>Within groups (error)</td>
<td>387527.405</td>
<td>1850.405</td>
<td>209.420</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
As cited above, for absences the ANOVA yielded an F-Ratio of 4.971. With 1 and 1850 degrees of freedom, this F-Ratio is significant at the .05 level. This significant F-Ratio indicates that null hypothesis H₁ is rejected.

Table 6 reflects the analysis of variance for achievement test scores.

Table 6. Analysis of variance for achievement test scores

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>13622.880</td>
<td>1</td>
<td>13622.880</td>
<td>64.843</td>
<td>0.00</td>
</tr>
<tr>
<td>Within groups (error)</td>
<td>388665.524</td>
<td>1850</td>
<td>210.089</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The above table reflects that for achievement the F-Ratio was 64.843. With 1 and 1850 degrees of freedom, this F-Ratio is significant at the .001 level. Again, the significant F-Ratio indicates that null hypothesis H₂ is rejected.

In summary, this study indicates that the sample students, all of whom had achieved valedictorian or salutatorian status, outranked their peers in the area of standardized test scores and were absent fewer days than the average of those in the top quartile of the class.

**Analysis of Qualitative Data**

The qualitative portion of this study is an ethnography of communication, with taped interviews being the main instrument. In this approach, participant observation was also employed; Spradley (1979) states
that all informants are participant observers without knowing it. The investigator conducted all of the interviews, which varied in length from 20 minutes to one and one-half hours; the average was 30 minutes. Five interviews were conducted face to face; 32 were held on the telephone.

The questions for the interview protocol [See Appendix A] resulted from the various motivational concepts set forth in the review of the literature. The categories of general motivation, parents, teachers, peers, and school climate were examined in the interviews to develop a sense of how each contributed to overall student motivation. Follow-up questions on present career and post-high school motivators were asked in order to correlate these variables with contemporary studies.

The interview questions ranged from a broad focus to a narrow, personal one. [See Appendix A.] For example, the first question dealt with what motivation meant in general in terms of the interviewees' high school experience; the final questions dealt with post secondary education, present career, and current motivators. Interviews and their transcription were used as the main gathering techniques. Using a constant comparative method (Glaser and Strauss, 1967), 37 interviews of valedictorians and salutatorians were analyzed separately, with categories emerging from the interview set. A common coding system was then developed, and information was coded using the categories. [See Appendix B.] A quantitative summary of responses was completed for each category to document the patterns which emerged.

Motivating Forces in High School

"What are the motivating factors which influenced you to do well in terms of your high school experience?" This general question was posed to allow
interviewees to begin sorting out and prioritizing their concept of motivation. Some gave a primary motivator, with the internal drive to succeed being the most frequently mentioned. This and other dominant factors are noted in Table 7. All responses were grouped under the listed elements.
Table 7. Motivating forces influencing students in high school

I. Motivation

A. Intrinsic Motivation (22 primary responses)
   1. Having a willingness to learn
   2. Being a self-starter
   3. Accepting a challenge
   4. Having curiosity
   5. Being competitive
   6. Doing one's best
   7. Developing to maximum potential
   8. Getting the job done right
   9. Elevating ego
  10. Receiving self-satisfaction

B. Parents (4 responses)
   1. High expectations
   2. Professional family background
   3. Parental interest

C. Peers (1 response)

D. Grades (1 response)

E. Advanced Schooling/Career (1 response)

This outline reflects the included terms informants provided regarding their main motivational force while in high school.
Whereas the above table represents responses in which interviewees gave a primary motivator, the following figure (Figure 3) reflects interviewees who cited multiple factors which combined to motivate them during high school. This grouping is separated into intrinsic and extrinsic factors.

**Intrinsic Responses #1**

<table>
<thead>
<tr>
<th>Category of Responses</th>
<th>Number of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reinforcement for Accomplishments</td>
<td>1</td>
</tr>
<tr>
<td>Siblings</td>
<td>2</td>
</tr>
<tr>
<td>Advanced Schooling/Career</td>
<td>2</td>
</tr>
<tr>
<td>Grades</td>
<td>3</td>
</tr>
<tr>
<td>Climate: Academic/Schooling</td>
<td>3</td>
</tr>
<tr>
<td>Peers</td>
<td>4</td>
</tr>
<tr>
<td>Teachers</td>
<td>4</td>
</tr>
<tr>
<td>Parents</td>
<td>13</td>
</tr>
</tbody>
</table>

**Extrinsic Responses #2-9**

Figure 3. Intrinsic and extrinsic motivators influencing students

The above table and figure point to the prevalence of internal drive and of parents as being leading motivators during high school as cited by interviewees' responses.
Intrinsic motivation.

The following phrases indicate the spectrum of references made to intrinsic motivation: "being able to make myself do what has to be done;" "making the best use of the talents and abilities I had;" "wanting to learn;" "setting high standards;" "ambition;" "raw material within me;" "genuine interest;" "desire to do the best I can;" "sense of accomplishment;" "independent learner;" "a matter of pride."

The type of drive these students manifested can be noted further in their comments. Bill, in speaking of his desire to achieve, states: "Nobody can make you work that hard; you have to want to." Gerald relates that the motivators he had in high school were the same factors that motivate him now. He says: "The major factor is an ego thing; I like to do the best I can and don't like thinking someone can do better than I can when it comes to learning something." Leah feels that motivation is wanting to do something for yourself, not something imposed by someone else. She comments: "It has to be something from inside, and I consider it as the reason for gearing myself to whatever the task is."

Dyanne, in commenting on her desire to achieve, reminisces about her middle school experience and notes: "It started out as a game when I was in 7th grade. I got all A's. I never thought about it before. Then I thought, 'If you can do it once, you can do it from now on.'" She has!

Although a seven year span passed between the graduation dates of the following two respondents, their thoughts about motivating forces are similar, expressing their philosophy of motivation, not solely in terms of academics, but in a more holistic sense. Darren sees his drive as being the impetus to his accomplishments in high school and describes it as "a desire to succeed across
a range of things, not just academically, but in sports and other things like that. There is the motivation to develop. From my perspective, it was self-motivation instead of directed motivation." Andrea, a recent graduate, sees motivation as "striving to be the most you can be." She posits: "I think part of motivation is getting involved in a lot of activities and seeing what kinds of things you're interested in--many different aspects of the motivational picture. You need to be well-rounded, to be able to talk to other people."

In all of the comments on intrinsic motivation, the emphasis clearly falls on the individual. As Pearl states: "In high school the motivation was that there's this book, and the motivation was that I have got to learn what is in the book. The test is there to show how well I understand the material; it is a check against myself."

Parents as Motivators.

While intrinsic factors were dominantly mentioned in relation to high school success, parental influence was also seen. Jacqueline relates that she is from what she calls a "split" family, with her older brother being five years older than she. Her parents gave her verbal support by saying things like, "You can do the best on both sides of the Mississippi!" Parental expectations and support came into play for Bridget who recalls that there were six siblings in her family, and her parents tried to find an area where each could fit in and have some uniqueness. Her parents expected the best from each. Arthur points to his family's professional background as giving him the push to succeed. He states: "First of all, my dad was a surgeon and my mom was a concert pianist
and all of my older brothers were doctors of one sort or another so that definitely provided a little bit of a push."

**Teachers as Motivators.**

Whereas teachers were not cited as often as self or parents as being the main reason for high school success, Jacqueline relates a powerful story of how one teacher provided the push for her to graduate from high school and college with all A's. She relates:

I remember in elementary school I had had some struggles and there was a fifth grade teacher who really influenced to me. I also remember the first day of eighth grade or ninth grade. It must have been ninth grade social studies with Mr. Anderson. I recall the talk he gave that first day of class which was, in a nutshell, to do your best. He said, 'If you're doing C work, do B work for me. If you're doing B work, then you can do A work for me.' There was something in how he presented it and in his encouragement that made me say to myself, 'I want to do my very best,' and from that point on I got all A's and graduated summa cum laude from college. I remember after I graduated and before I got married, I sat down and wrote Mr. Anderson a letter about what I had done, and I thanked him for the talk he had given that first day. And like I said, I really felt that that was an inspirational point; he caught me at the right time.

**Other Extrinsic Motivators.**

Peers, siblings, advanced education and grades were also addressed, albeit to a lesser degree, as prime motivators. For example, Bruce in speaking
of his friends, recalls that continuing to be a part of a group was probably most important for him. Scott mentions the importance of competing with his siblings and states: "I, being the fifth of five children, wanted to rival what they had done." Three of his siblings were Phi Betta Kappa; one was a national debate champion; another was a football star. (Scott is now a physician in a major metropolitan area.) Sandy mentions that she had thought of attending a university since she was in first or second grade and says: "My mother had always said, 'If you're going to go into the medical profession you don't want to be a nurse; you want to be a doctor. Make sure you get an advanced degree.'" (Sandy completed her Ph.D. degree in the summer of 1990 in economic geography.) Pat, a student who had been anorexic in high school, stresses the importance of grades. "I didn't have ways of achieving self-esteem other than grades." (Pat is now in public health and states that she still tries to preserve her self-esteem. She comments that if she gets a lot of B's, she starts feeling bad about herself.)

In this sample of 37 high achieving students, it was found that their motivations to succeed in high school emanated from a variety of sources, with intrinsic drive being the main motivator, but with parents, teachers, peers, grades, siblings and the desire for advanced education also being important. This analysis therefore gives an overall interpretation of student motivation. The importance of the internal desire to achieve will be alluded to throughout this report. External motivators will now be discussed, with parents being considered first.
Parents As a Motivating Force

The protocol question related to whether parents were encouraging or supportive regarding school and if reading and/or parental background was an important influence. The responses showed a spectrum of ways that encouragement and support were supplied by parents and how the home atmosphere provided a pervading influence on students' lives. For example, Pearl states:

My parents were helpful to me in that they always gave me the feeling that there wasn't, for example, the $10 reward for an A. When I got a test back, it was 'What are you learning from your mistakes?' It was always the sense that it wasn't the grade that you got in the class but how much you learned.

Pearl's comment is indicative of the fact that the extrinsic motivator, in this case the parents, is important, but the more dominant emphasis, as previously cited, is on self.

Parental interest, encouragement and support were cited by 27 of the 37 interviewees as being important. Cherylle's comment represents the kind of inclusive support she received. "My parents were active in my whole academic life. If I were having trouble in anything, they would help me, and, if I needed anything, they helped." Jacqueline also recalls strong parental support. She tells of having lived in Germany due to her dad's being in the military. Upon returning to the states, she had a communication problem as she spoke a mixture of German and English; the language barrier carried through the first grade when she was sent to a speech therapist. She states: "I remember my
initial years were struggling years, yet my parents supported me." Jacqueline graduated from high school with a 12.0 MPA and a 4.0 GPA from college.

Parents allowing children to pursue individual interests was cited as an important motivator; parental involvement in school activities was also mentioned as being consequential. Interviewees cited the meaningfulness of their parents attending open house, conversing with both teachers and counselors, going to extracurricular activities, and clipping newspaper articles on school-related activities. On the home front, help with homework was noted as being influential. Richard states: "It was mainly the kind of support they gave us that if we had problems with something like homework, they would sit down with us and help us if they could; they would teach us to do neat work and to take pride in our work." He goes on to reminisce about elementary school:

I remember my mother and me working on the multiplication tables. My mom would sit down and practice the math and stick with us until we got our work done; she realized how important learning was. Sometimes you didn't feel like doing it, but she'd still stick with us.

