

AN ABSTRACT OF THE THESIS OF

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Title/Senior High School Student Opinions of the Need For a Ninth Grade Academic Transition Program.

Abstract approved:

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The purpose of this study was to investigate the need for an academic transition program at the beginning of the high school experience for 90 to 100 critical - need ninth grade students at North Thurston High School in Lacey, Washington. Opinions of ninth and twelfth grade high school students with a high grade point average and those with a low grade point average were measured to determine the justification for such a program.

In order to determine whether or not there were differences of opinions it was necessary to pinpoint the differences between the two groups. A thirty - one item survey utilizing a Likert type scale was developed to assess the opinions of both groups of students. The Likert type scale was chosen because it would be more adequate for the measurement of degrees of opinion concerning topics or issues to be presented to the high school students sampled in the study.

The thirty - one item survey was administered to a ninth grade population of approximately four hundred and twenty - five students and a twelfth grade population of approximately three hundred and fifty students at North Thurston High School. T - scores on the two groups were used to determine if significance existed between the means of the two groups. Factors analysis was then selected to cluster survey items resulting in the formation of ten factors. The utilization of a two by two ANOVA design then determined that significant difference existed in three of the ten factors.

On the basis of the data collected it can be concluded that the hypothesis cannot be rejected. The study requires the necessity of an academic entry program for critical - need ninth grade students.

The evidence suggests that the middle level block program approach of teachers, administrators, and support staff might be the most appropriate curriculum arrangement. Furthermore, such a curriculum arrangement with need to give attention to the various ways of knowing teenagers and seriously engaging them in school studies, be less restricted/dominated by the textbook, become less fragmented into separated subjects include a study skills program oriented to the unique needs of the critical - need ninth grade students, enlist the involvement of teachers who enjoy teaching ninth graders, and institute an advisor - advisee program in which teachers will fulfill multiple obligations (teacher - counselor - advisor - manager). It can be concluded that critical - need ninth grade students would benefit from such an creative alternative to present high school curriculum organization and instruction.

Senior High School Student Opinions

Of The Need For

A Ninth Grade Academic Transition Program

by

James E. Koval

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SENIOR HIGH SCHOOL  
STUDENT OPINIONS OF THE NEED FOR A NINTH GRADE  
ACADEMIC TRANSITION PROGRAM

CHAPTER I

INTRODUCTION

There is a growing public concern that student achievement is in need of constructive attention (Myrick, 1984). In the search for educational excellence, educators and politicians across the nation have initiated many educational reforms.

Almost every state legislature has recently addressed concerns about education. The Washington legislature in 1984 increased its mandated standards for graduation requirements to include three years of english, three years of mathematics, three years of science, and three years of social studies.

Universities and colleges have likewise been challenged to raise their standards and expectations. They continue to adopt more rigorous programs and admission requirements. Subsequently it has become more important for students who want to attend college to plan their high school education carefully (Myrick, 1984). It is also imperative that students, other than those who do not plan to attend

college, experience a more coherent academic program (Myrick, 1984). They need to make the most of their high school education and meet graduation requirements. As the educational level of the nation rises, competition for jobs will also increase among college and high school graduates (Myrick, 1984).

#### Context of the Problem

High school problems appear in a variety of distinct and vivid terms. Teachers may see them as a lack of interest in academic work or a loss of faith in teachers. Administrators worry about an increase in defiant behavior. Parents are distressed that their children seem to take school so lightly and to avoid the path by which they made their way (Cohen and Newfeld, 1981). There is also little doubt that the increased development of the middle school program, as reported by Conrad Toepfer, will influence the curriculum of the American senior high schools in the 1980's (Arth, Messer, Stingley, Lawton, 1984).

Many high schools are moving from three to four year institutions. Helping ninthgraders feel at home in their new school is important; but, just as critical is the school's need to get to know the new students. Administrators, teachers, parents, and students have consistently chorused their frustrations with ninth grade forms of maladjustment (Blair, 1984).

In 1985, Van Sciver indicated that steps must be taken to construct a plan to help middle level students make the transition to

the high school. Educators must plan effectively for a productive 12 year experience for their students. Unfortunately, articulation and planning between high school staff members and those in the feeder middle level school are not always carried out. Differences in educational practices and philosophies at the two levels results in what may be best defined as blatant educational malpractice (Van Sciver, 1985).

According to Van Sciver (1984) the resulting disruption in the continuity of the student experience can manifest itself in a near catastrophic adjustment phase. Lower grades, high absenteeism, less involvement in school activities, and increased discipline problems are not uncommon.

Many high schools choose to provide educative information that focuses on how parents and students should go about planning for their first year of high school. However, students most enthusiastic about high school, those most highly motivated to succeed, are generally those who have yet to take their first high school class (Riley, 1984). Unfortunately, many high schools fail to capitalize on the eagerness of the ninth graders and as a result adjustment problems become rampant.

#### Statement of the Problem

The purpose of this study is to investigate the need for an academic transition program at the beginning of the high school experience for 90 to 100 critical - need ninth grade students at North

Thurston High School in Lacey, Washington. Opinions of ninth and twelfth grade high school students with a high grade point average and those with a low grade point average will be measured to determine the justification for development of such a program.

#### Definition of Terms

The following terms are defined as they relate to the present study.

##### BLOCK PROGRAM

The block program is staffed with a team of four teachers who are assigned 90 to 100 critical - need ninth grade students. It consists of a strand of four classes: Pacific Northwest History, Language Arts, Mathematics and Science. This arrangement provides the four teachers a common planning time and allows one to serve as homeroom advisor.

##### CURRICULUM

Haas defines curriculum as "all of the experiences that individual learners have in a program of education whose purpose is to achieve broad goals and objectives, which is planned in a framework of theory and research of past and present professional practice" (p.4). The actual curriculum can be defined as the learner's experiences in sharing the planning of the curriculum, or of the student's actual participation in the planned learning activities (Haas, 1984).

#### NINTH GRADER

The ninth grader is a student admitted from Chinook Middle School (a seventh/eight grade organization) in September, 1986, to North Thurston High School (a ninth to twelfth grade organization) in Lacey, Washington.

#### TRANSITION PROGRAM

Transition program is defined as the educational program provided to a fourteen to fifteen year old student as they leave the middle school and enter a 9-12 public high school (Tombury, Johnson, 1985).

#### OPINION

An opinion is a view, judgement, or appraisal formed in the mind about a particular matter (Webster).

#### CRITICAL - NEED STUDENT

A critical - need student is a 14 or 15 year old ninth grader who is identified as an individual who will experience academic difficulty in making the physical, social and/or emotional adjustment from the middle school to high school level. The critical need student is identified through the district and state testing programs, local mathematics and writing tests, and/or middle school educator's recommendations. Each critical - need student becomes a participant in the high school's ninth grade academic transition program.

## Assumptions About People

### Related to this Study

Individual high school students have the ability to formulate opinions, and change those opinions. Therefore the writer believes these students need to be involved in setting major educational goals for themselves. As part of their secondary school education, such students undertake the integration of diverse concepts related to their learning experience. Such integration is designed to culminate in their public school graduation. Information about their opinions is necessary in order to put into effect the transition program previously defined.

## Assumptions About The Testing

### Instrument Related to this Study

The writer believes that the measurement instrument will sufficiently measure what it has been designed to measure.

It is believed that the ninth grade students involved in the study come from a population that is a predominately white and middle class in nature. This study has the limitation of testing students enrolled in the ninth and twelfth grade only in North Thurston High School during the 1986-87 academic year.

## CHAPTER II

### REVIEW OF THE LITERATURE

The review of the literature was concerned with a profile of the ninth grader; what high schools seek to accomplish; a ninth grade program arrangement for positive academic transition, and possible implications of the proposed research.

#### A Profile of the Ninth Grader

Riley (1984) indicated that the students most enthusiastic about high school and those most highly motivated to succeed were generally those who had yet to take their first high school class. Milgram, when asking: "what are ninth graders like?" answered by stating "the question has something in common with the one asked by the Mongol emperor Kublai Khan of Marco Polo in 1275 when he inquired, 'what is Europe Like?'" Polo stayed on for twenty-four years and spent much of his time answering Khan's question (p.5). Milgram believed it would take at least half that long to describe adequately the fourteen and fifteen year old youngster. Therefore, what follows are general characteristics of the ninth grader. These attributes must be



considered in assessing the need for an educational program designed for this particular group of students.

According to Milgram fourteen to fifteen year old youngsters share a common set of characteristics. However, it should not be forgotten that there is a broad range of variation and that these variations are significant for both the youngsters and the schools they attend. The factors that cause these variations are numerous and include intelligence levels, rates of physical maturation, motivation, socio-economic status, and family make-up. The following are brief summaries of the physical, emotional, social, and cognitive status of the ninth grader.

#### PHYSICAL LEVEL OF DEVELOPMENT

The physical change in adolescents affects practically all other aspects of their home and school lives. However, Milgram indicated social, psychological and cognitive maturation usually do not occur with physical growth and maturation. Physical growth is also an area where the changes are nearly universal; where differences between the sexes and variations among the same sex exist.

Hormones stimulate growth in both sexes. The growth due to hormonal changes produces dramatic external physical change. The ninth grade female has already come close to her full adult height. The ninth grade boy has more recently started his growth spurt and is pleased to find himself getting taller (at last) than his female counterpart.

The distribution of body weight is also different for fourteen and fifteen year old youngsters. During the male growth spurt, shoulders become broader, and legs, compared with trunk length, grow longer. Girls lose less fat in their growth spurt and fat deposits occur in the breasts, thighs, and backs of upper arms.

While it is true that males eventually develop larger muscles than females, the age of fourteen may not necessarily be the time to prove it. Girls attain their peak muscle growth during their height spurt, but boys achieve their peak in muscle development approximately one year after their growth spurt.

The majority of girls at this age have already experienced their first period, pubic hair is fully developed, and breast development is nearly mature. Among the boys, most have developed enlarged testes and scrotum, though genitalia may not yet be of adult size. It is around this time that boys sweat glands increase in size, contributing to facial acne and increased body odor.

In summary, the physical growth of the fourteen and fifteen year old ninth grader can be said to be rapid. According to Haas (1980) both males and females will need plenty of food and sleep to maintain good health. On many occasions they may have excess energy that needs to be worked off in lively physical activity.