Parents' help with homework is also seen as a broadening experience as cited in Eileen's comment: "When I was in school, my dad would see what we were doing in school and take it beyond the scope of the classroom and make the material applicable to real life, as with math. He would show me what was important." Eileen's dad was an engineer; she became a physician specializing in family practice.

Several respondents spoke of the importance of communication with parents. The sense exists that students were pleased to have someone with whom to sound out various things and to talk with about school matters. Bridget
recalls her parents speaking to her and her siblings at least once weekly about how they were doing in classes, what her parents could do to help, and if there were questions that the parents could help to resolve. Whereas most subjects spoke of intangible types of support, for example verbal reinforcement, several spoke of financial rewards received for academic achievements.

Two students, on the other hand, did not indicate the importance of parental interest or encouragement. Earl remarks: "My parents didn't have a great interest in what I was doing in school. I know that they were pleased that I did well. They rarely expressed that; they rarely said anything about my classes. I know that's unusual." Pat states: "They didn't have to encourage me to work hard because I didn't have to work hard to make good grades. One of the legacies of my education is that I've never been a very diligent student, and it's catching up with me now." (Yet Pat is in the process of completing a master's degree.)

Despite such instances, the motif of parental support was strong. Eight interviewees were careful to mention that their parents, although providing encouragement and support, were not applying pressure. In fact four individuals reported that their parents were concerned about their being too pressured by academics. Arthur says that his parents were worried about his pushing too hard, wanting him to keep a sense of balance. Leah recalls that her mother would often say, "Be sure you're having fun!"

Besides interest, encouragement, and support, parental expectations were alluded to by twelve interviewees. They stressed that their parents expected them to do well academically, to complete assigned work, and to go on to college.
Another aspect of home life that six students alluded to without an interviewee's probe, pertained to siblings as a motivating factor in achievement. One student speaks of modelling herself after her older brother; another speaks of the impetus to learn due to the competitiveness with her older sibling; a third speaks of a sister who was two years older than she who knew how to read when she was a pre-schooler and of her desire to keep up with this sibling. The most striking example of the importance of siblings is cited in the case of Carolyn who notes that the examples of her brothers were important to her. She comments: "They did so well in school that it was a source of family honor that I had to uphold. It wasn't sibling rivalry; we haven't had that kind of relationship. I just felt that I had to do as well as they did." Carolyn, a class valedictorian, follows one older brother involved in this study who was also class valedictorian and another older brother also involved in this study who was class salutatorian. A younger sibling also ranked highly in the top quartile of her class.

Such a number of achievers in a given family points to the possible importance of home environment with the parents nurturing an atmosphere of academics. More specifically, Steve remarks:

My parents provided an environment in which education was important. There was the strong sense that learning was important, that knowledge was sort of exciting and interesting, that understanding the world was part of living, and that we should ask questions or challenge, not just take for granted the way things were. That sort of inquisitive spirit was part of our upbringing.
Andrea tells of having few coloring books in her home; instead she was provided with scratch paper to encourage creativity. Several students mentioned being allowed limited TV privileges and receiving parental encouragement to engage in alternate activities such as sports. Bryan attributes his affinity to books to there being no TV in his home while he was growing up.

**Reading As an Influence in the Home.**

All interviewees responded to the subject of books and to the question of whether or not reading was an integral part of home life. Thirty respondents spoke of the importance of reading in the home; three did not find it very important; and four said that it was not important at all. Most stated that there were books and magazines in the home, that they were read to as children, and that reading was presented to them as an enjoyable pursuit. Darren comments that his mom always said that the first thing he ever read was *The Wall Street Journal!* (He is now a marketing manager for a computer company.) Carolyn speaks of her mother instilling a love of books in her when she was a preschooler and tells of reading being a family institution. She recalls: "When I was very small, my mother always read to us after lunch. During the summer we were at first expected and then wanted to put in about two hours of reading after lunch every day." Bruce states: "It was important to go to the library. When I was a child, you could get kids' library cards. I kept wanting to check out adult books; the library wouldn't let me do that. My parents went and got a special library card for me, so that worked." Others also stressed the importance of the library or bookmobile. Bill says: "We would go to the bookmobile and pick out a
few books till the next week; whatever day of the week it came, we would be excited to go and get more." Interviewees also spoke of their getting books as gifts and having children's magazines in the home. A contrast is provided by Bev, a current medical student, who relates that she did not and does not actually "get into pleasure reading."

Yet for most interviewees, the importance, excitement, and pleasure of reading predominated. Cindy tells of her parents having read to her when she was young and having encouraged her to read as she grew older. She notes: "When you're used to reading, and you do your homework and stuff it kind of all blends in." Arthur, who is enrolled in a Ph.D. program in mechanical engineering, relates that his parents read to him extensively when he was young; now with the rigors of his educational life, he finds reading a great way to relax. In general, the interviewees' concept of reading can be summed up in Carolyn's words: "Books are my friends."

**Family Background As an Influence.**

Perhaps the stress on reading in the home can be correlated with parental background. Many spoke of their parents' educational credentials. One student related that her mom was a top student in her high school class and that her dad was class valedictorian; another spoke of parents' college background: Stanford, MIT, Harvard Graduate School. A number spoke of current career status: nurse, teacher, librarian, speech pathologist/audiologist, past assistant school superintendent, businessman with a major airline, businessman in Singapore with an international firm, engineer, concert pianist,
and librarian. Several noted Ph.D. degrees in their family background. Leah recalls her grandparents' academic background. She states:

My grandparents went to college and went to graduate school, and my great grandparents went to college; my great grandfather was a lawyer. I think he was one of the first ones to graduate from the University of Minnesota. There is a history of people valuing education and of people pursuing it in our family.

(Leah is following in the family tradition of higher education. She has recently completed her undergraduate studies and will major in bio-statistics in graduate school.)

Whereas many students came from backgrounds bearing impressive academic qualifications, one student classified her parents as being "pretty much average" and stated that they wanted her to do better than they. The same perspective is stressed by Wally who, in reflecting on his family's interest in education, states:

My parents graduated from high school and do not have a college education, and they wanted their sons to have more opportunities than they did. Speaking of education reminds me of my father who went for ten years at work without a day off and went in even when he was quite ill; he went in every day to do his job despite that. The work ethic ties in a lot with how we as a family felt about education and school.

The above data indicate that although predecessors' academic achievements are prevalent in this study of high achievers, the need to do well is also evident among students whose parents fostered education by indicating the desire for excellence to their children or through modelling the work ethic.
Parental influence has been demonstrated to affect high achievers in the areas of interest, encouragement and support; expectations; siblings; home environment; importance of reading; and family background. This is summed up in Figure 4.
Figure 4. Parents as a motivating factor
**Teachers As a Motivating Force**

Several questions were asked in relation to whether or not teachers were influential in promoting student achievement. In addition to asking how teachers were a powerful force in this regard, probes regarding expectations and support were posed.

A portrait of one teacher who epitomized a number of the qualities mentioned by 17 students as being important to them emerged from the data. A representative sample of remarks about this teacher, Mr. Thompson, a senior high school math instructor, includes statements such as the one made by Richard who commented:

I had one teacher who was a tough disciplinarian; he seemed to like to see you fail. He let us know that he wasn't real pleased with some things. For example, if we missed something, he'd make us write it 50 times, and if we had a quiz, we'd have to take it home and do it over a certain amount of times if it wasn't right. Well, one time we had a logarithm that was a real long thing. He gave us a certain amount of time, and at the end of the problem, he said 'Wrong' all around the room. When he got to mine, he said, 'You would get that one right!' I was the only one in the class who got it right; he kind of gave me a look like he was disappointed. Then one time he talked to me, and I saw a different side of him than the normal image he presented to the class when he gave us a hard time. At the end of the year he pulled me aside, and he said that he knew that I was really good in math, that he was happy to have had me in class, that he saw that I always had my work done carefully, and that it was neatly done. He gave me the idea that he had
been noticing a lot of things I'd done even though, as a student seeing him day in and day out, you would think he probably wasn't paying attention. It changed my view of him a lot. Through the year he made you want to get the material learned the first time, because you were kind of fearful that, if you couldn't come up to his standards, you'd be doing a lot of work at home.

Darren speaks of the high expectations Mr. Thompson had for the kids with whom he was working. He remembers the encouragement students received to do whatever they could with whatever talent and skills they had. Darren states: "In Thompson's statistics class, he made sure everyone got as far as they could, given their individual talents."

Arthur reminisces about Thompson's being an excellent motivator and notes how tough he was. "He never let you rest. He never let you sit; never let you say, 'I did a good job on that;' he required a lot of memorization, the old way of doing things; he wanted you to remember you've seen something and then to remember where you've seen it."

Ray recalls how Mr. Thompson challenged the individual and how he seemed to run a rather ruthless class. He relates: "He seemed to expect a lot out of the student, yet he never really expected something you couldn't give him."

Although Pearl feels that she did not really need a boost from teachers, the one whom she cites as being most influential for her was Mr. Thompson. She remembers that it was always a challenge to do work for this teacher and to show him that you could master the material. "Right is right; wrong is wrong. There was a real sense that you have to be accurate. He was the first who
made me concentrate on being accurate and motivated me to watch myself. There is no excuse for being sloppy."

This sketch of one instructor reflects a number of important teacher-related qualities cited by high achievers: having high expectations, showing encouragement, effecting discipline, demonstrating personal interest, and being challenging as well as motivating. A more thorough analysis of traits demonstrated by teachers which were influential in promoting achievement can be cited in Table 8. Qualities enumerated during interviews were grouped into four categories. Numbers in parentheses reflect times the given aspects were mentioned in the course of the 37 interviews.
Table 8. Teacher qualities influencing high achieving students

<table>
<thead>
<tr>
<th>1. Academic Qualities of the Teacher</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Provides good information (3)</td>
</tr>
<tr>
<td>1.2 Recognizes student talents (3)</td>
</tr>
<tr>
<td>1.3 Is creative (1)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Inspirational Qualities of the Teacher</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1 Presents high expectations to perform (9)</td>
</tr>
<tr>
<td>2.2 Is motivational (6)</td>
</tr>
<tr>
<td>2.3 Makes class interesting (3)</td>
</tr>
<tr>
<td>2.4 Starts student on career path (1)</td>
</tr>
</tbody>
</table>

<table>
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<th>3. Interpersonal Qualities of the Teacher</th>
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Despite the gamut of qualities mentioned by most interviewees, several stated that they could not think of any teachers or teacher attributes which influenced them. Internal drive and/or motivation from the family was again mentioned in lieu of teachers by some students. For example, Leah states: "It was more my family and myself; it was something I felt; I just did it; it was natural for me to go through high school like I did." Andrea recalls: "It was mostly what I expected of myself. There were teachers who helped to motivate me, but there were others I didn't like so well, yet I could motivate myself and get what I had to learn." Bill expresses a similar sentiment by saying: "I'd like to tell you there was something about teachers that influenced me; there wasn't a whole lot—nothing against them. But nobody can make you do certain things, and by the time you're 15 or 16 you're either going to or not going to; that's how I viewed it."

Additionally, one student spoke of feeling alienated from teachers and another posited that teachers can sometimes be a big hindrance. Eileen cites:

Teachers can be too rigid or whatever. I remember a few negative experiences of teachers who would make me not want to do well because it seemed not to make any difference, or I couldn't be creative or things were not challenging or whatever.

**Academic and Inspirational Qualities.**

Nevertheless some students credit teachers as a prime factor in academic formation. For example, Earl recalls how Ms. Anders, his first grade teacher, got him started on the right path. He recounts that the students who were in Ms. Anders' class did better than the other pupils in his elementary
school and says that he sees his academic behavior in high school as a continuation of his primary schooling.

Other students credit the academic qualities of their teachers as being instrumental in their success. For example, Judy, who is now a social worker in the schools, appreciates Mr. Gomez, her Spanish teacher, who, himself a master teacher, recognized her talents and aided her in applying for a scholarship which led to her work in Mexico and ultimately to her present career. Denise, a lawyer, reflects on her high school Shakespeare teacher who was herself creative and in turn encouraged creativity in her students. She notes:

In one of our Shakespeare classes, we were divided into groups and each group had to do one of the tragedies in an hour's time at the end of the semester. My group really went overboard in how we staged this thing, recruiting volunteers out of the class to do lighting and trumpet flourishes offstage and so forth. Nobody tried to squelch you from doing these things creatively. It was, in fact, appreciated and encouraged by the teacher.

Judy recalls this same teacher, Ms. Adkins, who introduced cooperative learning strategies into the Shakespeare class in the 1970's before cooperative learning became the vogue. She states: "I was more of an independent learner, but this motivated me to try to help others." Likewise Cherylle sees her advanced placement calculus teacher as having superior academic qualifications and as being a better teacher than her professors at the university. She states: "Ms. Domino was motivational. Her course was considered the toughest class in the school, but the way she taught it made you
want to work." Thus the academic and inspirational characteristics of teachers tend to blend together. Such a blend can be seen in Tim's reminiscence about Mr. Blass, a biology teacher.

I remember his talking about the qualities of a scholar, qualities he admires and strives for himself and the qualities in terms of motivation and curiosity and intellectual seeking and a whole variety of things, and this was real inspiring to me. He was a good man, and he had religious overtones; some other students were uncomfortable with them, but they inspired me. He was always encouraging me.

Just as parental expectations have been noted in this study as student motivators, teachers' expectations were also found to be important. Darren recalls that, in general, the teachers he had in high school had high expectations. "It wasn't that you were being forced to achieve, but there was this expectation that they wanted you to succeed in what you were doing." As with parents, the issue of pressure is generally absent.

**Interpersonal Qualities.**

In addition to academic and inspirational attributes, interpersonal features were frequently mentioned by respondents. Mark, in recalling his experience in the interviewer's American literature class, spoke of the importance of enthusiasm. He says:

When you taught, you were enthusiastic. You could tell that you were interested in the material. You were not just teaching it because the material was there and you had to present it. You were teaching it
because you enjoyed it and were really interested in people being able
to understand it and to appreciate what you were able to get out of it.
Bridget recalls that there were some teachers that she felt comfortable with and
who inspired her. When queried on how these teachers made her feel
comfortable, she said:

I think it was the personal interest they would take. For example, if they
would ask me to come aside and point out something I could be doing
better or tell me I had done a good job; that really encouraged me to do
better in class. I feel that the teachers who were more large
group-oriented didn't express that special interest. It occurred mainly in
small classes such as orchestra, choir, physics, and chemistry.

Management Qualities.
A collage of academic, inspirational, and interpersonal qualities is
apparent in the classroom situation wherein teachers' management skills are
evident. A dominant motif that emerged in this regard pertained to the teacher's
ability to vary the curriculum and to individualize. Stephanie says that she
appreciates teachers who were willing to go off the mean and not just to plod
along, thus showing a willingness to experiment with different things. Sean
points to his plane geometry teacher who let him break loose from the rest of the
class and work at his own pace. After completing the whole geometry book, he
was allowed to start on another and to work through that. He states: "Math is
now my bailiwick." Denise, an early 1970's graduate, appreciates teachers who
accommodate student needs. She relates:
If you wanted to do something out of the ordinary, it was arranged for you to do it. When you had to do projects or something for one class or another, such as if you decided to do a 16mm film--nobody did videotapes in those days--it might be off the beaten track, so to speak, yet it was acceptable. Teachers went out of their way to facilitate your doing things.

Bryan, who graduated the same year as Denise, expressed his appreciation to the principal who extricated him from a required composition class which heavily emphasized grammar. In lieu of that class, he was allowed to take a course from another teacher who had him write a paper of 500 words per week which, he felt, both met his needs at that point and motivated him.

Thus the range exists from students who were not influenced by teachers to those who found their academic, inspirational, interpersonal, and/or management qualities important. Scott expresses the majority sentiment, however, in his brief quote: "The teachers and education in high school allowed me to grow as an individual."

Courses, Style, or Meaningfulness.

In addition to inquiring if teachers were influential in the interviewee's academic motivation, students who responded positively to the academic issue were asked if success was related to the specific course which the instructor taught and whether their accomplishments were related to courses which were more personally meaningful. Only two interviewees indicated the specific course as being a primary factor influencing achievement. More indicative are Gerald's and Dyanne's responses, showing that they worked hard in all of their
classes. Rather than the course, the teacher's style or personal characteristics were more often cited. For example, Steve states:

I think I was probably more interested in Hawthorne because you were good at teaching Hawthorne than if I had just read some Hawthorne on my own. In that way teachers opened up all kinds of things, and our school had a number of teachers who were quite good.

Students who responded positively to the question pertaining to teacher influence were queried as to whether their success in a given subject was related to those courses which had more meaning for them. Nine students felt meaningfulness was important relative to their accomplishments in a particular class. Mark speaks to the importance of worthwhileness; Mary indicates that she worked more and retained more in the classes that was more meaningful to her. She relates that she actually learned the meaningful material, not just committing it to her short term memory.

Praise As it Relates to Performance.

Finally, all interviewees were asked if teacher praise affected their performance. Table 9 reflects the results of this question.
Table 9. The value of praise in influencing student achievement

<table>
<thead>
<tr>
<th>Degree of importance</th>
<th>Number of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Important</td>
<td>22/37</td>
</tr>
<tr>
<td>Somewhat important</td>
<td>10/37</td>
</tr>
<tr>
<td>Not important</td>
<td>5/37</td>
</tr>
</tbody>
</table>

Representative comments from interviewees who regarded praise as being important include: "I liked being recognized for what I did." "It spurs you on a little bit." "It's just a general motivator for me. I liked to think I was doing what was expected of me." Figure 5 indicates the types of praise mentioned.

Figure 5. Types of praise

Pat, as previously cited in this work, notes that grades were important for her self-esteem. She likewise felt that performing well for teachers was meaningful as was the personal interaction and resultant praise; she holds that praise "made a huge difference."
Erin alludes to the importance of good comments and good feedback; Mark expounds on the feedback issue in the following manner: "I feel that positive feedback is really important. I think another big factor is that the quicker you can get the feedback the better."

Gerald considers that being signalled out for giving addresses is a form of praise; he remembers the honor of being asked to give the National Honor Society speech.

Whereas Bridget recalls receiving a minimum of praise, she notes its importance when it was given. She relates:

I don't remember that teachers gave it so much; what was important was that when they gave it, it was something special. It wasn't just: 'This assignment was good.' It was maybe once a quarter they would say, 'This was really good,' and you would know that they meant it.

Whereas 22 interviewees considered praise important, ten considered it only somewhat important. For example, Darren states: "It was important to a certain extent. I was more driven by the search for truth or whatever--the idea of what is out there: the idea of what I can find out." Jerome considers it somewhat important, but not overwhelmingly so. He concludes: "In some ways it's pretty embarrassing."

The above statement by Jerome correlates with the remaining five respondents who do not value praise. Representative comments were made by Sandy who says: "I didn't like to be called on in class, and I didn't like being in the limelight," and by Stephanie who notes: "I didn't mind if teachers didn't say anything. If they would say too much, I would feel peer pressure to do less."

Perhaps the praise issue is best summed up by Arthur who relates:
Praise can get into a vicious circle whereby if you don't get that praise you feel that you haven't done a good job and that may not be the case. You also start to thrive on the pat on the back. In high school where your teachers know you pretty well, and there's only 400 students in your class, that pat on the back is good and really helps. But you've got to realize that that pat on the back isn't always going to be there when you move to the university with 7000 students. Yes, it's a good motivator; I'm not sure it's a healthy one.

Arthur, like so many of the other high achievers, had already spoken of the importance of intrinsic as opposed to extrinsic motivators.

As reported, whereas many students highly value praise, others deem it less important or not important at all.

This section on teachers has examined teacher qualities: academic, inspirational, interpersonal, and management; success related to courses, style, or meaningfulness of subjects; and the motif of praise and its effect on student achievement.

Peers As a Motivating Force

In that the literature reflects the importance of peers as a factor relating to academic achievement, interviewees were asked about the students with whom they associated in high school. Responses regarding peer associations fell into four categories: relate primarily to high achievers (21/37); deal with all types of students (11/37); associate with those not academically oriented (3/37); and no relationships due to being an independent learner who is not influenced by others (2/37).
Falling into the first group was Steve who reported that his closest friends were people who were academically inclined. He states:

Some of them were probably disaffected in school too, but maybe they found high school too limiting or too conforming, but they certainly were interested in learning more about the world and had a more forward-looking perspective. I think that would have been true of a number of my closest friends.

Denise, an early 70's graduate, likewise associated with the academic crowd and recalls a particular set of friends.

They were a sort of group of people who were the alienated intellectuals, the kind who wore jeans and work shirts and ski boots before it was really fashionable. It was a combination of people who were doing well within the system, so to speak, and others who rather fashioned themselves to be above the system.

More typical of the responses is that of Mark, an early 80's valedictorian, who tells:

My friends tended to be a lot like myself, at least generally. By the time of my later years in high school, people tended to be fairly tracked. Those going to college took many of the courses I was enrolled in. So a lot of the students I knew were trying to learn and to do well in their classes because they were going on to college. I'd say that's the biggest common denominator that I had with my friends. Probably in my last years in high school, my association was with those that were going into the sciences.
Students who related that their peer associations were drawn from all types of people most frequently mentioned the spectrum of musical groups to which they belonged as the prime place for forming friendships. The high school in question has a long history of accomplishments and awards in choir, band, and orchestra; many of the school's top students are in a number of the troupes. Other bases for affiliations include: sports, debate, elementary school, neighborhood, cheerleading, chess team, Girl Scouts, student government, and theater.

Sean, a 1972 graduate, recalls hanging around with all types of kids, not just the "brain kids;" Bill remembers having friends from the whole cross-section: "sports, band, drugs;" he recollects that his friends were achievers in different areas, such as athletics, with a couple being very high achievers. Arthur reminisces about his assortment of friends. He relates:

The students I hung around with varied. I would say the students I got the most support from were in band. These are the people I still see several times a year. I also hung around with a science person; he and I were in music together too, but we weren't close friends on an emotional level, but we were on an intellectual level. We were on both the same speed, as we thought engineering was the field we both wanted to be in. His dad was an engineer, and he did really well in the science classes that I did well in. Most of the guys I got support from were not those whom I worked with on the intellectual level, but rather in music and sports. I can't tell you how important my friends were from high school; they still are. A lot of the reason I did well is because I had this group around me. I was with these guys year round, and it was important that I had this kind
of support that was not dependent on my doing well in school. School was just a small part of it; these guys were like a second family to me. Whereas Arthur's friends were drawn from both academic and extracurricular circles, Richard surmises that his type of associates was contingent upon his personality. He reflects:

A lot of my friends (sic) who I was closest to in high school were not necessarily the very best students. I tended to be a kind of low key person. I came out of my shell a lot since I decided I wanted to become a teacher. I was kind of shy and minded my own business. I was not the type of person who participated in class discussions. I wasn't the type to show off what I could do. Unless someone called on me, I wouldn't say a lot, so I tended to have a lot of friends who weren't quite as good academically. They tended to be a little more low key type people like myself, not the real leaders of the school or anything like that.