#### EMOTIONAL LEVEL OF DEVELOPMENT

The emotional status of the ninth grader is difficult to describe. Fourteen and fifteen year olds feel that they have taken a giant step

out of childhood. Haas (1983) describes the ninth grader as one who has begun to seek independence to meet his/her emotional problems. The ninth grader has begun to see the need to make his/her own decisions, and accept whatever consequences come from those decisions. According to Milgram "it is time for the search for a personal identity, and the process of achieving their identity will evoke a wide range of emotions, including self-doubt, conflict, experimentation, and confusion." (p.6). Tied to the search for personal identity is the desire to be more autonomous, to gain more control and power in governing the activities of life. What is termed behavioral autonomy is clearly demonstrated by many fourteen and fifteen year olds. Keeping a part-time job and being involved in after-school activities are demonstrations of such autonomy.

Fewer ninth graders have achieved emotional autonomy, and most are still highly dependent on parents for nurturance (Milgram, 1985). The distinction between behavioral and emotional autonomy is often lost by parents, who may interpret the ninth grader's drive for independence as a rejection of family love and concern.

The quest for identity and autonomy comes easily to some and not so easily to others. However, for all there will be moments of moodiness, misery, and depression (Milgram, 1983). Too often, if parents are not understanding, or if sensitive teachers are not available, the ninth grader feels lonely, isolated, and ready to give up. Most often, however, ninth graders have good track records for

pulling themselves out of periods of depression and optimistically continuing with the struggle for self and independence (Milgram, 1985).

#### SOCIAL LEVEL OF DEVELOPMENT

The social level of development of ninth graders has a lot to do with their physical and emotional development.

According to Milgram:

the early maturing male will find himself given greater opportunities for athletics, interaction with girls, and leadership positions as compared with the late maturing male. The late maturer, perhaps deprived of such opportunities, may develop a negative self-concept with feelings of inadequacy, dependency, rejection and rebelliousness (p.7).

Milgram (1985) believes the early maturing girl does not have the same advantage as her male counterpart. Often regarded as older than her actual age, the early maturing girl often finds herself with older males, facing greater social pressure. Generally, however, early maturity for an adolescent girl does not influence her status among her peers as it does for the early maturing boy.

According to Haas (1983) and Milgram (1985), as the importance of peers increases, the public denial of the importance of the parent also increases. The ninth grader begins to find independence to meet his/her emotional problems. The ninth grader moves away from the care, affection and guidance afforded by parents and guardians. Haas (1983) has advocated parents overlooking a child's shortcomings and instead, offering praise when accomplishments have required such action.

Milgram (1985) states that such behavior, as previously described, is not as related to independence, as to social appearances. According to Milgram (1985) one of the very important goals of many ninth graders is to prove to their peers that they are quickly becoming adults.

Through middle childhood, parents and families serve as the primary model for the ninth grader. However, as the ninth grader enters high school, he/she begins to identify with a peer group of friends who are similarly seeking their own identity. Most ninth graders are ready to join one of the many subcultures that exist in schools. Some of these subcultures will emphasize studies and aspirations for college; others dating, smoking and rejection of studies and school; still others will be associated with athletics, popularity and school activities.

The peer group provides more than independence from the family; it also serves as a means to judge one's own behavior and clarify the personal identity of the ninth grader (Milgram, 1985). Friendships

are an important part of the ninth grader's life. Generally at this age the adolescent begins dating. Sexual interest is an integral part of the adolescent's developing identity (Milgram, 1985).

#### COGNITIVE LEVEL OF DEVELOPMENT

The final stage of Piaget's theory of cognition is reached by some at ages eleven or twelve. Therefore, according to Milgram (1985) ninth graders are prepared to deal with abstract reasoning and systematic experimentation.

Ninth graders are very much aware of their intellectual abilities relative to the school population. However, a fairly high percentage of ninth graders are still testing in the concrete operational stage - the stage during which the child becomes more autonomous as a thinker. This is an indication that they still have difficulty in abstracting a general principle from a particular example.

Two concepts related to social cognition are especially worth noting. The first Milgram (1985) calls "imaginary audience and occurs when the adolescent believes that he or she is constantly being observed because of his general importance (p.8)." While it can result in excessive shyness and an increased need for privacy, the "imaginary audience" can also result in heightened self-consciousness and concern for one's appearance (Milgram, 1985).

The second concept Milgram calls the "personal fable." Personal fable involves the over exaggeration of the ninth grader's own uniqueness. They come to regard themselves as very special and

unique. Yet, according to Milgram "they more often simply lead to boorish behavior dripping with egocentric mannerisms" (p.9).

#### What High Schools Seek To Accomplish

According to Steven K. Miller (1985), effective secondary schools have (1) a clear sense of purpose, (2) a core set of requirements for all students plus diverse courses that will challenge high achievers, (3) high expectations for teachers and students, (4) a commitment to educate each student as completely as possible; (5) a safe, orderly learning environment, (6) a spirit of teamwork among teachers in preparing learning materials for students, (7) a resiliency and problem solving attitude, (8) a belief among students that there is a reason for them to go to school each day, and (9) quality instructional leadership.

Ernest Boyer stated that "today's high school is called upon to provide the services and transmit the values we used to expect from the community and the home and the church" (p. 57). Effective secondary schools have five characteristics in common: strong leadership, emphasis on basic skills, a positive and orderly climate, frequent testing coordinated with instruction and finally, high expectations for students (Levine, Levine and Eubanks, 1984). Therefore, when one asks the question what do Americans want high schools to accomplish? The answer simply put, is they want it all.

Sizer, (1983) indicated that in most high schools, a shorter, simpler, better defined list of goals is necessary." Boyer (1985) proposed four essential goals for today's high schools. He included the following in his goal statement;

1. The high school should help all students develop the capacity to think critically and communicate effectively through a master of language.
2. The high school should help all students learn about themselves, the human heritage, and the interdependent world in which they live.
3. The high school should prepare all students for work and further education.
4. The high school should help all students fulfill their social and civic obligations.

What is needed, and what the preceding four goals constitute is a clear and coherent vision of what high schools are seeking to accomplish. According to Boyer (1983) the four goals can be accomplished by establishing two curriculum priorities: "language" (the most essential tool for learning), and secondly, "a core of



common learning"; defined as a program of required courses in literature, the arts, foreign language, history, civics, science, mathematics, technology and health which extend the knowledge and broaden the perspective of every student. Thus, during high school all students should move toward "cultural literacy" (Boyer, p. 95). They should also learn about the variety of ways civilization is sustained and enriched through language.

Finally there is strong support for including some joy in learning. Boyer (1983) borrowed from Mortimer Lattimer who indicated that:

"Without some joy in learning, a joy that arises from hard work well done and from the participation of one's mind in a common task, basic schooling cannot initiate the young into the task of learning, let alone give them the skill and the incentive to engage in it further" (p. 148).

In summary, high schools seek to create an atmosphere in which the school community views itself as special, valuable, and worthwhile with learning as it's primary goal. According to Cohen and Newfield, such expectations on the part of a high school generates the mutual commitment that every school and classroom must have if it is to be a good place to learn.

A Ninth Grade  
Curriculum Arrangement  
For  
Positive Academic Transition

Determining which curriculum pattern is suited for positive academic transition from the middle level to the high school level may not be possible. However educational researchers, including Haas (1983), state that a successful curriculum arrangement for a positive academic transition must include: learners seeking solutions to experiences and problems of physical change; learners learning to deal with wider social experiences and problems of physical change; opportunity to explore areas of knowledge and skill to help determine potential interests; a transition between transecence and middle adolescence; an atmosphere adjusted to the developmental level of learners; and finally, learners dealing with value questions that arise because of their growing need for independence, and rapid changes in society.

The National Association of Secondary School Principals' "How Fares the Ninth Grade?" (1985) makes generalizations that demonstrate areas of possible concern to secondary school administrators and educators. Those concerns include a clear lack of meaningful intellectual interaction between students and teachers, an instructional program dominated by the textbook, which is almost, it seems, restricted by its contents, a ninth grade program fragmented into separate subjects, little provision for diversity existing in the

instruction given ninth graders, too much class time being taken up in routines - calling roll, distributing papers, waiting, sitting for excessive periods of time and engaging in too many passive activities, and finally an almost complete separation of students' socialization interest and planned classroom activities.

To meet the broad based high school educational objectives outlined previously and to address the concerns of the National Association of Secondary School Principals (1985) this writer proposes a Ninth Grade Block Program. The Ninth Grade Block Program would provide a curriculum arrangement which would help identify critical - need ninth graders and allow them to achieve academic success in high school. The Ninth Grade Block Program would have the following characteristics:

1. Include both the first and second semesters of the ninth grade academic year;
2. Consist of a critical - need group of ninety (90) to one-hundred (100) ninth grade students identified for the block program through the Comprehensive Tests of Basic Skills, eighth grade teacher recommendations and Mathematics and Writing Skills tests developed by high school instructional staff and administrated

by middle school staff to eighth grade students;

3. Consist of four classes. Pacific Northwest History, Language Arts, Mathematics and Science;
4. Consist of four teachers, one from each of the recommended strand courses plus possible support staff, to teach the students in the strand classes and to serve as homeroom advisors;
5. Allow for a common planning period for these core teachers for improved communications between themselves, parents and support staff in matters of coordination and student welfare;
6. Provide for an assessment of student outcomes including the final grade point average for ninth grade, as compared with the final average for eighth grade, scores on teacher designed Mathematics, Science, Pacific Northwest History and Language Arts tests, which would measure gains associated with the academic variables, total number of student absences, and total number of days suspended due to discipline referrals.

A joint statement of the National Association of Secondary School Principals' Committee and Council on Middle Level Education (1983) concludes that adjustments need to be made both in the content and in the expectations of high school and middle level programs. From this report it is evident that no single program will facilitate a successful academic transition from the middle level to the high school.

The Council on Middle Level Education (Arth, Brashear, Hamre, Johnston, Toepfer, 1985) confirms that great diversity cannot be realistically expected to cease as youngsters enter the high school. This diversity gives emphasis to the need for high schools to examine the degree to which their ninth grade academic programs and expectations provide for such ranges of maturity, and hence a successful academic transition experience.