Cindy mentions that her closest associates were not the academic type, noting that none of her female friends went on to college. In fact, one is now a flight attendant; another manages a Best Buy store; a third is a receptionist. Cindy, on the other hand, has graduated from college and has recently passed her CPA test.

The two students who declined to talk about their peers indicated that they were independent learners who were driven on their own.

Despite the fact that different orientations existed toward peers, Bridget sums up the sense of the majority of these high achievers in her statement: "It was our way to do the best we could in school and to do as well as we were able after school."
Sense of Competition with Peers.

Next interviewees were asked if their friendships involved a sense of competition. Eighteen responded "no" or "generally no;" 11 answered "somewhat;" 8 said "yes."

Of the 18 who replied that competition was not important, the overwhelming sense was that stress should be placed on learning per se and on individual pursuits, rather than engaging in a contest. Eileen notes: "I was never competitive with other people; I was competitive with myself. I never really worried about what other people were doing because I knew that if I did my best I would do fine." Earl states that he did not like competition and that he would not tell his grades to anyone because he considered them unimportant. In fact, he remembers that he was bothered by people's concern or "over concern" about grades. Pearl recalls being distressed since competition appeared to be more important than learning for learning's sake, and also that competition became paramount to friendship. This group, who responded negatively to the topic of scholastic competition, again emphasizes the theme of intrinsic motivation and stresses the importance of competing with self. In Stephanie's words: "I always wanted to do the best that I could do."

A second sector of students saw themselves as somewhat competitive but noted that competition was not a focal point. This group basically downplayed the importance of competition, feeling that there was enough room for everyone to do well or remarking that competitiveness was only present minimally with "a couple of other high achievers." Mark recalls:
Most of us wanted to get an A in the course, but it wasn't that there was only one A that they were going to give. Competitiveness was there, but it wasn't that strong because there wasn't that much of a competitive press.

Jerome concurs with his statement: "I think there was the feeling that there was enough room for everyone to do well. I don't think competition was a problem."

Leah remembers being conscious of competition but notes that there were times when high achievers helped each other, studying for tests together or telephoning one another with questions or for discussion.

The final group who classified themselves as being competitive echoes phrases such as "having friendly rivalry" or "being competitive in everything."

In retrospect, one student regrets her competitive nature in high school; another classifies herself as being competitive yet shunning overt competition so her grades would not be disclosed since awareness of her scores could incite jealousy. Whereas Bruce saw himself as being competitive in high school, he now views competition with a different perspective. He states:

"I guess I look at it relative to the kind of competition I'm involved in now in the corporate world where competition can get pretty venal, and pretty nasty, and pretty vindictive. The goal is often not just to triumph, but to destroy the other person as well. It's sad; it's awful. That wasn't at all the case in high school. Everyone kind of triumphed a little more in everyone else's triumphs than happens currently."
Peers' Post Secondary Training.

Another aspect of peer relationships was considered with the following question: "Did the students whom you hung around with go to college?" Only 2 of the 37 respondents stated that their friends did not pursue a college education. The others replied that all or most of them did continue on the post secondary level.

Maintaining Relationships with Peers.

In that the literature suggests a correlation between peers and academic achievement, the final question in this category related to whether or not the interviewees are still in touch with their high school friends. Table 10 reflects given responses.

Table 10. Schedule of respondents' contacts with high school peers

<table>
<thead>
<tr>
<th>Contacts</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>In touch with all/many</td>
<td>11</td>
</tr>
<tr>
<td>In touch with some/couple</td>
<td>17</td>
</tr>
<tr>
<td>In touch with one</td>
<td>5</td>
</tr>
<tr>
<td>No contacts with high school acquaintances</td>
<td>4</td>
</tr>
</tbody>
</table>

As evidenced in the above table, 17 respondents still associate with some or a couple of their high school friends; 11 see many of them; five maintain contact
with one person; and four have no remaining contacts from high school. Data indicate that time itself does not necessarily dictate retention of high school friendships, as evidenced by the large number of students from the 70's as well as the 80's who still see many or some of their high school acquaintances.

This section has addressed types of peer associations, competition among peers, friends’ post secondary schooling, and the continuation of high school relationships.

The School Environment

Whereas current literature points to many climates of an organization, the climate of acceptance and the academic climate were deemed to be the two most poignant ones related to this study.

The Climate of Acceptance.

Interviewees were asked if they felt accepted within the school, if their peer group felt accepted, and if there were any difference in acceptance between themselves and their peers.

Results of responses to the question of personal acceptance are cited in Table 11.
First of all, twenty students responded that they did feel accepted within the school environment. For example, Eileen felt acceptance in high school, but in previous years she got along better with teachers than with fellow students. This sentiment was echoed by other students such as Gerald who said: "I felt very comfortable there. I was really close to a number of teachers." Earl stated that he felt accepted but proceeded to contrast his acceptance with the conditions experienced at the junior high. He relates:

I remember a couple of weeks into tenth grade; I felt like I was released from prison. In junior high school, you needed a pass to walk in the hall--like a prison camp. The students seemed to be more mature in high school. I didn't get harassed in the hallways by the bullies, a problem a lot of people had in junior high. I didn't suffer like a lot of people from that kind of problem, but it was still very annoying. I didn't really have that problem in high school.

Table 11. Replies regarding acceptance within the school

<table>
<thead>
<tr>
<th>Degree of Acceptance</th>
<th>Number of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Felt accepted</td>
<td>20</td>
</tr>
<tr>
<td>Felt somewhat accepted</td>
<td>14</td>
</tr>
<tr>
<td>Did not feel accepted</td>
<td>3</td>
</tr>
</tbody>
</table>

120
Whereas this sampling stated that they were accepted, their explanations are tempered as are the fourteen who answered in effect that they were "somewhat" accepted.

Wally makes a representative statement for this latter group when he says: "I wouldn't say I was part of an 'in' group or anything, but I don't think I was an outcast either." Other qualifications revolved around acceptance coming later in high school, the acceptance within a group of friends as opposed to general acceptance, and the stigma of academic excellence with subsequent harassment.

Pearl notes that she did not feel accepted until late in her junior year or early in her senior year. At this point she had broken with a clique which considered itself elitist and found that she could get along with many people and could fit in with any group. She also noted that she got along well with her teachers and stressed that a good teacher-student relationship was important to her in enjoying school and in contributing to motivation.

Second, a number of respondents from the group who qualified their response stressed friendships. Mark relates that he felt accepted, but not by everyone. He comments: "There were enough friends there that I felt accepted, and certainly the teachers were supportive." Judy reminisces that she was accepted within her group of friends but felt alienation due to her parents' going through a divorce at the time. She states: "Whereas there was a place for people with drug problems to go, there was really no place or support group for those of us with other types of problems." Michelle too stresses that she was accepted in her group of friends but feels alienated because in high school "it
wasn't good to be smart. If you're smart you can't be fun, or you can't be this or that."

Michelle's sentiments are echoed by Leah: who felt neither accepted nor rejected. She recalls:

I think that people were looking at students who were doing well and thinking that that was their sole purpose in living from day to day. In my case that wasn't true. I was just doing what I did, and I did it well, but it wasn't my sole focus. I think a lot of people misconstrued my intent and other people's intent who were doing well at the same time. I felt sometimes in high school in order to be the most accepted as you possibly could be you shouldn't achieve. But at the same time, I didn't feel that you were rejected for working to your potential; it wasn't active rejection; it was more just not being a part of everything.

Leah's response ties in with the third group of respondents giving a qualified yes to the query regarding school acceptance. Again the degree of dissatisfaction came from the consequences of being a high achiever. Tim remembers getting criticism from his peers for doing well and consequently being called a "curve wrecker." Sharlene recalls the hurt inflicted by people making comments such as: "She always does everything perfectly." Cherylle felt a degree of acceptance, yet she considered herself to be somewhat ostracized because she was more into academics and not integrated into the "party crowd."

There were some differences in how interviewees perceived their acceptance as opposed to their friends' acceptance. For example, Denise, an
early 70's graduate, emphatically states that she felt accepted but that her friends were "alienated intellectuals." She reminisces:

They wanted to be different from the mainstream, and they were their own sort of mainstream. There were a number of faculty whom they identified with so there was some connection to the mainstream; it was people wanting to be different.

Steve also felt that he was accepted, but that his peer group was not entirely well-received. He comments: "They fit into certain groups, but being 'nerdish,' they got hassled in that way."

As previously stated, Pearl broke off from the group of elitists with whom she had associated and enjoyed social success with various groups toward the end of her high school career. However, her compatriots retained their given "elitist" title and, in her opinion, remained isolated from mainstream acceptance. She goes on to note a difference between herself and this group by saying: "People came to know who I was." Pearl, in her opinion, came to be known as an individual, her own person.

In addition to Pearl, several other interviewees noted specific differences between themselves and their peer group. Jacqueline felt that one of her best friends was never well-received because of a physical deformity. Whereas Bridget felt general acceptance within the school, she points to a close friend who never felt comfortable in high school and still refuses to come to class reunions. Bruce claims to have felt "very much" acceptance in high school, but mentions that folks at reunions talk about how they felt excluded for whatever reason. He laughs and says: "I never felt that. As a matter of fact, I probably
look at my time in high school as the time when I felt the most accepted of any other time in my life. It's all been downhill since then!

Finally, there were three students who indicated nonacceptance. Pat sees high school as a period of "profound alienation." Sean recalls: "When I was younger, I didn't feel accepted other than I was accepted at home and by teachers for the most part. I always felt different." He notes that his friends probably felt the same as he. Sandy is so abashed by the acceptance issue that she would not respond to the initial question or to probes.

The issue of acceptance is a cloudy one. Even those who felt accepted frequently qualified their answers. Few saw differences between themselves and their friends; some appeared affected years later by high school nonacceptance.

The Academic Climate.

Acceptance within the school was the first component of climate addressed; academic excellence was the second. Academic excellence provides the cultural theory and problem orientation that dictated the focus of this research. The question posed was: "Did your high school, in your opinion, promote academic excellence?" Answers were grouped into five categories as noted in Table 12.
Table 12. Responses regarding the school's academic excellence

<table>
<thead>
<tr>
<th>Type of Response</th>
<th>Number of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>12</td>
</tr>
<tr>
<td>Qualified yes</td>
<td>16</td>
</tr>
<tr>
<td>Average</td>
<td>1</td>
</tr>
<tr>
<td>Do not know</td>
<td>5</td>
</tr>
<tr>
<td>No</td>
<td>3</td>
</tr>
</tbody>
</table>

Among the group of respondents who felt that academic excellence was fostered, there was the definite sense that the school's culture deemed academics important. As one student said: "It was a place where education took top priority." An early 70's graduate states:

Over the years they wanted to let us know in many different ways, whether it was the teachers or the principal, that the District was considered one of the top school districts in the state, and that was just the kind of thing you assumed when you were in school, that is, that you were going to one of the top academic schools.

However, he went on to contrast this philosophy with the situation of the late 80's, a time when the building was wrecked by vandals and again in 1990 when the school was in the media due to locker thefts.

A graduate from 1973 felt that the school cultivated excellence by meeting student needs. Denise recalls:
I think that if people could make an argument that the course offerings didn't satisfy what they were doing, then the school made arrangements. I remember in my time students were doing independent study. People were doing a televised history course from the university; there was a course book from which you would work. Too, I feel that particularly in the sciences and math that students were graded appropriately.