In summary, there is strong support for an academic entry program that takes into account the readiness of ninth graders for a high school learning environment. The readiness of some youngsters for a high school learning environment is present in the middle level itself. However, the high school has not found late maturing youngsters nearly so adaptable to what has often been a narrowly focused and predictable expectation for student behavior and readiness to learn. Coercion or orders "to grow up" by teachers will have no real impact until the kinds of maturation necessary take place for these "immature" students. Teachers need to begin to know the students as individuals and to understand their worlds and life

styles. Therefore, changes in the high school's ninth grade academic curriculum of the high school need to include a middle-level approach by teacher, administrators, and support staff for as much as 25 percent of the entering students (North Thurston School District, 1981).

### Implications of the Research

Since the 1930s, American education has experienced cyclical reform efforts. Each cycle is generally heralded by intense criticism, angry, expose'-type books, and a search for scapegoats (Sizer, 1983). Study groups and commissions usually follow, and in due course reasoned recommendations are issued. Those recommendations that seem to best address the criticisms are adopted, thus soothing the public. However, fresh criticisms inevitably arise and the process repeats itself.

Current reports from "Excellence" task forces and commissions legitimize the more traditional, back-to-basics trends that emerged in schools in the 1970s after adverse public reaction to the perceived disorder of the late 1960s (Sizer, 1984). These trends have included a stronger connection between the economy and the school, less freedom for students and more authority for adults in today's high school. Other recognizable trends include state government becoming the principal agent of reform, the establishment of various types of schools, with parents having the ability to choose which ones their children will attend, schools and students being judged on the basis

of measurable results of teaching and learning, and finally, the cost of schools having to be reduced. However, in embracing these reforms simultaneously, society has created a public school system in which there are winners and losers (Powell, Farrar, and Cohen, 1985).

John Goodlad (1984) characterized a good high school as one that knows its time and place in history and is meeting its priorities by cultivating them within its culture and subculture. According to Powell, Farrar and Cohen (1985), today's high schools are proud of the size and the diversity of the group they serve. The main strategy of high schools for keeping students happy is to provide a never-ending array of educational opportunities. Unfortunately, students are not encouraged to choose wisely among the educational opportunities offered. This lack of push is another accommodation that schools make in order to keep the peace (Powell, Farrar, and Cohen, 1985). The accommodation usually works - and often too well. Students who wish to avoid learning can usually still manage to graduate.

Students at both extremes of the school population tend to have organized pressure groups or parents who ensure that they receive attention. But average students - the majority - and where the critical-need students can be found - cause little trouble and are allowed to pass through the system quietly. High schools make little or no attempt to engage them in serious learning (Powell, Farrar, and Cohen, 1985).

According to Sizer, "the high school's goal should be to help adolescents learn how to use their minds well, to think clearly and imaginatively, and to be well-informed" (p. 11). On the other hand Sizer (1983) challenges the assumption that an "excellent" education is necessarily the sum of credit hours of english, mathematics, social studies, science, and modern language. What Sizer (1984) proposes is a simpler, more coherent curriculum, and argues that a few things learned are preferable to a program "that tries to cover a sweep of knowledge with inescapable superficiality" (p. 11).

Powell, Farrar, and Cohen's (1985) analysis of the current reform proposals are that they are profoundly misdirected. The reforms aim to improve education by increasing, and in some instances, mandating school requirements, yet a large number of students now in high school seem quite immune to such requirements. These students, in many instances, are educationally purposeless. They attend for reasons not related to learning - reasons such as the need to be kept off the street, so that they are not allowed to compete with older workers, the fact that most of their friends attend, or because the schools are handy places to solve other problems in areas such as driving ability, health or nutrition. Powell, Farrar, and Cohen indicate that "whatever their reasons for being in school, these students are frequently hostage to circumstances that tend to defeat learning" (p. 303).

In 1985 two short lived movements dubbed "excellence" and the "microcomputer revolution" peaked. Mecklenburger (1985) has indicated



that the "excellence" and "microcomputer revolution" movements nurtured four subsequent events. According to Mecklenburger (1985) these events included the press for computer literacy, the vision that schools could improve and one day become more "high tech," the decision by business that schools could be a long - term market worth pursuing, and the curriculum reform by educational theorists that swept away the "Carnegie unit" and replaced it with strings of learning goals that each student must achieve.

John Goodlad (1985) has argued that excellence has been overwhelmed by mediocrity; in more recent years a rising tide of mediocrity. The dream of universal education, in the form of a comprehensive high school, is a huge burden on the school system. Goodlad, Clark and others have indicated that "every nation gets the schools that it deserves and we have today a system that reflects our own conflicts about the relative importance of different social and educational values" (p. 267-268). According to Goodlad (1985) it is obvious that we do not yet have a philosophical commitment that is strong enough to withstand the erratic dictates of fashion.

According to Hawley (1985) it appears that schools are more effective today than they were a decade ago for the lower grades and for the top five percent to ten percent of high school students, but less effective for other students in the high school. Hawley states that "the solution lies in shaping up the schools, cutting out incompetence and making incremental improvements" (p. 184). In other words, we need to worry less about defining limits and setting

standards and more about investing in new capabilities and reshaping basic ways we go about the facilitation of student learning.

High schools, as they are generally organized, create anonymity and make it very difficult to achieve the kind of one-on-one engagement that good learning and teaching require (Sizer, 1986). Students differ, and though this is inconvenient, such differences are an essential part of our humanity and must be addressed. According to Sizer (1986) serious intellectual work demands time and focused attention. Students have to do the work with the role of teachers as explainers, coaches, cajolers and provokers. Students have to know that their teachers care enough about them. Sizer has stated that "students must know that such caring is itself a subject of the curriculum, an attitude that permeates the entire community" (p. 40).

If it is assumed that the purpose of a school is the facilitation of students' learning as Smith (1986) argues, the school must have a mission with a vision as to how a school can better facilitate learning. Such a vision would be focused to help students use their minds well, master a limited number of essential skills and areas of knowledge, and to attain universal goals which would apply to all. According to Sizer (1986) teaching and learning should also be personalized and no teacher should have more than eighty students. Finally, decisions regarding the details of the course of study, the use of students' and teachers' time, and the choice of teaching materials and specific pedagogies must be unreservedly shared by the principal, professional staff, students, and community of the school.

Inferences can be made regarding such a vision. The governing practical metaphor of the school should be the student as worker, rather than the more familiar metaphor of teacher as deliverer of instructional services. The emphasis must be on the student's demonstration that they can do important things. The tone of the school should explicitly stress expectation (I won't threaten you, but I expect much of you), of trust (until abused), and of decency (the values of fairness, generosity and tolerance). Incentives for both students and teachers should be emphasized, and parents should be treated as essential collaborators. Principals and teachers should perceive themselves as teachers and scholars first and specialists (in one particular discipline) second. Finally, staff members should expect to fulfill multiple obligations (teacher-counselor-advisor-manager) and should demonstrate a sense of commitment to the entire school.

Unfortunately, teachers are not fulfilling multiple obligations. Students are not being pushed to excel. Students have felt ignored and have wanted a different classroom arrangement. Powell (1985) indicated, however, that students have felt powerless to bring any changes about on their own. Powell has also stated that there is "the absence of commitment to the idea that most students can and should be pressed to develop their own intellectual capacities to the fullest" (p. 288).

Students need to be matched to appropriate courses; teachers need to know students as complex and distinctive learners and to understand

how their work in one class might connect with their work in other classes. This, according to Powell will require personal attention. Personal attention will be accomplished by giving students room to make their own way with adult direction. Teachers and parents must become active advocates, either individually or collectively. Teachers need to push all students; schools should replace anonymous individualization with personal attention.

Taking the proceeding agenda seriously will require rethinking the internal allocation of resources in high schools. According to Powell "specifically it means less attention to course variety, including the number of courses students take and the amount of time they spend in class" (p. 261). It will mean more attention to the various ways of knowing teenagers and engaging them seriously in school studies.

Such an agenda will require major structural changes. Class time, in particular, will need to be reduced, simply because students and teachers will employ much of the time for better purposes. Teachers will require a more flexible day. They will need to get away from the exhausting routine of large group instruction. Teachers will need to spend time with students in different formats. They will need to talk more with each other about teaching and about students. According to Powell (1985) students will need to have their class time reduced so they may be allowed to have other kinds of contacts with teachers, and because they will need more time to work on their own.

Instruction will need to be adapted to individual needs. Effective instructional strategies such as Robert Slavin's "Team Assisted Instruction" will be implemented. Students taking part in such programs will be required to work on individualized learning materials in heterogeneous, four member learning teams. Students working within such teams will assume responsibility for managing their individualized programs, thus freeing teachers to work with small groups of students who share specific problems.

According to Strother (1985) instructional programs such as Slavin's "Team Assisted Instruction" confront the issue of quality of instruction by giving the teacher primary responsibility for doing teaching. Strother states (1985) "team - assisted instruction" helps motivate students by using team rewards, a strategy known to be highly effective in fostering achievement oriented behaviors. Time deficiencies in such instructional programs will be addressed in part by giving students immediate feedback on their work, without the lengthy waiting that characterized earlier programs.

We know that students learn in different ways and further that appropriate identification and accommodation of individual differences are necessary for efficient learning to take place. According to Cetron (1985) teaching teams will be able to use more frequently updated information on their students to design individual educational plans. Therefore, each student will have a plan tailored to his or her own background, interests and skills. Such individual educational plans will recommend whether students should learn skills in a small

group, large group, cooperative teams of learners, independently one on one with a teacher, or a combination of these formats. Such a plan will also suggest which senses the student will use more frequently to develop their skills further; for example visual rather than aural. Teachers will therefore be able to teach and drill students in basic skills more efficiently which will also increase the percentage of students achieving certain minimum competencies.

Implications of such a teaching team approach to instruction are many. According to Wang, Strothers and Cetron (1985) they would include:

1. Instruction based on the assessed capabilities of each student.
2. Utilization of materials and procedures that permit each student to work at a pace suited to his or her abilities and interests.
3. Periodic evaluation to inform each student of progress toward mastery of the skills being taught.
4. The assumption by each student of responsibility for diagnosing his or her current needs and abilities, for planning individual learning activities, for pursuing those planned activities, and for evaluating the learning outcomes.
5. The provision of alternative learning activities and materials to help each student acquire essential academic skills.
6. Choices for students with regard to educational goals, activities, and outcomes.

Teachers will be responsible for setting up the instructional schedules, reviewing progress with students and seeing to it that students have opportunities to participate in a broad range of learning situations; ie., problem-solving groups, independent information - gathering activities in the school or community, music, art, or drama activities led by professionals from these disciplines, or computer-based drill routines. Students will be assigned to teams based on the way they learn best; teachers will be assigned to teaching teams based on the kind of teaching they do best. Finally students will not be assigned to teams by grade level, but by the developmental level they have reached in each area.