Denise goes on to tell about being able to test out of three quarters of science required at a major Illinois university based on her high school training. She comments: "It is attributable to our teachers." Others also relate that their high school experience prepared them for college.

Whereas some students overwhelmingly felt that the school nurtured excellence, a greater number qualified their response with phrases such as "good, not excellent," or "They tried." However, one incident where more effort and planning regarding curriculum could have been demonstrated was related by Wally, now a New York lawyer. He recalls the following about the math curriculum:

They advanced us a year in the junior high, and the parents were able to get the administration to promise that there would be courses for us as we progressed, and, as it turned out, there was no follow-up math course for our senior year.

He contrasts his mathematics background with that of friends from a nearby private school who entered college having had two years of calculus. Wally goes on to say: "That is not to say that there were serious problems with the school; we know better than that."
Other interviewees such as Earl noted that the school promoted academic excellence, but not as much as he would have liked. He too contrasted his experience with that of friends from other area schools. Earl states:

They would talk about their AP courses and how difficult their studies were and these were kids who were, I guess, the same kind as I, yet they were doing things that were actually hard. I thought there were very few courses in high school that were actually difficult. I felt that I was missing something. There was nothing in math for me to take; there was not a real calculus course; they didn't have Latin; there wasn't any kind of classical language offered.

Although Bruce thought that the school encouraged academics and that the curriculum had good choices, he also alludes to other schools in his statement: "If you compare our school to some private schools, I'm not sure that you'd necessarily say that the academic winners were as heavily promoted as they were in other schools."

Some students qualified their "yes" responses by referring to fluctuations among teachers and courses. Tim remembers that despite excellence varying from teacher to teacher, the environment was sufficient to motivate him. Arthur recalls that only some teachers worked for academic excellence and that these certain teachers pushed their students to excel. Erin too notes that academic excellence related to the teacher, with only some instructors helping her toward her college goals. Likewise Andrea felt that, whereas some of teachers really tried to motivate kids, others did not.
Although Dyanne expressed only qualified respect for the academic excellence of the school, she lauds the teachers and comments that some of the courses were "almost up to first semester in college." However, Cherylle notes disparity among both teachers and courses. She states:

I think the math was good, but I think the science was lacking a lot. I think there's much that can be done. The older teachers seem to have taught their courses for so many years that they appear to have lost their enthusiasm.

Sharlene feels that her classes were good but believes that there would not be unanimity among her peers on this point because all students did not take the same kinds of classes as she. Her opinion was that a good education was there if you wanted it. Mark shares Sharlene's sentiments in noting that students have the opportunity to pick and choose classes in which academic excellence is nurtured. He comments: "I think the school fostered academic excellence to the point of offering students the opportunity to achieve it." Bill expounds on this theme of availability of opportunity by stating:

A good example would be the calculus course. Every day the teacher would assign a set number of problems. If you did the problems, you were learning the material, but you weren't required to do them. If you didn't do them, there wasn't any big penalty. So, it would be easy to get through that course without learning anything. Yet, if you did what was offered in there, you learned it quite well.

The sentiments of the group who expressed a qualified yes to the question of academic excellence are expressed by Bill who states:
Academic excellence doesn't really stem through a school or through an administration's saying: 'We're going to be academically excellent; we're going to set a goal, therefore we're going to achieve it.' It's more of a personal 'student type' thing. If a student says, 'This is the school I'm at, and I'm going to make the best of it; I'm going to learn what I can,' that student will strive for academic excellence; yet other students are saying, 'I'm going to have fun; I'm not going to take school seriously.'

Thus disparate opinions exist among the sectors of the population who qualified their "yes" responses. These differences are further delineated by Steve who contends that the school was "pretty average." He philosophizes:

Very few public high schools are single-mindedly devoted to academic excellence, and I don't know if that is all bad because you're serving a diverse group of kids, and I don't know if the sole focus should be getting a group of students who are already motivated to go up farther. It's more important, for example to worry about the work experience kids, providing motivation so they won't go under.

Five students could not or would not speak to the academic atmosphere. For example, one student feels that he would have done the same academically wherever he went to school; another spoke only of her home and contrasted her strong family background with others who might have to rely more on the school for motivation; a third did not believe he had the means of evaluating the school being studied against the eastern school where he had attended junior high.

Finally, three students replied that the school did not foster academic excellence. For example Jacqueline states: "I don't feel it was promoted; I don't
think the ambience was one of trying to promote everybody to excel. For myself, it was something intrinsic which I wanted to do."

Despite the gamut of responses ranging from positive to negative, the aspect of intrinsic motivation again comes to the fore. Too, during the 19 years of the study, changes have occurred both within staff and student body. The staff now has a younger median age. The more egalitarian aura of the students of the early 1970's was replaced by the "me" generation of the 80's. Regarding course offerings, two advanced placement courses are offered; more are on the docket for the future. The school is also still laboring to escape from the avalanche of adverse publicity surrounding the vandalism which occurred in the spring of 1989, closing the school for a quarter and forcing the high school to share the junior high facility on a split shift basis.

In an additional question in a scholastic vein, respondents were asked if their academic achievements were recognized. Whereas some students readily reiterated commendations and honors, others were bitter about the small amount of public recognition received. A few were disinterested in public acknowledgment. Those students who answered affirmatively, mentioned the various honors which they received during high school. The range of academic types of recognition is cited in Figure 6.
Figure 6. Types of academic recognition received by students
As noted in the preceding figure, the domains of academic honors pertained to the various scholastic areas, specials honors in an organization, recognition at ceremonies, miscellaneous recognitions, and the gaining of respect from peers and staff.

Denise, a 1973 graduate, recalls that in the early 1970's there was a downplaying of traditional types of recognition such as honoring the valedictorian and salutatorian. She considers that era to be more egalitarian. However, in the latter 1970's, according to Scott, academics still were not highly recognized. Likewise regarding the late 1980's Dyanne comments: "They kind of downplayed it." Michelle feels that her achievements were recognized to some degree, but contrasts her experience with those of her current college classmates. She says:

When I got to college, I found that we didn't compare to them; they were recognized a lot more; they were from smaller towns too. They had lots of awards. I kind of felt our school should have done more. I know they recognized the top 30 students and the grade point separating them was small. I think that was important, but I also think that the top ten could have been recognized a little more because I felt that I had worked so hard.

Likewise Sharlene remembers receiving academic recognition, but rues the fact that the valedictorian from a neighboring district was awarded $1000, a sum which would have been helpful to her as she had to pay one half of her college fees. Thus during both the 1970's and the 1980's, academic recognition was not a primary focus of the school in question.
Consequently, throughout the years of the study, strong feelings were evinced about the fact that in this high school the top achievers were not publicly recognized. Interviewees from both 1974 and 1975 mentioned the parent/principal controversy concerning recognition of the first and second ranked members in the class. The principal's philosophy of honor students being recognized, rather than only the top two being signalled out, prevailed. The 1974 valedictorian expresses his ambivalence about this dispute and recalls:

I have mixed feelings. I feel that every time you do single anyone out whether it's for academics or any other kind of success, you are going to create some downside with other people, and I don't think people should be motivated in school just to achieve that kind of recognition because there are other things to school and to life other than getting your name in the paper or whatever kind of recognition there may be, but I guess it would have been nice--not to have as a goal to strive for--but once it's happened, it would have been nice to have received something.

Another valedictorian noted that lack of acknowledgment bothered him a little bit, but "it wasn't a big deal." A third valedictorian conjectures that the top people were not signalled out for special recognition as there was some question as to why some students had good grades in the first place and if such grades were achieved due to nonparticipation in extracurricular activities. A fourth valedictorian said: "Do you have me listed as valedictorian? I didn't even know I was; I still don't!" A fifth student remarked:

I don't think I got any recognition. I think I was kind of an embarrassment from the standpoint that I've always been very unconventional, and at the
point when I graduated, I hadn't even decided if I were going to college or not, and it seemed like the administration was embarrassed about the fact that the top person in the class didn't even have college plans. I was kind of hurt by that at that time.

This interviewee did finish college at age 30 and is now employed in an executive capacity in a well-known metropolitan firm.

An additional group of students indicated that they did not care if academic achievements were noted. One student said: "I really didn't want a lot of recognition." Another could not recall any recognition being received and commented: "That's not the thing that drives me." A third interviewee remembers being glad that he was not overtly named valedictorian. He comments: "I never wanted that. To some degree it would have been fun, but I know to this day that there were students who were more intelligent than I was."

An additional respondent relates:

I guess at the time it wasn't something that bothered me because the school's climate does not make the person who is good in academics the most popular person in the school. It was OK with me that there weren't people who were broadcasting who was doing well academically; if they were going to low key it, it was fine with me. It would have been worse if it had been broadcast.

In summary, among the 37 participants some expressed satisfaction with the types of awards and recognition given; others would have liked more public display; and a third group did not want overt recognition. As a postscript to the subject of recognition, it is interesting to note that in the final year under
consideration, the top two students were recognized at the graduation ceremony, a dramatic change from previous policy.

The last category dealt with in an academic vein pertained to grades. Interviewees were asked: "Did grades enter into your motivation? Were you thinking of college or future jobs?" Twenty-seven said that grades did enter into their motivation; three gave a qualified yes; three said that they were not greatly influenced by grades; and four said that grades did not enter into their motivation.

Students answering the above question affirmatively mentioned that grades gave them standards to go by, that they aimed for the highest A, that grades were important as a performance indicator, and that they were important in making a person feel like that individual was doing one's best.

One student commented that he continued to make good grades as he had always done well in school academically and desired to stay at the same level that he had previously reached. He felt that he had more to lose than to gain. Another student notes: "They (grades) were only important as an indicator that I was learning the stuff and learning it as well as anybody." A similar bent was expressed in this way: "It was not so much that I wanted that A, but I wanted the grade more as a marker to show how well I could do if I worked at it."

A number of students indicated that grades were not important per se. For example, one said: "It was sort of irrelevant as I didn't study at home." Another saw grades as being important only from the standpoint of being a means to an end. This student recalls:
Grades were only important in the progression of going on to whatever the next step was, going on to a particular college or a particular graduate school. Standards were always more important than how one is being measured.

Eleven of the respondents noted that grades were a motivator as far as getting into a good college. Representative quotes include: "Grades were important for getting into the schools I wanted to get into." "I wanted to get into college; that was important." "They were important in terms of the scholarships I got which just about covered the cost of my college education." "I was very stressed out about getting good grades because of the pressure I put on myself. I was thinking of getting a scholarship for college. I did get one." "I knew that in order to get into a good college I had to maintain my grades." "I knew that grades were important for getting into college and for the future outlook."

Whereas most respondents did not refer directly to future jobs as their motivation for making good grades in high school, Ray spoke of the cycle connected with achieving high scholastic marks. He states:

In high school I thought that I've got to keep my grades up to get into college, and when I was in college I thought that I had to keep my grades up to get into graduate school; then I started looking at jobs and needed them to get a good job. I guess it's a never-ending kind of thing. Once you get into a job, there's always someone monitoring your work, and you've still got to continue.

Throughout the dialogue on grades, the importance of achieving high marks for various purposes was stressed. The reasons were primarily related to present circumstances, to college, or once again to the type of intrinsic
motivation which these students possess. For example: "It was mostly personal drive." "I had expectations for myself to be the best I could." "Grades were always there, but for me the love of learning was the most important thing." "I think it was that inner drive; I was ambitious."

The section on school environment addressed the climates of acceptance and academics. Regarding the academic climate, types of academic recognition were noted, the problem of recognition was examined, and the subject of grades as a motivator was explored.