In sum, the large comprehensive high school has failed to provide a true breadth of courses, either because the high school's emphasis or expertise is applied in only one area (college prep) or because the courses which were supposedly offered to broaden student options really attracted only students with a negative self-image. Floretta Dukes McKenzie, Superintendent of the District of Columbia Public Schools, in the October, 1985 issue of Phi Delta Kappan stated that the "primary" issue of the next five years will be the development of independent thinkers. Our big job will be to give the students the tools of inquiry. I think that learning will shift from knowledge of facts to knowledge of how to access information independently" (p. 156).

Future high school curriculums must foster lifelong learning. According to the National Commission On Excellence In Education (1985) solutions to our educational problems must include a commitment to lifelong learning. However, the reorganization of the American high school appears to proceed as if we have had no relevant knowledge regarding lifelong learning or the development of children and youth. Goodlad (1984) has indicated that the good intentions of all the approaches taken toward the high school can be realized only within a restructured whole continuum of learning. Therefore when envisioning the desired direction of this restructuring, one foresees a curriculum that emphasizes a process - oriented education designed to develop communication, problem solving, and organizational skills. Values will be emphasized. Students will demand a high school vividly different than the traditionally rigid step by step high school so often seen today. A more meaningful methodology for all learning skills will feature ultra electronic devices. Teachers will become resource persons; the high school will serve as one of the neighborhood's resource centers. Finally some learning will occur at home via technology previously mentioned.

Changing circumstances and changing hopes have combined to produce a consensus, the essence of which is that high school students require an education in which the curriculum is common to all students. According to Goodlad (1985) people are concluding that there are no significant differences between the formal schooling required to prepare for entry into higher education and the kind



required to prepare for entry into the work force. If the goal of all the commissions, and other groups on "excellence" is universal secondary education, then the high school becomes a terminal institution that would be regarded as the final chance to give students the education that society implies it wants them to have.

John Dewey once declared the ideal of the school is "what the best and wisest parent wants for his own child, that must the community want for all its children" (Goodlad, p. 271). However, an even greater need today is to find creative alternatives to organizing and teaching so that high schools will be influential in providing the necessary knowledge that binds us together as a society.

According to Stallings (1986) the first charge of the high school is to provide an education that develops basic skills and a substantial knowledge in content areas. But, an effective education must prepare students to participate responsibly in a democratic society. Students of effective high schools must be able to ask questions and search for answers; be able to compare, contrast, and evaluate ideas or products, and make decisions. Glatthorn (1986) has argued that in order to improve the educational life of the high school critical - need ninth grade student a sharply focused curriculum that emphasizes breadth, understanding, and quality must be provided. A transition program for the critical - need ninth grade student is a creative alternative to present high school curriculum organization and instruction. English (1986) has indicated that a multi-disciplinary team of teachers, given an extended period of time

to teach a large group of students has more staying value than a typical secondary schedule of five 50 minute classes per week. Such a teaming approach would enable critical - need ninth grade students to view instruction with a positive attitude that they as students can learn. It would allow teachers to use time efficiently, manage the classroom effectively, plan instruction carefully, use active teaching strategies, teach to mastery by making sure that new knowledge and skills are learned, and provide a supportive learning environment.

Glatthorn (1986) has indicated that we have the pieces of such a transition program for the critical - need ninth grade student already available. Improving the attitudes, behavior, and achievement with these students needs only the will, the resources, and the know - how to put the system into place. After all, an education of quality awakens students to potential excellence and provides realistic goals for what can be accomplished in their lives. The challenging question is: "Is there a documented need for such a program at North Thurston High School?"

### CHAPTER III

#### PROCEDURE AND METHODOLOGY

The major concern of this study is to determine if there are differences of opinion between ninth and twelfth grade students with a high grade point average and those with a low grade point average as to the need for a ninth grade academic transition program.

#### The Survey

In order to determine whether or not there are differences of opinion it was necessary to collect data that would clearly pinpoint the differences between the two groups. The problem of assessing the opinion of both groups of students seemed to be best solved by developing an instrument utilizing a Likert-type scale.

On this type of scale, the respondent indicates the degree of his agreement or disagreement on a scale ranging from "strongly agree" to "strongly disagree." Thus several degrees of agreement or disagreement may be measured. This response mode is in contrast to the Thurstone scale that allows only a single agree or disagree response. Therefore, a Likert-type scale was chosen because it would be more adequate for the measurement of degrees of opinion concerning topics or issues to be presented to the high school students sampled in this study.

Items for the survey instrument were developed by utilizing statements found in professional studies, related literature, and opinions of thirty high school students interviewed by the researcher. Fellow colleagues, high school teachers, counselors, and administrators were solicited for input useful for the generation of items for the survey instrument.

#### READABILITY

Once a rough draft of the survey was developed, it was submitted to a reading specialist in the North Thurston School District who agreed to do a reading analysis of the instrument.

The reading instrument utilized was the "Reading Level Analysis Program" developed by Betermax Inc., in 1981. Using the Flex Index, the Fog Index, the Dale-Chall Index, and the Smog Index, the instrument's directions were determined to have a seventh grade

reading level, while items one through twenty-four were determined to have a sixth grade reading level.

#### RELIABILITY

The twenty - four item survey was personally administered to a randomly selected group of twenty-four ninth grade students from North Thurston High School in Lacey, Washington to determine its reliability. A statistical analysis of the responses of the students to the survey items indicated that the survey has an internal consistency of .8479 or .85. It was assumed that with alpha equal to .85 that the survey was ready for use in the study. After further research, seven additional items were added to the instrument before it was administered. These items were not pretested in the original tool. However, the information obtained from these items was considered essential for further elucidation of opinions about curriculum needs.

#### ADMINISTRATION AND SCORING

The survey can be administered in either a group or individual situation. However, because of the large number of students to be sampled during the study, the group situation was selected.

Random sampling of large numbers of students creates too many scheduling problems and class disruptions. Therefore, intact classes had to be selected. Completion time was approximately fifteen to twenty-five minutes. However, there was no time limit. Scoring was done by machine.

## Hypothesis

This research deals with the opinions of ninth and twelfth grade high school students as to the need for an academic transition program. The statistical hypothesis was stated in the null form. The hypothesis will be in a general form.

HYPOTHESIS 1: There is a significant difference between the opinions of ninth and twelfth grade students with a high grade point average and those with a low grade point average as to the need for a ninth grade academic transition program.

## Research Design and Method

The present exploratory study was designed to determine if there existed a significant difference in the opinions of ninth and twelfth grade students with a high grade point average and those with a low grade point average as to the need for a ninth grade academic transition program. The survey was administered to a ninth grade population of approximately four hundred and twenty-five students and a twelfth grade population of approximately three hundred and fifty students at North Thurston High School in Lacey, Washington. First quarter grades were used to determine the ninth and twelfth grade top thirty and bottom thirty students in relation to grade point

averages. T-scores on the two groups of students were used to determine if significance existed between the means of the two groups. The researcher then selected factor analysis to cluster items of the survey. Factor analysis was used in this instance because the set of items of the survey which were being studied had not been previously analyzed in order to determine their underlying clusters or common factors. Factor loadings express correlations between the items and factors; thus clusters of items common to each group of students (those with high and low grade point averages) can be easily identified through this statistical arrangement, as can clusters of items not common to each group.

Clustering of items that distinguished successful ninth and twelfth grade students (those with a high grade point average) from non-successful ninth and twelfth grade students enabled the researcher to predict a significant difference in student opinions as to the need for a ninth grade academic transition program.

CHAPTER IV  
ANALYSIS OF DATA

The purpose of this study was to determine if there were differences of opinion between ninth and twelfth grade high school students with a high grade point average and those with a low grade point average as to the need for a ninth grade academic transition program. In researching this purpose, the data was gathered from a thirty-one item survey using a Likert-type scale (see appendix I). This perspective provided the framework for the analysis and discussion of the data.

Factor analysis was selected to cluster items of the survey. Factor analysis was used in this instance because the set of items of the survey which were being studied had not been previously analyzed in order to determine their underlying clusters or common factors. Clustering of the items that distinguished successful ninth and twelfth grade students (those with a high grade point average) from non-successful ninth and twelfth grade students (those with a low grade point average) determined whether significant difference existed between the two groups.



Hypothesis I: There is a significant difference between the opinions of ninth and twelfth grade students with a high grade point average and those with a low grade point average as to the need for a ninth grade academic transition program.

Frequencies of the thirty-one item survey (see Appendix V) determined that there appeared to be significant difference in variables 5, 13, 21, 24, 27, 28, 30 and 31. However, only in variable 24 (I do not receive the individual attention at my school that I need as a ninth grader) did twelfth graders indicate a stronger agreement (13.2) than did ninth graders (8.2).

Those items where significant difference existed focused on teaching/instruction, higher order thinking skills, personalization vs. individualization, and curricular arrangement.

Factor analysis determined that the thirty one variables actually formed ten factors including: factor one (Instructional delivery system), survey items 5, 6, 8, 7, 17, 20, 22, factor two (Basic Skills), items 13, 21, 27, factor three (Personalization vs. Individualization), items 5, 10, 15, 16, 31, factor four (Advisor-Advisee/Counseling Services), 4, 11, 14, 19, 25, 26, factor five (Curricular Arrangement), items 12, 22, 25, 28, factor six (Basic Skills), items 1, 21, 22, 25, 28, factor seven (Personalization vs. Individualization), items 2, 14, 16, 19, 29, factor eight (Advisor-

Advisee/Counseling Services), 18, 23, 24, factor nine (combination of all), items 6, 9, 25 and factor ten (Activities, Advisor-Advisee), items 2, 3, 12, 23, (see Appendix VI).

The ten factors were then clustered based on the commonality they appeared to share. Factors two and six were combined under the title "Basic Skills", factors one and five - "Instruction/Curricular Arrangement", factors four, eight and ten - "Advisor - Advisee/Counseling Services", factors three and seven - "Personalization vs. Individualization", and factor nine, which appeared to share all or part of the characteristics of the preceding four groups.

A two by two ANOVA design was used to determine whether significant difference existed in the factors between ninth and twelfth grade students with a high grade point average and those with a low grade point average. The .05 level of confidence was selected as the acceptable level of significance. Significant difference was found in factors three and seven (Personalization vs. Individualization), and factor eight (Advisor-Advisee/Counseling Services).