Focus on the Individual

The above questions on the protocol related to family, teachers, peers, and the school as possible motivating factors. The focus at this point changed to the individual. The question posed to the interviewees was: "How did you feel personally when you were successful?" In conjunction with this query, respondents were asked how or if they viewed learning as an end in itself.

When answering how they felt when they were successful, students said that success made them enjoy learning more, that it added fun to learning, that it made them love to go to school, that it piqued their interest in an array of things available for learning, that they had a good feeling for having been able to work their way through the material, that they were satisfied for having done what they were supposed to do, that they had appreciation for having gained new information, and that they were proud of their accomplishments.

Regarding the enjoyment of learning, Darren speaks of the pleasure derived from learning more pertaining to subjects about which he had formerly had no perspective, such as investigating new applications in math or using a
social studies course to look at other cultures. Likewise, Michelle talks about the satisfaction she got from her English courses, from reading books and learning about other cultures. She comments: "It was interesting for me to learn about things I had never known of."

Erin tells that she enjoyed her courses and felt good about her grades. Additionally, Cindy relates that being successful made her feel good. "I felt like I accomplished something, that I wasn't just there to go to school, probably like a lot of people do who go to school just because they're required to go."

For some students, success was related to achieving one's best. Leah notes: "I would hate to know I didn't do my best. What motivated me was living up to my personal expectations." Cherylle states: "I always had an inner drive to do the best I could do. A lot of people go to school every day and think of it as a drag; if I weren't learning, I would get bored." Wally, who was noted previously in this work for his family's emphasis on the work ethic, again echoes that theme by saying: "My feeling was that whatever course you were in that you do whatever you could do. If you happen to commit yourself to doing it, you commit yourself to doing a good job of it."

Pearl sees success as being a "confirming sort of thing." Her previous successes propagate her desire to be a professional student. She states: "The more you learn, the more you want to find out."

The heavy emphasis on the intrinsic aspect of motivation prevailed in respondents' speaking of learning as an end in itself. The refrain was repeated regarding learning per se as being valuable, of the desire of always wanting to know more, and of the enjoyment derived from learning.
Some students saw learning as an end in itself primarily with reference to those subjects which interested them more. Jerome remembers that he noted learning in this regard most particularly in science and math. He states: "I just liked the subjects and felt they were important." Andrea recalls that she too felt learning was important as such and says: "I liked many fields, but I had the capacity to do math and science; there's so many career options to choose from in these fields." Earl displays his selectivity for what he wants to learn in his reminiscence about his high school psychology class which had two criteria: a term paper and tests which required memorizing lists. He remarks: "I spent a lot of time on the research paper as I thought it was interesting doing that kind of research which I had never done before, but I couldn't see myself memorizing for the tests."

Steve, in looking back at his high school experience, notes that he was motivated both by grades and, when interested in something, by the motivation in learning the material for itself. Several students remarked that whereas their main emphasis was on obtaining good marks in high school, their love of learning became more pronounced at the post secondary level. For example, Scott notes: "I think a lot of times in high school I was learning to learn, but more especially this was true in college. The sciences were important; I enjoyed the processes and the problem solving." Sharlene relates: "I probably am more that way now than I was even then. Now with medicine I have to read all the time and want to learn more about it." Likewise Ray remarks: "In high school I was kind of competitive about my grades. Once I got into college, although the grades and the GPA still meant something to me, it wasn't the
motivating factor; it was just enjoying different classes.” Bill too echoes the same refrain by saying:

The learning as an end in itself became more important after high school. A lot in high school was ‘this is what I had to do to get ahead or to get into a good school,’ and it was very goal-oriented. I wanted to achieve this or that so I could go on to the next step, and now it’s more learning for learning’s sake.

Thus a shift can be seen among some interviewees from being simply grade conscious or goal oriented to experiencing the enjoyment of learning. Not all respondents were so philosophical, however. When Arthur was queried as to his opinion of learning as an end in itself, he said:

I don't think I'm that philosophical. I like to know neat things; I think that's why I read Popular Science now. It's neat to pick up things like why the sky is blue and why does the sun rise kind of orange, and why does it snow. Those kinds of things can be discussed at a party or in passing. To that extent of learning for learning's sake, I do want to know more things. If you know more things, people would think you were smarter, and people would think you're cool--external stuff.

Perhaps this is just another aspect of the same subject, showing that many people view learning in itself in a variety of ways. However, the preponderance of interviewees' replies noted in this study do emphasize intrinsic motivation.

**Colleges Attended and Present Career**

In an attempt to discern if formal schooling persisted into the post secondary years, interviewees were asked whether or where they went to
college and what their present career is. They were also queried as to whether or not they liked their current career or school status.

Table 13 indicates the post secondary schooling, both undergraduate and graduate training, of interviewees.
Table 13. Post secondary schooling of interviewees.

<table>
<thead>
<tr>
<th>Undergraduate College</th>
<th>Graduate School</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. St. Theresa's College</td>
<td>University of Minnesota (Law)</td>
</tr>
<tr>
<td>2. Hamline University</td>
<td>Stanford University</td>
</tr>
<tr>
<td>3. Metro State University</td>
<td>Mayo Clinic (Medical)</td>
</tr>
<tr>
<td>4. Bethel College</td>
<td>University of Minnesota (Law)</td>
</tr>
<tr>
<td>5. University of Chicago</td>
<td>University of Minnesota</td>
</tr>
<tr>
<td>6. Oberlin College</td>
<td>University of Minnesota</td>
</tr>
<tr>
<td>7. Drake University</td>
<td>University of Minnesota</td>
</tr>
<tr>
<td>8. University of Minnesota</td>
<td>University of Minnesota</td>
</tr>
<tr>
<td>9. University of Minnesota</td>
<td>University of Minnesota</td>
</tr>
<tr>
<td>10. Stanford University</td>
<td>Yale Law School</td>
</tr>
<tr>
<td>11. University of Minnesota</td>
<td>University of Minnesota (Medical)</td>
</tr>
<tr>
<td>12. St. Olaf College</td>
<td>University of Minnesota</td>
</tr>
<tr>
<td>13. St. Olaf College</td>
<td>Mayo Clinic (Medical)</td>
</tr>
<tr>
<td>14. Iowa State University</td>
<td>Iowa State University</td>
</tr>
<tr>
<td>15. Brown University</td>
<td>Boston University</td>
</tr>
<tr>
<td>16. Gustavus Adolphus College</td>
<td>University of Minnesota (Medical)</td>
</tr>
<tr>
<td>17. College of St. Catherine</td>
<td></td>
</tr>
<tr>
<td>18. University of Minnesota</td>
<td>Cornell University (MBA)</td>
</tr>
<tr>
<td>19. Columbia College</td>
<td>Jewish Theological Seminary</td>
</tr>
<tr>
<td>20. Globe Business College</td>
<td></td>
</tr>
<tr>
<td>Undergraduate College</td>
<td>Graduate School</td>
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</tr>
<tr>
<td>21. Notre Dame University</td>
<td>University of Minnesota (Medical)</td>
</tr>
<tr>
<td>22. University of Minnesota</td>
<td>University of Oklahoma (Medical)</td>
</tr>
<tr>
<td>23. University of Minnesota</td>
<td>University of Illinois</td>
</tr>
<tr>
<td>24. University of Minnesota</td>
<td>Pennsylvania State University</td>
</tr>
<tr>
<td>25. Gustavus Adolphus College</td>
<td>Institute of Mining and Technology</td>
</tr>
<tr>
<td>26. St. John's University</td>
<td>Colorado State College</td>
</tr>
<tr>
<td>27. University of Minnesota</td>
<td>Duke University</td>
</tr>
<tr>
<td>28. Luther College</td>
<td></td>
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<tr>
<td>29. University of Minnesota</td>
<td></td>
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<tr>
<td>30. St. Olaf College</td>
<td></td>
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<tr>
<td>31. Harvard University</td>
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<tr>
<td>32. University of Minnesota</td>
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<tr>
<td>33. University of Minnesota</td>
<td></td>
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<tr>
<td>34. Purdue University</td>
<td></td>
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<tr>
<td>35. Luther College</td>
<td></td>
</tr>
<tr>
<td>36. University of Pennsylvania</td>
<td>(Wharton School of Business)</td>
</tr>
<tr>
<td>37. University of Minnesota</td>
<td></td>
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</tbody>
</table>
An analysis of the data in Table 13 reveals information regarding attendance at private vs. public colleges (graduate and undergraduate), in state vs. out of state schools attended, and gender-related data.

Twenty of the subjects completed undergraduate studies at private institutions; 17 finished at public institutions. Graduate training took place at eight private colleges and at 16 public institutions.

Twenty-six respondents attended undergraduate school in state; 11 went out of state. With reference to graduate school, 11 attended an in state institution; 13 went out of state.

Regarding gender, as previously stated in this document, 13 valedictorians were male and 8/39 were female; 12 salutatorians were female and 6/39 were male. (Note: This apparent disparity in numbers is related to co-valedictorians being cited during two years of the study and their being no salutatorian listed in school records for one of the years.)

Table 14 lists the year of graduation of the respondents and their present career.
<table>
<thead>
<tr>
<th>Year</th>
<th>Present Career</th>
</tr>
</thead>
<tbody>
<tr>
<td>1971</td>
<td>Homemaker/ part time French teacher</td>
</tr>
<tr>
<td>1971</td>
<td>Elementary School Teacher</td>
</tr>
<tr>
<td>1972</td>
<td>Corporate Accountant</td>
</tr>
<tr>
<td>1972</td>
<td>Lawyer</td>
</tr>
<tr>
<td>1973</td>
<td>Lawyer</td>
</tr>
<tr>
<td>1973</td>
<td>Physician</td>
</tr>
<tr>
<td>1974</td>
<td>Senior Human Resources Representative; (Lawyer)</td>
</tr>
<tr>
<td>1975</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>1975</td>
<td>Ph.D. Candidate</td>
</tr>
<tr>
<td>1976</td>
<td>Lawyer</td>
</tr>
<tr>
<td>1976</td>
<td>Physician</td>
</tr>
<tr>
<td>1977</td>
<td>Graduate Student</td>
</tr>
<tr>
<td>1977</td>
<td>Physician</td>
</tr>
<tr>
<td>1978</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>1978</td>
<td>Public health worker</td>
</tr>
<tr>
<td>1979</td>
<td>Medical school student</td>
</tr>
<tr>
<td>1979</td>
<td>Social worker</td>
</tr>
<tr>
<td>1980</td>
<td>Marketing manager</td>
</tr>
<tr>
<td>1980</td>
<td>Rabbinical student</td>
</tr>
<tr>
<td>1981</td>
<td>Accountant</td>
</tr>
<tr>
<td>1981</td>
<td>Physician</td>
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Table 14, continued

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>1982</td>
<td>Physician</td>
</tr>
<tr>
<td>1982</td>
<td>Graduate student</td>
</tr>
<tr>
<td>1983</td>
<td>Graduate student</td>
</tr>
<tr>
<td>1983</td>
<td>Hydro-geologist (consultant)</td>
</tr>
<tr>
<td>1984</td>
<td>Graduate student</td>
</tr>
<tr>
<td>1984</td>
<td>Undergraduate student (Law school intended)</td>
</tr>
<tr>
<td>1985</td>
<td>Graduate student</td>
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<tr>
<td>1985</td>
<td>Accountant</td>
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<td>1986</td>
<td>Undergraduate student</td>
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<td>1986</td>
<td>Undergraduate student</td>
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<tr>
<td>1987</td>
<td>Undergraduate student</td>
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<td>1987</td>
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<td>1988</td>
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<td>1989</td>
<td>Undergraduate student</td>
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<td>1989</td>
<td>Undergraduate student</td>
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</tbody>
</table>
This data can be further analyzed as to present occupation, number of interviewees involved in a given pursuit, and gender. The information is presented in Table 15.

Table 15. Present occupation, number of interviewees involved, and gender

<table>
<thead>
<tr>
<th>Present Occupation</th>
<th>Number</th>
<th>Gender</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
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</tr>
<tr>
<td>Undergraduate Student</td>
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<td>8</td>
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<tr>
<td>Graduate Student</td>
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<td>6</td>
<td>2</td>
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<tr>
<td>(Chemical engineering, mechanical engineering, zoology, music, medicine, rabbinical)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physician</td>
<td>5</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Accountant</td>
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<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Lawyer</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>College Professor</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Elementary School Teacher</td>
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<td>1</td>
<td></td>
</tr>
<tr>
<td>Homemaker (Part time French teacher)</td>
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<td>1</td>
<td></td>
</tr>
<tr>
<td>Hydro-geologist (consultant)</td>
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<td>1</td>
<td></td>
</tr>
<tr>
<td>Marketing manager</td>
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<td>1</td>
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<tr>
<td>Public Health worker</td>
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<td>1</td>
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</tbody>
</table>
Table 15, continued

<table>
<thead>
<tr>
<th>Present Occupation</th>
<th>Number</th>
<th>Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior Human Resources (Lawyer)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Social Worker</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

The above table reflects a preponderance of female undergraduates. This is due in part to all valedictorians and salutatorians from 1987 through 1989 being female. Although more graduate students are presently male, perhaps future studies will indicate a shift in this area due to the number of females achieving valedictorian and salutatorian status. Three interviewees from the 1987--1989 period are currently enrolled in technological fields. One is in biology; another is in accounting; one is in business. With the exception of two male college instructors, the other fields are not gender specific.

When queried as to whether they enjoyed their present career situation or educational status, all replied that they did with one exception. This individual stated: "I don't know." He has subsequently quit his position and has accepted a new one.
Present Motivators

As a follow-up question to interviewees' current status, respondents were asked what their present motivators are. Answers are cited in Table 16.

Table 16. Current motivators as noted by high achievers

<table>
<thead>
<tr>
<th>Motivators</th>
<th>Number of times noted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional</td>
<td>12</td>
</tr>
<tr>
<td>Academic</td>
<td>10</td>
</tr>
<tr>
<td>Intrinsic</td>
<td>7</td>
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<td>Personal</td>
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</tr>
<tr>
<td>Family</td>
<td>3</td>
</tr>
<tr>
<td>TOTAL</td>
<td>41</td>
</tr>
</tbody>
</table>

The total number of responses exceeds the number of interviewees as some respondents noted more than one factor. Typically, those in a full time profession noted job-related influences, while those in either graduate or undergraduate school mentioned academic motivators. The other replies came from a cross-section of the population.

Comments typical of those mentioning professional motivators include: "to excel;" to keep up with my law practice;" "to meet the goals of my law
practice, for example, jury trials, litigation, publications;" "to do what's right for the patients and to do good medicine;" "wanting to be a good and competent physician;" "the challenge and ability to make a difference in my field;" "a good yearly review;" "doing my best and wanting to progress up the career ladder;" "getting tenure;" "graduating and getting a job."

Representative remarks made by those having academic goals are: "to do well academically;" "getting good grades and preparing for a teaching career;" "getting good grades, but also having a greater appreciation of knowledge itself;" "getting good grades and establishing myself as an intelligent person in the college community;" "getting good grades to get into medical school;" "trying to be academically prepared for what I do in the future;" "doing the best I can academically so that I can do well when I get out;" "developing the skills I need for medical school."

A sampling of statements by those who alluded to intrinsic motivation as being currently important as a present motivator are: "motivation for knowing more about things;" "the internal force of wondering if I've done something, if I've done it well;" "the prospect of foregoing financial rewards in law for something more intrinsically interesting;" "an intrinsic love of learning in the area of patient care;" "to make the best of my talents;" "the inner desire to be honest with the work I give and not to cheat someone out of a product I'm supposed to be working on."

The humanitarian aspect was also cited. Comments made include: "helping students to have confidence in themselves;" "helping others;" "continuing education so that I can make a difference."
Personal motivators included improving of ballet techniques, working at being a good organist, considering the ego element involved in obtaining a Ph.D., and obtaining some material benefits subsequent to completing a degree plan.

The importance of family was also noted, for example, in the area of helping one's children see where they have extra ability and working at a good relationship with one's husband.

During the course of the interviews, all respondents noted that even on a post secondary level the motif of motivation was still important to them. Various ways in which they are currently influenced have been cited.

**Summary**

The findings of this study were first presented and then analyzed. Included in the presentation of the quantitative data was an assessment of the differences between the valedictorian and salutatorian and the top quartile of the class in the categories of absences and test scores.

Included in the presentation of the qualitative data was a statement of the findings derived from each question included in the interview protocol. Data were then presented in graphic and narrative forms.

An analysis of the quantitative findings concluded that the null hypothesis relating to the mean number of absences for the Valedictorians/Salutatorians and the Upper Quartile students were equal was rejected. Also rejected was the null hypothesis that the mean Normal Curve Equivalent test scores for the Valedictorians/Salutatorians and Upper Quartile students were equal.
An analysis of the qualitative findings concluded that many of the high achievers were primarily influenced by intrinsic forces. Extrinsic factors such as parents, teachers, peers, grades, siblings, and the desire for advanced education were also included as motivators. The climates of acceptance and academics were explored, with the latter climate involving academic recognition and grades. Students expressed feelings of enjoyment and satisfaction regarding their successful school experiences; division of opinion existed regarding the importance of recognition and grades. All interviewees received some type of post high school training, and all classify themselves as having a career, whether in the home, in a profession, or in academia. Just as the population was motivated to achieve during their high school years, all relate motivators which currently influence them. With regard to post high school motivation, professional and academic factors were mentioned with more frequency than were intrinsic motivators.
CHAPTER 5

SUMMARY AND RECOMMENDATIONS

This study was undertaken to explore the motivational factors which influenced those students who were ranked first and second in their respective classes during a 19 year period, 1971-1989. The study employed quantitative data to assess differences between the valedictorian and salutatorian and the top quartile of the class in the categories of absences and test scores; qualitatively, interviews were conducted with the top two students from each year to investigate participants' views on intrinsic and extrinsic motivators.

For the quantitative portion of this study, raw data consisting of MPA (Mark Point Average), days absent, and local percentile on standardized achievement tests were collected from students' cumulative record files. For the qualitative section, interviews were conducted with 37/39 of the high achievers. A common coding system was developed, and information was coded using the categories. The protocol included questions on general motivation, parents, teachers, peers, school climate, and personal feelings regarding the attainment of academic success. Additional questions were posed on choice of college, present career, and post-high school motivators.

Summary of the Findings

The findings of the study revolve around the objectives stated in Chapter 1. The study pointed out the difference between valedictorians and salutatorians versus the top quartile of their respective classes. The study also
indicated the motivational factors which the population felt influenced them such that they attained valedictorian or salutatorian status.

The conclusions of this study will be organized first in relation to quantitative data obtained and then in relation to qualitative findings. Although a Likert scale was not used during the interview process, some responses were analyzed and subsequently classified by degrees for the sake of clarity.

Possible predictors of future academic achievement include factors such as scores on Comprehensive Tests of Basic Skills and record of absences (McGrew, Gatta, Wicks, and Weeks, 1985). Such factors were analyzed quantitatively. Data analyses were conducted with SYSTAT on a Unisys microcomputer.

When subjecting the accumulated data to analysis, the null hypothesis that the mean number of absences for the Valedictorians/Salutatorians and Upper Quartile students was equal was rejected at the .05 level of significance. Hence this study reveals that the absentee level of Valedictorians and Salutatorians was lower at a statistically significant level than that of the Top Quartile students.

The null hypothesis that the mean Normal Curve Equivalent test scores for the Valedictorians/Salutatorians and Upper Quartile students were equal was rejected at the .001 level of significance. When subjecting the accumulated data to analysis, this research demonstrates that the test scores on standatdized tests for Valedictorians and Salutatorians were higher at a statistically significant level than those of the Top Quartile of the class.
The summation of the qualitative data includes the content of the questions asked to interviewees, the findings, their relation to the literature, and a recommendation.

1. Respondents were asked about the motivating forces that influenced them to do well in terms of their high school experience. The results support current motivational literature. The energizing of the organism (Vroom, 1964), the learner's resolve to put in some effort to perform a learning task (Boekarts, 1986), the tendency to find academic activities meaningful and worthwhile, and the desire to try to derive intended academic benefits from them (Brophy, 1987) are reflected in the valedictorians and salutatorians studied. Interviewees revealed their innate desire to learn, to do the best possible job in their academic pursuits, to make use of their raw talent, and, in general, to use their innate drive to get a job done.

Based on the findings of this study, it is recommended that both parents and teachers work to provide an environment suitable to students' academic interests (Brophy, 1986). Such an effort will work to increase the enjoyment of educational activities both at home and at school. The parents and teachers involved in this study worked to provide a nurturing ground for the development of intrinsic satisfiers for children such as achievement, advancement, possibility of growth, work itself, and responsibility (See Hertzberg, 1976).

This study supports the fact that extrinsic motivators such as parents and teachers affected the subjects and helped lay the groundwork for the cultivation of inner drive. It is recommended that such support continue through organizations promoting parent connections with the school and that teachers remain cognizant of the needs of high achievers.
2a. Interviewees were asked whom or what they considered influential in promoting their achievement. The subject of parents was addressed in this regard, with probes made regarding encouragement or support, reading in the home, and parental background.

The importance of parental influence is noted in the literature. (See, for example, Coopersmith, 1967; Purkey, 1970; Henderson, 1988; Bloom, 1985; Sloan, 1985, and Majoribanks, 1984). Areas covered in this research include parental expectations, the importance of the home environment in fostering the academic self, the value of the work ethic, and the factor of spending time with one's children. The home was shown to provide the safety, love, and belongingness needs alluded to by Maslow (1954). Interviewees addressed parental interest, encouragement, expectations, and the provision of a nurturing home environment, that is, one that values academics and intellectual curiosity. McClelland's (1961) theory of achievement is borne out by many of the subjects having aroused achievement motivation due to challenge from the home environment and to reasonably high parental expectations. Many parents of interviewees challenged themselves academically as evidenced by parental academic backgrounds and professional careers.

Based on the findings in this study, it is suggested that parents provide a warm, caring atmosphere which nevertheless instills in children the concept of achievement motivation coupled with positive expectations. Parents should spend time with their children both at home (for example, in reading activities, discussing or helping with homework, keeping communication channels open) and should, as stated previously, work in concert with the school. (See Smith's study, cited in Tangri and Moles, 1987).
2b. Respondents were queried as to whether teachers were influential in promoting their achievement. If an affirmative reply was received, probes pertaining to expectations, support, courses taught, and meaningfulness of task were made. Interviewees were also asked if teacher praise affected their performance.