Table 1 indicates the means, standard deviations, and number of cases between the total high and low achievers and the ninth and twelfth grade low and high achievers and the total group from the thirty-one item survey for factors three, seven and eight.

TABLE 1. Means, and standard deviations for factors three, seven and eight.

FACTOR THREE			
	MEAN	STD. DEV.	CASES
Higher Achiever	2.1423	.4504	52
9Th Grade	1.9929	.4405	28
12Th Grade	2.3167	.4040	24
Low Achiever	2.3277	.5132	47
9Th Grade	2.3630		27
12Th Grade	2.2800		20
Total Group	2.1551	.5400	379
9Th Grade	2.1037	.5043	245
12Th Grade	2.2493	.5904	134

FACTOR SEVEN			
	MEAN	STD. DEV.	CASES
Higher Achiever	2.3404	.5070	57
9Th Grade	2.2333	.5202	30
12Th Grade	2.4593	.4733	27
Low Achiever	2.5020	.5085	49
9Th Grade	2.5929	.5003	28
12Th Grade	2.3810	.5056	21
Total Group	2.4284	.5456	395
9Th Grade	2.3976	.5339	247
12Th Grade	2.4797	.5627	48

## FACTOR EIGHT

	MEAN	STD. DEV.	CASES
High Achiever	2.7262	.4632	56
9Th Grade	2.7889	.4989	30
12Th Grade	2.6538	.4161	26
Low Achiever	2.4267	.6062	50
9Th Grade	2.4943	.5678	29
12Th Grade	2.3333	.6583	21
Total Group	2.6592	.5691	402
9Th Grade	2.6548	.5656	252
12Th Grade	2.6667	.5767	150

A difference existed in factor three between the means of low achieving ninth graders (2.3630) and high achieving ninth graders (1.9929) indicating that the two groups perceived the personalization or individualization of a school, its staff and its curriculum differently. Factor seven indicated a difference between the means of low achieving ninth graders (2.5929) and high achieving ninth graders (2.2333) once again relating to the concept of personalization vs. individualization of the educational environment. Factor eight also demonstrated a difference between the means of both the ninth grade (2.7889) and twelfth grade (2.6538) high achievers and the ninth grade (2.4943) and twelfth grade (2.3333) low achievers related to the individual attention received throughout a student's four years of high school, the individual attention received during the ninth grade and a school's advisor/advisee arrangement in which all teachers might fill a counseling role. The mean differences in factors three and seven indicated a stronger agreement among ninth

grade low achievers than ninth grade high achievers. However, factor eight's mean differences indicated a stronger agreement amongst ninth and twelfth grade high achievers than ninth and twelfth grade low achievers. These differences raise the question of equivalence of the groups within these three factors and necessitates further analysis. The question of equivalence was addressed statistically by employing the analysis of variance to factors three, seven and eight. The results of this analysis is presented in table 2.

TABLE 2. An analysis of variance of mean scores of the thirty-one item survey for factors three, seven and eight.

FACTOR THREE

SOURCES OF VARIATIONS	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIFICANCE OF F
Grade	0.441	1	0.441	2.015	0.159
Achievement	1.068	1	1.068	4.879	0.030*
Grade by Achievement	1.107	1	1.107	5.056	0.027*
Residual	19.915	91	0.219		
Total	22.453	94	0.239		

\*Significant difference

FACTOR SEVEN

SOURCES OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIFICANCE OF F
Grade	0.063	1	0.063	0.256	0.614
Achievement	0.703	1	0.703	2.860	0.094
Grade by Achievement	1.504	1	1.504	6.119	0.015*
Residual	24.083	98	0.246		
Total	26.328	101	0.261		

\*Significant difference

## FACTOR EIGHT

SOURCES OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIFICANCE OF F
Grade	0.463	1	0.463	1.572	0.213
Achievement	2.488	1	2.488	8.459	0.004*
Grade By Achievement	0.002	1	0.002	0.007	0.936
Residual	28.827	98	0.294		
Total	31.653	101	0.313		

\*Significant difference

The analysis of variance revealed F values in factors three, seven and eight that appear to indicate significant difference in opinions of high and low achieving ninth and twelfth graders. Furthermore, as reflected in the data, specific concern is expressed in the areas of Personalization vs. Individualization of the school environment and Advisor - Advisee/Counseling services. The data also indicates that low achieving ninth graders generally feel teachers do not care about how well they learn the subjects the teachers are teaching, that they are not learning many of the things they should be, that the rules in the school are not fair, and a general lack of satisfaction with their experiences as a ninth grader. Low achieving ninth graders also express either a lack of opportunity to participate in school activities or a sense that they do not actually belong to their school because they cannot participate in those activities. Finally, low achieving ninth graders do not feel they

receive the individual attention at their school that they should, nor does their school provide opportunities to discuss high school programs which would help them make the transition from middle school to high school more successful.

On the basis of the data collected/presented the hypothesis cannot be rejected. One can conclude that there is some significant difference in the opinions of senior high school students with a high grade point average and senior high school students with a low grade point average which would suggest that a ninth grade academic transition program would be valuable.



## CHAPTER V

## CONCLUSIONS AND RECOMMENDATIONS

This study has documented the importance of and the difficulties with a successful student academic transition from the middle school to the high school level. A review of the literature indicated that those students most highly motivated to succeed were ninth graders. Yet many high schools have failed to capitalize on the eagerness of the ninth grader and as a result lower grades, high absenteeism, less involvement in school activities and increased discipline problems have become common. Other sources gave information outlining the ninth grader, and his or her physical, emotional, social, and cognitive levels of development. The literature also revealed what high schools should be seeking to accomplish and a possible ninth grade transition arrangement. From an analysis of the available literary sources, the author postulated some possible implications for research.

Determining which curriculum pattern is best suited for positive academic transition from the middle to the high school level may not be possible. In this study a student survey was designed to determine student opinions concerning the need for a ninth grade academic transition program. The results of this study have indicated that the planning and implementation of such a program would be appropriate in the high school population surveyed.

## Conclusions

Based on the results of the data applying factor analysis to the thirty-one variables (creating ten factors), there appeared to be significant difference in the opinions of ninth and twelfth grade students with a high grade point average and those with a low grade point average as to the need for a ninth grade transition program. Such significance would suggest that more personalized services would be valuable for critica-need ninth grade students.

Overall this study's hypotheses - there is a significant difference between the opinions of ninth and twelfth grade students with a high grade point average and those with a low grade point average as to the need for a ninth grade academic transition - was supported when using an analysis of variance design. A two by two analysis of variance design was used to determine whether significant difference existed in the ten factors between the high and low achievers. Significant difference was found in factors three, seven and eight.

Interpretation of the data in factors three and seven indicated that ninth graders felt that their teacher did not personalize teaching and learning. Specifically when ninth grade students were asked if their teachers cared about how well they, as students, were learning the subject being taught, 41 percent indicated they did not believe teachers cared. Furthermore nearly 25 percent believed the school's rules were not fair. More than 15 percent of the ninth graders surveyed indicated that overall they were not satisfied with their

experiences as ninth graders. Thirty - four percent of ninth grade students felt that their parents had no, or very little opportunity to, discuss ninth grade high school programs with high school staff. Thirty percent believed that they had had very little help from other high school students in helping make a successful transition from the middle to high school level.

Data gathered from factor eight indicated that 41 percent of the ninth graders surveyed felt that the attention they needed as ninth graders would be increased if the school provided a homebased advisor - advisee arrangement in which all teachers filled a counseling role.

More specifically the data indicated that in all three of the previously mentioned factors, low achieving ninth graders felt more strongly about the issues discussed in the preceding two paragraphs, than did ninth grade high achievers. It can be concluded that ninth grade low achievers at North Thurston High School felt that they were not being pushed to excel and were for the most part being ignored. More importantly these same students expressed a need to be matched to an appropriate curriculum arrangement that would allow teachers to know them as complex and distinctive learners. Such an arrangement would allow teachers to seriously engage critical - need students in school studies.

One must remember that the need for a critical - need ninth grade curriculum arrangement has been demonstrated through a relatively small student sample confined to North Thurston High

School in Lacey, Washington. The research cited earlier in this study indicated that determining which curriculum pattern is best suited for a successful critical - need ninth grade student academic transition may not be possible. However, this study's data collection has demonstrated that the critical - need students do need to be provided with academic and social experiences which will help them determine their potential interests. Diversity of instruction must be provided to critical - need ninth grade students so that they can be engaged in activities that will allow them to believe they belong to their school.

The data taken from this study reaffirms the support for an academic entry program that takes into account the readiness of ninth graders for a high school learning environment. However, the high school has not found late maturing youngsters nearly so adaptable to what has often been a narrowly focused and predictable expectation for student behavior and readiness to learn. Therefore, the middle level block program approach of teachers, administrators, and support staff (as described in Chapter II) entering critical - need ninth grade students would be the most appropriate curriculum arrangement.

#### Recommendations

Recommendations can be drawn from the review of past research and from the conclusions of this study. The following recommendations support the need for an academic entry program for critical - need ninth grade students.

1. This study and past research supports the premise that teaching and learning should be personalized.
2. More attention will need to be given to the various ways of knowing teenagers and seriously engaging them in school studies. There will need to be more meaningful intellectual interaction between students and teachers. There will need to be direct concern and an involvement in critical thinking or problem solving. Academic expectations will need to be high and learning tasks challenging.
3. Class time will need to be reduced, teachers will require a more flexible day, and teachers will need to spend time with students in different formats.
4. High school counseling assignments will need to be altered so that, depending on the size of the school, there is a special counselor or counselors just for ninth grade. The ninth grade personnel can then create a guidance orientation program to acclimate freshmen and their parents to their new environment.

5. High school teachers will need to be identified who are more student - centered than subject - centered and who enjoy teaching ninth graders. These teachers will become responsible for ninth grade instruction.
6. An advisor - advisee program for freshman will need to be instituted.
7. A study skills program oriented to the unique needs of the critical - need high school students will need to be created.
8. The eighth grade instructional methodology and curriculum arrangement (such as the block program suggested earlier in this study) will need to be continued through the end of the first semester of the critical - need student's ninth grade year. The instructional program will need to be less restricted/dominated by the text book. More diversity in instruction afforded ninth graders will need to take place. The ninth grade curriculum will need to become less fragmented into separated subjects. There will need to be more integration or cooperative planning between disciplines.

9. The high school will need to assume the responsibility for the transition of freshmen from middle schools. The freshmen will then be better oriented to the school that will house them for the next four years.
10. Teachers should consider how they can increase the hands - on activities of their students. The amount of non-productive student sitting time is excessive; effort to increase the one will decrease the other.
11. High schools should not assume that ninth graders have "grown - up" and only need to be taught the standard subjects. An effective education program needs to exist in which ninth grade teachers consider ways that they can recognize and meet the needs of their students.
12. Special provisions should be made to involve critical - need ninth grade students in student activities. These activities might include those just for freshmen or involve special efforts to recruit ninth graders for those ongoing activities which are run by upper classmen.

13. Intramural activities for the critical - need ninth grade student need to be provided to ensure the variety of physical activities appropriate for their physical and social development.
  
14. High Schools housing critical - need ninth graders should institute discussions regarding the needs of ninth graders, the resulting school objectives, and a philosophical context for decision making about methods and content that reflect these needs and objectives.

#### The Implications

The following implications from this study should be able to provide further insight for educators when considering the conditions that prevail for critical - need ninth grade students. Consideration of these study implications can lead to program improvements and a more successful middle to high school transition for the critical - need student. The basic source for such improvements remain where the problems exist - in the classroom interaction of students and teachers. Because these interactions involve human beings and their relationships, there are no easy solutions. But such interactions can be improved upon as professionals review their philosophies and methods, and foster change in their approaches and procedures.



1. The study implies that an academic transition program (defined in this study as the Ninth Grade Block Program) must include specially trained and certified teachers who are knowledgeable of the range of human growth and development of the 10 - 14 year old student, usually found in grades 5 - 9, who will institute a learning process which holds the student and subject matter in equal value.
2. The Ninth Grade Block Program must allow for an environment which allows for teacher interdisciplinary team planning and for the scheduling of materials and activities which will allow for the development to the outer limits of the academic, emotional, physical and social potential of the critical - need ninth grade student.
3. The high school administration will need to assist teachers with an advisement program which will support the development of academic and human responsible behavior, within a curriculum design that uses a situation standard built on

teacher offered controlled choice of predetermined learning situations set in the responsible structure of a discipline plan constructed by the total staff and understood by the total student population within their limits of mental interpretation.

4. High school building principals would have the additional opportunity to develop ninth grade transition program plans that allow for teacher directed research within the school building related to teacher - student interaction; on - task activity, student preferred learning modalities along with other data collection which will support the building unit in its attempts to further clarify the personalities of those critical - need ninth grade students participating in the transition program.
5. The ninth grade curriculum arrangement, in order to meet individual needs, will need to include effective instructional strategies such as Rober Slavin's "Team Assisted Instruction," which would require critical - need ninth grade students to

work on individualized learning materials  
in four member learning teams.

6. If the preceding is to be taken seriously,  
one must recognize that such a ninth grade  
transition curriculum arrangement is a  
creative alternative to present high  
school organization and instruction. The  
data supports the contention that the Ninth  
Grade Block Program has broader  
application beyond the North Thurston  
School District. Glatthorn (1986) has  
indicated that we have the pieces of such  
a transition program already available.  
Improving the attitudes, behaviors, and  
achievement with the critical - need ninth  
graders needs only the will and the know -  
how to put the system into place.

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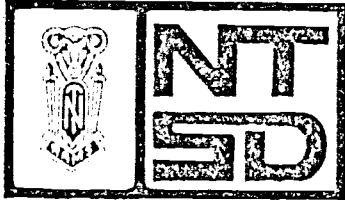
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APPENDICES



*Kay Thomas, Principal  
Tony Hawkins, Assistant Principal  
Jim Koval, Assistant Principal  
Larry Price, Activities Coordinator*

NORTH THURSTON SCHOOL DISTRICT

NORTH THURSTON HIGH SCHOOL

## APPENDIX I

## THIRTY - ONE ITEM SURVEY

PURPOSE OF THE SURVEY:

The North Thurston School District is interested in your opinion about your transition from middle school to high school (grade 8 to grade 9). The purpose of this survey is to help us learn more about this transition so that improvement(s) might be made. Your opinions are valuable.

EQUAL EDUCATIONAL OPPORTUNITIES - EQUAL EMPLOYMENT OPPORTUNITIES

600 N. E. SLEATER KINNEY ROAD • LACEY, WASHINGTON 98506 • TELEPHONE (206) 456-7670

**DIRECTIONS**

PLEASE READ EACH STATEMENT CAREFULLY. NOTE THERE ARE FOUR (4) POSSIBLE RESPONSES FOR EACH STATEMENT:

- A. **Strongly Agree:** This means you agree that most of the time the statement is true about your school.
- B. **Agree:** This means that the statement is true about your school much of the time although there may be times when it isn't.
- C. **Disagree:** This means you do not agree with the statement as it applies to your school. In other words, much of the time it isn't true.
- D. **Strongly Disagree:** This means the statement never or almost never applies to your school.

1. The following information goes on side one of the answer sheet.
2. Write your name in the boxes at the top of the sheet.
3. Find the spaces labeled SEX next to the name. Fill in the correct circle.
4. Find the spaces labeled GRADE under SEX. Fill in the circle describing the grade you are in now.
5. Using a #2 pencil, mark your answer to the following questions on the answer sheet.

**SURVEY**

1. My school offers a good variety of subjects to study.
2. I participate in co-curricular activities at my school.
3. I would be accepted better if I wanted to participate in most of the activities offered in my school.
4. Counselors in my school understand what it's like to be a ninth grader.
5. My teachers care about how well I learn the subject they teach.

6. My teachers teach in many ways, not just by lecture.
7. My teachers clearly explain what to do on assignments.
8. I am satisfied with the way my teachers teach their subjects.
9. During school there is time for talking and being with friends.
10. Many of the things I should be learning are being taught in my school.
11. I am satisfied with the way counselors help me solve personal problems.
12. Team teaching and/or block time instruction has helped me make the transition from middle school to the high school.
13. My classes require that I think, not just memorize.
14. At my school, my parents and I have an opportunity to discuss the high school programs I should be involved in with members of the high school staff.
15. The rules at this school are fair.
16. I belong to my school.
17. I understand how well I am doing in each of my classes.
18. I do not receive the individual attention at my school that I need.
19. My high school provided a conference for me and my parents to discuss high school programs.
20. Skills in reading, writing, speaking, and listening are emphasized in my school.
21. Skills in the use of science, math, social studies and language arts are emphasized in my school.
22. My school has a good balance between basic subjects (math, science, social studies, language arts) and exploratory subjects (such as art, music, home economics and industrial arts).
23. My school's guidance-counseling program would be improved if it provided a home-based advisor-advisee arrangement in which all teachers fill a counseling role.

24. I do not receive the individual attention at my school that I need as a ninth grader.
25. My high school provides opportunities for development of fundamental skills while making allowances for individual learning patterns.
26. Students at my school are provided opportunities for the development of problem-solving skills.
27. My classes require thinking skills and not just memorization.
28. At my school individualized instruction is provided so that the student can proceed successfully at his or her own pace and level of ability.
29. In my school, high school students (grade 9 through 12) helped me through transition from middle school to high school.
30. Middle school did a good job of preparing me for high school.
31. Overall, I am satisfied with my experiences as a ninth grader.

101	A B C D E 1 2 3 4 5	111	A B C D E 1 2 3 4 5	121	A B C D E 1 2 3 4 5	131	A B C D E 1 2 3 4 5	141	A B C D E 1 2 3 4 5
102	A B C D E 1 2 3 4 5	112	A B C D E 1 2 3 4 5	122	A B C D E 1 2 3 4 5	132	A B C D E 1 2 3 4 5	142	A B C D E 1 2 3 4 5
103	A B C D E 1 2 3 4 5	113	A B C D E 1 2 3 4 5	123	A B C D E 1 2 3 4 5	133	A B C D E 1 2 3 4 5	143	A B C D E 1 2 3 4 5
104	A B C D E 1 2 3 4 5	114	A B C D E 1 2 3 4 5	124	A B C D E 1 2 3 4 5	134	A B C D E 1 2 3 4 5	144	A B C D E 1 2 3 4 5
105	A B C D E 1 2 3 4 5	115	A B C D E 1 2 3 4 5	125	A B C D E 1 2 3 4 5	135	A B C D E 1 2 3 4 5	145	A B C D E 1 2 3 4 5
106	A B C D E 1 2 3 4 5	116	A B C D E 1 2 3 4 5	126	A B C D E 1 2 3 4 5	136	A B C D E 1 2 3 4 5	146	A B C D E 1 2 3 4 5
107	A B C D E 1 2 3 4 5	117	A B C D E 1 2 3 4 5	127	A B C D E 1 2 3 4 5	137	A B C D E 1 2 3 4 5	147	A B C D E 1 2 3 4 5
108	A B C D E 1 2 3 4 5	118	A B C D E 1 2 3 4 5	128	A B C D E 1 2 3 4 5	138	A B C D E 1 2 3 4 5	148	A B C D E 1 2 3 4 5
109	A B C D E 1 2 3 4 5	119	A B C D E 1 2 3 4 5	129	A B C D E 1 2 3 4 5	139	A B C D E 1 2 3 4 5	149	A B C D E 1 2 3 4 5
110	A B C D E 1 2 3 4 5	120	A B C D E 1 2 3 4 5	130	A B C D E 1 2 3 4 5	140	A B C D E 1 2 3 4 5	150	A B C D E 1 2 3 4 5
151	A B C D E 1 2 3 4 5	161	A B C D E 1 2 3 4 5	171	A B C D E 1 2 3 4 5	181	A B C D E 1 2 3 4 5	191	A B C D E 1 2 3 4 5
152	A B C D E 1 2 3 4 5	162	A B C D E 1 2 3 4 5	172	A B C D E 1 2 3 4 5	182	A B C D E 1 2 3 4 5	192	A B C D E 1 2 3 4 5
153	A B C D E 1 2 3 4 5	163	A B C D E 1 2 3 4 5	173	A B C D E 1 2 3 4 5	183	A B C D E 1 2 3 4 5	193	A B C D E 1 2 3 4 5
154	A B C D E 1 2 3 4 5	164	A B C D E 1 2 3 4 5	174	A B C D E 1 2 3 4 5	184	A B C D E 1 2 3 4 5	194	A B C D E 1 2 3 4 5
155	A B C D E 1 2 3 4 5	165	A B C D E 1 2 3 4 5	175	A B C D E 1 2 3 4 5	185	A B C D E 1 2 3 4 5	195	A B C D E 1 2 3 4 5
156	A B C D E 1 2 3 4 5	166	A B C D E 1 2 3 4 5	176	A B C D E 1 2 3 4 5	186	A B C D E 1 2 3 4 5	196	A B C D E 1 2 3 4 5
157	A B C D E 1 2 3 4 5	167	A B C D E 1 2 3 4 5	177	A B C D E 1 2 3 4 5	187	A B C D E 1 2 3 4 5	197	A B C D E 1 2 3 4 5
158	A B C D E 1 2 3 4 5	168	A B C D E 1 2 3 4 5	178	A B C D E 1 2 3 4 5	188	A B C D E 1 2 3 4 5	198	A B C D E 1 2 3 4 5
159	A B C D E 1 2 3 4 5	169	A B C D E 1 2 3 4 5	179	A B C D E 1 2 3 4 5	189	A B C D E 1 2 3 4 5	199	A B C D E 1 2 3 4 5
160	A B C D E 1 2 3 4 5	170	A B C D E 1 2 3 4 5	180	A B C D E 1 2 3 4 5	190	A B C D E 1 2 3 4 5	200	A B C D E 1 2 3 4 5