Pavlov's (1927) work regarding respondent conditioning is related to the environment which teachers create in the classroom, an environment stimulating students to provide a conditioning response leading to productive work. Such an environment was created by teachers whose attributes were categorized into four groups: academic, inspirational, interpersonal, and managerial. Whereas some interviewees stated that they were not influenced by their instructors, many findings supported the literature. Brophy and Good (1970) and Good (1987) write of the relationship of teacher expectations to student performance. Brophy (1986) posits the importance of a combination of appropriately challenging demands, an area noted by interviewees as being important. After students aimed to meet expectations and challenges, they looked for feedback (Cotton and Savard, 1982; Ausubel, 1968). Respondents appreciated being allowed to work at their own pace (Lewin, 1936) and being exposed to relevant subject matter (Rogers, 1969). Tauber (1985) cites the respect for the instructor, not necessarily the position; some students alluded to positive regard for the instructor. Ellis (1962) writes of enhancing motivation through examining students' attitudes and beliefs relative to their abilities and tasks. In this regard, interviewees mentioned the importance of teachers' individualizing instruction. The awakening of curiosity through classroom
instruction was also noted; Webb and Baird (1980) write of curiosity as a motivator.

In conjunction with climate, students were asked about the value of praise, with 22/37 attesting to its importance. This correlated with Brophy's (1987) work citing praise as a consequence valued by students.

Based on the findings in this study, it is evident that maintaining a challenging atmosphere for all-ability learners is a difficult task. It is nevertheless recommended that teachers strive to provide a stimulating classroom environment (for example, in the promotion of higher order thinking skills, the use of simulations, challenging questioning strategies, and problem solving skills), to maintain high expectations for all students, to follow a curriculum commensurate to students' abilities which encourages curiosity, provides prompt feedback, and gives praise where appropriate.

2c. In a continuation of the motif of whom or what do you consider influential in promoting achievement, the subject of peers was addressed. Interviewees were asked what the students were like that they associated with, whether this friendship involved a sense of competition, whether their friends went on to college, and whether they still keep in touch with them.

Twenty-one out of 37 of the interviewees indicated that their friends were primarily high achievers, supporting Kandel's (1978), Mergendoller's and Marcham's (1987) and Siman's (1971) research which concludes that adolescents who share attributes in common tend to associate with each other. Most of the interviewees' friends went on to college, correlating with Spennier and Featherman's study (cited in Mergendoller and Marcham, 1987) which posits that relationships have an effect on students' academic performance and
especially on lofty educational aspirations. This research supports Bain and Anderson's study (cited in Mergendoller and Marcham, 1987) which states that students whose friends desire to go to college are also more likely to continue their education beyond high school.

This research also concluded that friendships did not involve a sense of competition for most of the interviewees and that some contact with high school associates was maintained by 33/37 of the respondents.

No new data were discovered in this study regarding peer relationships. It is recommended that the school foster activities of an academic nature—cooperative learning strategies, simulations, decision-making activities—to encourage interchanges among students and to build a sense of community and cooperation. It is further recommended that the school promote extracurricular activities of an aesthetic nature—math team, chess club, debate, academic decathlon, fine arts displays and the like—which will provide a meeting ground for the intellectually talented to associate with their peers.

2d. The final series in relation to whom or what interviewees considered influential in promoting achievement pertained to the school environment. The question related to the climates of acceptance and academics. In regard to the latter climate, respondents were also queried about grades.

Whereas 20 interviewees said that they felt accepted, degrees of alienation and/or isolation were evinced by the 14 students who felt "somewhat" accepted and the three who considered themselves not accepted. The latter two groups experienced partial or complete lack of Maslow's (1954) belongingness needs, needs which ensure one a place in a given group. Most
of the total number of the population noted a comparative degree of acceptance correlating themselves with their peer group.

The academic climate is important in integrating students into an environment compatible with achievement. The importance of such an atmosphere is cited in Coppedge and Exendine (1987), Good (1987), Cotton and Savard (1982), and Koerner (1987).

More students (16/37) gave a qualified "yes" to the school's having a positive academic climate than those giving an unqualified affirmative response (12/37). Nine students rated the academic climate average, gave no opinion or stated "no," signifying that in their opinion the school's overall environment lacked academic excellence.

A disparity existed among students' perception as to whether or not interviewees' academic achievements were sufficiently recognized. Many took offense to the fact that those in athletics and/or music received more recognition than they; others considered it a travesty that the valedictorian and salutatorian were not publicly recognized until the final year of this study. A body of literature exists on the value of recognition and/or rewards. For example, Herzberg, Mausner, and Schneiderman (1959) write of the importance of obtaining recognition, the value of work itself, and the importance of individual achievement. Campbell, Dunnette, Lawler and Weick (1970), in a review of organizational climate literature, contend that reward orientation is based on such factors as the reward itself, general satisfaction, and promotion and achievement orientation. Anderson (1982) states that rewards and praise in high-achieving schools are frequent and public. She reveals that schools which recognize student accomplishments tend to have higher levels of
accomplishment and that rewards for good behavior are associated with improved academic outcomes.

In conjunction with academic excellence, the subject of grades was addressed. Twenty-seven of the interviewees noted the personal importance of grades. Research indicates that grades are an extrinsic motivator. [See Stipek (1982), Brophy (1987), and Covington (1984).]

The environment in question got mixed reviews regarding both acceptance and academics. As a result of this research, it is recommended that more be done to tout those who achieve academically. A school which offers academic letters, promotes the student of the week, widely incorporates students' achievements into the media, participates in academic competitions, and publicly recognizes and awards valedictorians, salutatorians and their accomplishments will go far toward promoting a scholarly environment geared toward lauding high achievers and making academic excellence as acceptable as excellence in extracurricular activities. Who knows how many students in the top quartile were unwilling to defy peer pressure in a non-scholarly atmosphere such as that cited in this study and therefore did not rise higher in the academic ranks? Did they sacrifice their academic potential in order to attain social acceptance?

3. In the next question, the emphasis shifted from extrinsic motivation to the individual. Interviewees were asked how they felt personally when they were successful. Due to their academic success, students gave only positive responses regarding their feelings. The opportunities for success correlate with McGregor's (1966) philosophy regarding the job (in this case, the school) providing opportunities to satisfy higher level needs. The element of student
effort leading to success was also evinced in student responses. [See Rotter (1966); Weiner (1974); Wang and Stiles (cited in Wittrock 1986); and Wittrock (1986).]

A number of students viewed learning as an end in itself, particularly in reference to those subjects which interested them. Ausubel (1968) states that motivation is probably less indispensable for meaningful reception of learning than for any other kind of learning.

The thrust of the question regarding personal feelings regarding success and pertaining to learning in itself relates to intrinsic motivation; Bruner (1966) finds that the amount of research on the effect of intrinsic motivation on academic motivation is small and that its importance in the acquiring of intellectual skills is yet to be determined.

Based on the findings of this study, it is suggested that high expectations for all students be maintained to encourage the necessary effort not only to achieve academic recognition but also to learn material as an end in itself. It is recommended that individualization and variety in the curriculum be effected to challenge students at every level.

4. Interviewees were asked what college they attended. All subjects (37) attended some type of post-secondary training; 24 attended graduate school; nine are still in undergraduate training. More male students have attended graduate school, but seven current undergraduates are female, so a shift may occur.

Subjects were asked to name their present career and were queried as to whether or not they liked it. The study ascertained that the population's current careers include: students (17), physicians (5), accountants (3), lawyers
college professors (2), elementary school teacher (1), homemaker (1),
hydro-geologist (1), marketing manager (1), public health worker (1), human
resources representative (1), social worker (1). All indicated that they liked their
present status with the exception of one individual who was in the process of a
job change. It appears that just as these high achievers experienced successful
feelings regarding their educational experience in high school, so too are they
encountering fulfillment in their post-secondary careers.

No profession was gender specific. This study contrasts with Arnold and
Terry's (1985) longitudinal study which concluded that the dramatic difference
between men and women who were high school valedictorians is that women
lower their estimate of their intelligence and lower their plans for career
participation patterns of development shown by college women in general.
Although this study did not investigate the general population of college
women, female graduates involved in this study generally pursued career
goals; current female undergraduates indicated plans for graduate school and
subsequent professional careers.

Information presented herein also differs from Denny's study (as cited in
Conroy, 1989) which finds that two-thirds of the women in the study have begun
to lower their career hopes by their sophomore year in college. Many women
interviewed in this study are career-oriented and are actively involved in a
number of professions.

5. Respondents indicated current motivators relating to professions (12),
academics (10), intrinsic (7), humanitarian (5), personal (4), and family
concerns (3), with some naming more than one factor. No research was located
relating to current motivating factors of students who had achieved valedictorian
or salutatorian status. The research within this study, however, indicates a shift from students' stated primary drive in high school, inner drive. Current career or academic goals surpass intrinsic desire on a post high school basis for the population in this study. This does not, however, diminish the importance of intrinsic motivation. Perhaps the intrinsic drive at this point has become more focused on a long term goal.
Recommendations for Further Study

In that this study was restricted to a single high school with primarily middle-income citizens in a midwestern community, it is recommended that a similar study should be undertaken in an urban community as a contrast to the suburban community in which this study was undertaken. Second, additional research should be done contrasting schools which provide high levels of academic recognition versus those that do not. Third, further research should attempt to reveal more findings on intrinsic motivation of high achievers. A longitudinal ethnographic study of high achievers would be one method of effecting this type of research. Last, other areas of interest should be studied in more depth with respect to high achievers as a group and the importance of extrinsic motivators: parents, siblings, teachers, teacher praise, peers, recognition, and grades.
APPENDIX A

INTERVIEW PROTOCOL

Background on Motivation:
Motivation is an ambiguous word. What does it mean to you in terms of your high school experience?

Extrinsic Motivation:
Whom or what do you consider influential in promoting your achievement?

Probes:
- Parents? Did they encourage you to work hard?
  - Did they support you in school?
  - Was reading an important part of your background?
  - Could you speak to the educational or career background of your parents?
- Teachers? Were teachers influential in promoting your achievement?
  - Were teacher expectations or support factors?
  - Was it the specific course the instructor taught?
  - Was your success related to those courses which had more meaning for you?
  - Did teacher praise affect your performance?
Peers?  What were the students like that you hung around with?
Did your friendship with them involve a sense of competition?
Did these students expect to go on to college?
Do you still keep in touch with them?

School Environment
Did you feel accepted within the school?
Did your peer group feel accepted?
Did any not feel accepted?
Did you note any difference in acceptance between you and them?
Did the school, in your opinion, promote academic excellence?
Were academic achievements recognized?
Did grades enter into your motivation?
   Were you thinking of future jobs?

Focus on Self
How did you feel personally when you were successful?
   Probe: Did you consider learning as an end in itself?

Post Secondary Information
What post secondary training did you receive?
What is your present career?
Probe: Do you like it?

Present Motivation
What motivates you now?
  Probe: You made good grades in school. Is anything now a substitute for grades?
  Probe: Money?: Going up the career ladder?
## APPENDIX B

### CODING SYSTEM: MOTIVATION INTERVIEWS

**Intrinsic Motivation**
- Within: W_
- Inside: I_
- Desire to Do Best: DB
- Internal Competitiveness: IC
- High Standards: HS
- Interest: IN
- Pride: PR
- Learning As an End: LE

**Extrinsic Motivation**
- Parents: PA
- Peers: PE
- Teachers: T_
  - Expectations: E_
  - Support: S_
  - Meaningfulness: M_
  - Praise: P_
- School Environment: SE
- Acceptance: AC
- Academic Excellence: AE
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<td>Current Motivators</td>
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REFERENCES


Stipek, D.J. (1982). *Motivating students to learn; A lifelong perspective.*
Washington DC: National Commission on Excellence in Education.

New York: Longman.


*Clearing House, 54,(1),* 27-29.