# GENERAL PURPOSE

## NCS®

# ANSWER SHEET

### Form no. 4521

#### EXAMPLES

WRONG



WRONG



WRONG



RIGHT



#### IMPORTANT DIRECTIONS FOR MARKING ANSWERS

- Use #2 pencil only.
- Do NOT use ink or ballpoint pens.
- Make heavy black marks that fill the circle completely.
- Erase cleanly any answer you wish to change.
- Make no stray marks on the answer sheet.

DO NOT

WRITE

IN THIS

SPACE







## APPENDIX II

## RELIABILITY ANALYSIS OF THE 24 ITEM

## QUESTIONNAIRE/DESCRIPTIVE SURVEY

01 MAY 86

12:35:42

KOVAL--PILOT QUESTIONNAIRE

# OF CASES = 24.0

## ITEM - TOTAL STATISTICS

	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM TOTAL CORRELATION	SQUARED MULTIPLE CORRELATION	ALPHA IF ITEM DELETED
V1	66.9583	77.6069	.6428	.	.8064
V2	67.2500	82.5435	.2506	.	.8212
V3	67.2500	78.6304	.4336	.	.8136
V4	67.4167	83.4710	.1516	.	.8261
V5	67.0000	81.8261	.3309	.	.8182
V6	66.9583	77.0851	.6318	.	.8059
V7	67.5000	79.1304	.5176	.	.8111
V8	67.4167	77.1232	.7597	.	.8035
V9	67.5417	76.5199	.5480	.	.8080
V10	67.2917	76.9112	.6006	.	.8066
V11	67.6667	84.6667	.1223	.	.8254
V12	67.6667	82.2319	.2811	.	.8200
V13	66.8333	82.3188	.2624	.	.8208
V14	67.5417	78.5199	.5170	.	.8106
V15	67.0000	79.2171	.3743	.	.8165
V16	66.8750	79.0707	.5488	.	.8103
V17	67.1250	81.7663	.3143	.	.8188
V18	67.7917	77.6504	.4588	.	.8123
V19	67.7917	78.3460	.4178	.	.8144
V20	67.0000	78.4348	.5964	.	.8084
V21	66.7083	83.5199	.3298	.	.8191
V22	67.5417	83.7373	.0925	.	.8316
V23	68.0000	88.4348	-.1468	.	.8371
V24	67.0833	73.3841	.6915	.	.7999

RELIABILITY COEFFICIENTS 24 ITEMS

ALPHA = .8231 STANDARDIZED ITEM ALPHA = .8479

APPENDIX III  
READING LEVEL ANALYSIS OF THE  
24 ITEM QUESTIONNAIRE/DESCRIPTIVE SURVEY

SAMPLE NUMBER 1 PAGE NUMBER 1

The North Thurston School District is interested in your opinion about your transition from middle school to high school (grade 8 to grade 9). The purpose of this opinion survey is to help us learn more about this transition so that improvement(s) might be made. Your opinions are valuable. This is not a test. There are no right or wrong answers. Your answers will be kept completely confidential. Do not sign your name or identify yourself in any way. Please read each statement carefully. Note there are five (5) possible responses for each statement: Strongly Agree, Agree, Undecided, Disagree, Strongly Disagree. Please place a check mark in the Os to the right indicating your feeling about each statement as it applies to your high school.

REGULAR ANALYSIS (GR. 4 TO ADULT)

1. ESTIMATED DALE	3.65488
2. FOG INDEX	10.7542857
3. FLESCH GRADE LEVEL	8.16794285
4. SMOG INDEX	9.54653671

AVERAGE (OF 1, 2, AND 3,) 7.5

COMPLETE STATISTICS

# OF SENTENCES	10
# OF WORDS	126
# CHARACTERS	603
# WORDS/SENTENCE	12.6
# CHAR/WORD	4.7
# SYLLABLES/WORD	1.4
# WORDS = 2 SYLLABLES	18

## FRY COORDINATES

# SYLLABLES/100 WORDS	147.619048
# SENTENCES/100 WORDS	7.93650794
1. ESTIMATED DALE	3.65488
2. FOG INDEX	10.7542857
3. FLESCH GRADE LEVEL	8.16794285
4. SMOG INDEX	9.54653671
AVERAGE (OF 1, 2, AND 3)	7.5

## SAMPLE NUMBER 2 PAGE NUMBER 1

This means you agree that most of the time the statement is true about your school. This means that the statement is true about your school much of the time although there may be times when it isn't. This means you aren't sure one way or the other. Maybe you haven't thought enough about the statements to decide. This means you do not agree with the statement as it applies to your school. In other words, much of the time it isn't true. This means the statement never or almost never applies to your school. The food in the school is as good as my mother serves at home.

REGULAR ANALYSIS (GR. 4 TO ADULT)

1. ESTIMATED DALE	3.751025
2. FOG INDEX	7.28486238
3. FLESCH GRADE LEVEL	6.02218979
4. SMOG INDEX	6.70964525
AVERAGE (OF 1, 2, AND 3)	5.6

COMPLETE STATISTICS

# OF SENTENCES	8
# OF WORDS	109
# CHARACTERS	451
# WORDS/SENTENCE	13.6
# CHAR/WORD	4.1
# SYLLABLES/WORD	1.2
# WORDS = 2 SYLLABLES	5

## FRY COORDINATES

# SYLLABLES/100 WORDS	122.018349
# SENTENCES/100 WORDS	7.33944955

1. ESTIMATED DALE	3.751025
2. FOG INDEX	7.28486238
3. FLESCH GRADE LEVEL	6.02218979
4. SMOG INDEX	6.70964525

AVERAGE (OF 1, 2, AND 3)	5.6
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SAMPLE NUMBER 3 PAGE NUMBER 2

ITEMS 1-9

I think my school offers a good variety of subjects to study. I participate in interesting activities at my school (Sports, Clubs, Student Council, Dances etc.) I feel I would be accepted in most of the activities offered in my school. Counselors in my school understand ninth graders' problems. My teachers care about how well I learn the subjects they teach. My teachers teach in many ways,

not just by lecture. My teachers clearly explain what to do on assignments. I am satisfied with the way my teachers teach their subjects. My school gives us time for just talking and being with friends.

REGULAR ANALYSIS (GR. 4 TO ADULT)

1. ESTIMATED DALE	3.53606667
2. FOG INDEX	8.0627451
3. FLESCH GRADE LEVEL	7.16153921
4. SMOG INDEX	8.14495756
AVERAGE (OF 1, 2, AND 3)	6.2

COMPLETE STATISTICS

# OF SENTENCES	9
# OF WORDS	102
# CHARACTERS	477
# WORDS/SENTENCES	11.3
# CHAR/WORD	4.6
# SYLLABLES/WORD	1.3
# WORDS = 2 SYLLABLES	9

FRY COORDINATES

# SYLLABLES/100 WORDS	138.235294
# SENTENCES/100 WORDS	8.82352942
1. ESTIMATED DALE	3.53606667
2. FOG INDEX	8.0627451
3. FLESCH GRADE LEVEL	7.16153921
4. SMOG INDEX	8.14495756

AVERAGE (OF 1, 2, AND 3) 6.2

SAMPLE NUMBER 4 PAGE NUMBER 2

ITEMS 10-16

I think many of the things I should be learning are being taught in my school right now. I am satisfied with the way counselors help me in solving personal problems. Team teaching and or block time instruction helps the ninth grader make the transition from the middle school to the high school. My classes require thinking skills and not just memorization. At my school, my parents and I have an opportunity to discuss with the high school staff) the high school programs I should be involved in. I think I should be required to study more. My school rules are fair.

REGULAR ANALYSIS (GR. 4 TO ADULT)

1. ESTIMATED DALE	3.8398
2. FOG INDEX	8.18151261
3. FLESCH GRADE LEVEL	6.57785294
4. SMOG INDEX	7.20084025
AVERAGE (OF 1, 2, AND 3)	6.2

COMPLETE STATISTICS

# OF SENTENCES	7
# OF WORDS	102
# CHARACTERS	456
# WORDS/SENTENCE	14.5
# CHAR/WORD	4.4
# SYLLABLES/WORD	1.2
# WORDS = 2 SYLLABLES	6

FRY COORDINATES

# SYLLABLES/100 WORDS	127.45098
# SENTENCES/100 WORDS	6.8627451
1. ESTIMATED DALE	3.8398
2. FOG INDEX	8.18151261
3. FLESCH GRADE LEVEL	6.57785294

COMPLETE STATISTICS CONT'D

4. SMOG INDEX 7.20084025

AVERAGE (OF 1, 2, AND 3) 6.2

SAMPLE NUMBER 5 PAGE NUMBER 3

ITEMS 17-26

My high school provides a conference for each incoming ninth grader with his/her parents to discuss high school programs. Skills in Reading, Writing, Speaking and Listening are emphasized in my school. I understand how well I am doing in my classes. Skills in the use of Science, Math, Social Studies and Language Arts are emphasized in my school. In my school, high school students (grade 9 through 12) help ninth grade students through transition from middle school to high school. I think middle school did a good job of preparing me for high school. Overall, I am satisfied with my experiences as a ninth grader.

REGULAR ANALYSIS (GR. 4 TO ADULT)

1. ESTIMATED DALE	3.8934
2. FOG INDEX	8.69865229
3. FLESCH GRADE LEVEL	6.70783962
4. SMOG INDEX	7.45099099

AVERAGE (OF 1, 2, AND 3) 6.4

COMPLETE STATISTICS

# OF SENTENCES	7
# OF WORDS	106
# CHARACTERS	497
# WORDS/SENTENCE	15.1
# CHAR/WORD	4.6



COMPLETE STATISTICS CONT'D

# SYLLABLES/WORD	1.2
# WORDS = 2 SYLLABLES	7

## FRY COORDINATES

# SYLLABLES/100 WORDS	128.301887
# SENTENCES/100 WORDS	6.60377358

1. ESTIMATED DALE	3.8934
2. FOG INDEX	8.69865229
3. FLESCH GRADE LEVEL	6.70783962
4. SMOG INDEX	7.45099099

AVERAGE (OF 1, 2, AND 3)	6.4
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## APPENDIX IV

## READING ANALYSIS FORMULAS FOR GRADES FOUR TO ADULTS

I. THE FLESCH INDEX

The Flesch Readability Formula is computed on the basis of 100-word samples from the text. It is best to avoid using either opening or closing passages. Do not include headings for various sections of the text.

It is recommended that you begin your sample at the beginning of a paragraph.

The object of the Flesch Index is to estimate the reading grade level of the material. In the example, the Flesch Index is to estimate the reading grade level of the material. In the example, the Flesch Index was 75.1186, which translates to a Flesch grade level equivalent of 7.48, or about the middle of the 7th grade, if you were in school.

The Flesch Index was designed to analyze textual material from 5th grade through college level. It is some what less accurate when used with material below 5th grade level in reading difficulty. Descriptions abstracted from the original articles by Dr. Eunice Schmidt, revised by Dr. Max E. Jerman.

## II. THE FOG INDEX

The Fog Index is another measure of reading ease. 100 or more word samples are also assumed for its computation.

It is computed using the number of words of three syllables or more as an important indicator of reading difficulty.

In general, the following Fog scores indicate the respective grade levels at which the text may be read with ease as shown below:

FOG	GRADE LEVEL
6 to 8	6
7 to 8	7
8	8
9 to 10	H.S. Freshman
10 to 11	H.S. Sophomore
11 to 12	H.S. Junior
12	H.S. Senior
13 to 16	College Student
17+	College Graduate

## III. THE DALE - CHALL INDEX

The Dale - Chall Index has been developed for material at levels Grade 4 through college. It is based on two kinds of counts. These are: average sentence length and percentage of unfamiliar words.\*

The calculations for this index are also based on the assumption that 100 or more word passages are being analyzed.

The Dale - Chall Index and corresponding grade levels at which the text may be read with ease, are shown in the table below:

INDEX	GRADE LEVEL
4.9 and lower	4th gr. & lower
5.0 to 5.9	5th to 6th gr.
6.0 to 6.9	7th to 8th gr.
7.0 to 7.9	9th to 10th gr.
8.0 to 8.9	11th to 12th gr.
9.0 to 9.9	College Student
10.0 and above	College Student

\*The 16K version uses an approximation formula rather than including the Dale list of 3000 words because of computer memory limitations.

#### IV. THE SMOG INDEX

The Smog Index is an estimate of the grade level that a person must reach in order to fully understand the textual material analyzed.

The Smog Index is generally the higher level indicator of those included in this program. It is in a sense the upper bound of readability levels.

The Smog Index assumes 10 consecutive sentences will be entered for analysis. Our example is much shorter than required. It was included for illustration purposes only.

The Smog Index is not calculated if there are no polysyllabic words.

## APPENDIX V

FREQUENCIES FOR TOTAL NINTH AND TWELFTH GRADE STUDENTS AND  
TOTAL POPULATION.

		9TH GRADE	12TH GRADE	TOTAL
V1	Strongly agree	21.7	28.0	24.1
	Agree	70.9	59.9	66.4
	Disagree	6.8	9.2	7.9
V2	Strongly Agree	21.6	18.9	21.4
	Agree	39.5	45.1	41.1
	Disagree	29.5	16.0	24.1
V3	Strongly Agree	13.2	11.9	12.7
	Agree	33.6	31.7	32.9
	Disagree	40.9	40.6	40.4
V4	Strongly Agree	14.4	12.3	13.9
	Agree	51.2	57.4	53.7
	Disagree	25.6	21.6	23.9
V5	Strongly Agree	20.2	12.1	17.9
	Agree	56.5	58.3	57.2
	Disagree	19.6	23.3	20.3
V6	Strongly Agree	20.4	22.8	22.2
	Agree	60.7	58.3	59.6
	Disagree	16.1	13.6	14.7
V7	Strongly Agree	12.1	9.4	11.4
	Agree	50.6	56.2	53.0
	Disagree	32.3	30.0	30.6
V8	Strongly Agree	6.9	4.9	6.3
	Agree	55.8	61.0	58.2
	Disagree	31.8	29.8	30.6
V9	Strongly Agree	17.1	17.6	17.1
	Agree	45.8	50.7	47.8
	Disagree	28.0	23.9	26.3
V10	Strongly Agree	23.6	17.6	21.9
	Agree	63.0	56.1	59.6
	Disagree	10.6	21.0	14.7

## APPENDIX V (cont'd.)

		9TH GRADE	12TH GRADE	TOTAL
V11	Strongly Agree	12.1	15.8	14.5
	Agree	54.0	49.0	51.1
	Disagree	27.3	23.8	26.0
V12	Strongly Agree	9.7	8.1	10.1
	Agree	43.1	36.0	40.4
	Disagree	33.3	39.1	34.9
V13	Strongly Agree	28.8	17.9	25.2
	Agree	55.4	56.5	55.2
	Disagree	13.9	18.8	15.5
V14	Strongly Agree	9.4	9.4	9.8
	Agree	48.9	38.6	45.4
	Disagree	33.5	39.1	35.2
V15	Strongly Agree	14.0	14.6	14.4
	Agree	53.7	51.2	52.6
	Disagree	24.8	22.0	23.5
V16	Strongly Agree	20.9	21.1	21.5
	Agree	47.5	45.1	46.5
	Disagree	20.0	19.6	19.7
V17	Strongly Agree	20.8	22.7	22.0
	Agree	60.2	58.5	58.9
	Disagree	16.5	15.5	16.3
V18	Strongly Agree	6.6	5.3	6.1
	Agree	28.8	24.6	26.9
	Disagree	50.0	55.1	57.4
V19	Strongly Agree	7.9	10.3	9.1
	Agree	43.5	39.2	42.0
	Disagree	36.5	33.3	34.7
V20	Strongly Agree	18.9	18.8	20.0
	Agree	62.1	52.2	57.1
	Disagree	16.5	23.7	19.3
V21	Strongly Agree	32.4	25.2	30.3
	Agree	57.6	53.9	55.7
	Disagree	9.0	18.9	12.6

## APPENDIX V (con'td.)

		9TH GRADE	12TH GRADE	TOTAL
V22	Strongly Agree	25.6	28.4	27.4
	Agree	60.0	52.0	58.8
	Disagree	10.6	14.7	12.8
V23	Strongly Agree	10.8	13.7	12.0
	Agree	41.7	39.0	41.3
	Disagree	40.1	36.6	38.1
V24	Strongly Agree	8.2	13.2	9.9
	Agree	21.4	27.9	23.9
	Disagree	56.6	39.6	49.9
V25	Strongly Agree	7.8	8.4	8.5
	Agree	66.1	62.6	64.1
	Disagree	20.7	24.1	22.3
V26	Strongly Agree	10.7	9.4	10.4
	Agree	63.7	60.4	63.4
	Disagree	22.7	21.8	21.5
V27	Strongly Agree	23.4	19.0	22.0
	Agree	59.7	54.6	57.7
	Disagree	14.4	20.0	16.6
V28	Strongly Agree	8.2	5.4	7.7
	Agree	43.3	28.8	37.9
	Disagree	33.9	42.0	36.5
V29	Strongly Agree	10.1	11.3	11.4
	Agree	39.6	34.8	37.5
	Disagree	31.4	33.8	32.4
V30	Strongly Agree	13.6	7.0	11.3
	Agree	36.0	33.3	35.2
	Disagree	29.0	27.4	28.3
V31	Strongly Agree	23.6	18.4	21.9
	Agree	51.8	45.4	48.7
	Disagree	15.1	19.5	17.0

## APPENDIX VI

## FACTOR MATRIX

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5
V1	.02942	.08180	.13358	.10723	.00193
V2	.05683	.11857	.06785	-.11406	-.21634
V3	-.00129	.08239	-.00780	.02409	.08151
V4	.01835	.00684	.14633	.72889	-.00918
V5	.59773	.09800	.32755	-.07323	.17429
V6	.44516	.26751	-.07249	.11765	-.02420
V7	.70543	-.01376	.07739	.11507	.12123
V8	.60172	.07059	.11793	.07214	.09868
V9	.13933	-.02551	.15767	.03421	.15115
V10	.24189	.27136	.47213	.09780	.06332
V11	.10088	.06514	.16536	.77387	.14733
V12	.04225	.20863	-.06671	.20801	.00902
V13	.11149	.81665	.15722	.03468	.06997
V14	.27410	.26674	.24589	.32222	.02834
V15	.18226	.10145	.63464	.21702	-.01076
V16	.02572	.09587	.54013	.16186	-.00426
V17	.45782	.10937	.11484	.00788	-.11448
V18	-.13136	-.09589	-.15909	-.15166	.03387
V19	.32285	.02289	-.08427	.30569	.20022
V20	.46666	.34028	.02612	.19407	.13890
V21	.38496	.40972	.09854	.08627	.02725
V22	.31687	.07346	.10308	.07038	.16925
V23	.24900	.00943	.27950	.17417	.03670
V24	-.19543	.01797	-.04381	-.03739	-.08112
V25	.17933	.20361	.00681	.32519	.17930
V26	.11074	.21094	.08382	.32093	.24520
V27	.08068	.28830	.13123	.03883	.08822
V28	.20025	.05497	.27181	.07794	.43065
V29	.00774	.00787	.10329	.09305	.26914
V30	.13273	.00612	.17793	-.00706	.71424
V31	.08273	.10933	.62493	.04457	.35789