ED 334 762   EC 300 508

AUTHOR   Brennan, Tim; Anderson, Frank
TITLE   A Longitudinal Study of Factors Producing High School
                Dropout among Handicapped and Non-Handicapped
                Students. Final Report.
INSTITUTION   Institutional Development and Economic Affairs
                Service, Inc. Nederland, CO.
SPONS AGENCY   Special Education Programs (ED/OSERS), Washington,
                DC.
PUB DATE   Feb 90
CONTRACT   G008530257
NOTE   347p.
PUB TYPE   Reports - Research/Technical (143)

EDRS PRICE   MF01/PC14 Plus Postage.
DESCRIPTORS   *Community Characteristics; Demography;
                *Disabilities; *Dropout Characteristics; *Dropouts;
                Ecological Factors; High Schools; *High School
                Students; Institutional Characteristics; Longitudinal
                Studies; Predictor Variables; School Districts;
                School Role; *Student Characteristics
IDENTIFIERS   *Colorado

ABSTRACT
        This report presents findings from a multi-year
project on handicapped and non-handicapped high school dropouts,
including a longitudinal study of high school students in five
Colorado school districts and a social ecological study to identify
community characteristics which predispose a school district to high
dropout rates. The longitudinal study tracked 460 students from 9th
to 12th grades or until they dropped out. The ecological study
examined all 177 Colorado school districts. Findings from the
longitudinal study are reported for dropouts, stagnators, thrivers,
and middlers, with data on: basic adjustments/bonding patterns to
high school; family background; differential school climates and
student experiences; peer relations; personal characteristics and
behavior; changes in youth between 9th and 12th grades; and
prediction of dropping out and school withdrawal. Results of the
ecological study are reported for handicapped and nonhandicapped
students and include the following: variation in dropout rates across
school districts; correlations between dropout rates of different
groups of students; characteristics of communities with high dropout
rates; the importance for prediction of both community
characteristics and school district educational variables; and a
typology of school districts. Appendices include: (1) discussion of
scales and measures used in the study; and (2) the questionnaire.
Includes 91 references. (DB)

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A Longitudinal Study of Factors Producing High School Dropout Among Handicapped and Non-Handicapped Students

by

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Final Report

to

United States Department of Education
Office of Special Education Programs
February, 1990

In Fulfillment of PR/Award Number G008530257

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EXECUTIVE SUMMARY

I Overview

This report presents findings from a multi-year project on high school dropouts. The project had two components:

A. A longitudinal study of high school students: This component involved five Colorado School Districts across grades 9 through 12.   The aim was to clarify the dynamic processes preceding high school dropout. Both handicapped and non-handicapped cohorts were examined.

B. A social ecological study: This component examined socioeconomic, demographic and other community correlates of dropout rates.   The aim was to identify the community characteristics which predispose a school district to have high dropout rates.   Both handicapped and non-handicapped dropout rates were examined.

II Technical details of the Studies

The longitudinal study used a <u>cohort sequential longitudinal</u> design following students from 9th to 12th grades.   A 9th grade cohort was followed until 11th grade; a second 11th grade cohort was followed to the end of 12th grade.   Random samples were selected in both handicapped and non-handicapped stratifications.   The final longitudinal sample, across the 5 districts, consisted of 460 students tracked from 9th to 12th grades or until they dropped out. Several theoretical models of dropout were utilized: e.g., the Frustration Self-Esteem model, and the Participation-Identification (Social Bonding) model.

The ecological study examined all 177 Colorado School Districts.   Socioeconomic and demographic data were merged with school district data (financial expenditures, teacher qualifications, standardized test scores, dropout rates, and so on).   Several multivariate methods were used to pinpoint the correlates and predictors of dropout and characterize high risk school districts.

III Results of the Longitudinal Student Survey

A. Basic Adjustments/Bonding Patterns to High School

Chapter 3 describes four basic styles of bonding to school using cluster analysis on the final wave of test data:

Dropout: Impaired bonding

These youth have minimal bonding to school or education. Their profile consists of: disliking school, low aspirations, low expectations, high boredom and acceptance of dropout as an alternative to school. Involvement in school has eroded.

They make little effort at schoolwork, extra-mural activities or classroom activities, and have high levels of lateness, truancy, etc. In belief systems they have lost the belief that education is a way towards a future job or career. They see the school discipline system as unfair.

Handicapped and non-handicapped students fall into this profile at the <u>same</u> rate as other youth: i.e., this profile characterizes handicapped dropouts equally as well as non-handicapped dropouts.

Stagnators: Impaired bonding

This group has essentially the same profile as dropouts. All commitment and involvement bonding is impaired and social isolation, boredom, meaninglessness and withdrawal are common to both profiles.

Handicapped and non-handicapped youth are disproportionately likely to fall into this stagnation group. Approximately 33% of handicapped students are in this type versus 25-28% of youth in the overall sample.

Thrivers: Strong conventional bonding

These youth demonstrate high commitment, high aspirations, high expectations and high participation. They enjoy school and work harder than other groups. Their profile for hard work, enthusiasm, and interest in academic advancement is in sharp contrast to dropouts and stagnators. Thrivers exhibit low boredom, respect for teachers, and a belief that education is highly relevant to their future careers.

Handicapped and non-handicapped youth are disproportionately <u>less</u> likely to be in this type. Only one in five handicapped students falls in this cluster. Approximately the top third of the overall sample falls in this profile.

Middlers:

This group, about one-third of the overall sample, have retained some moderate aspirations and expectations for future success. However, most of their scores hover around the average of the school population.

B. Family Background of the Types

Family background and parental support for education differs significantly among the types.

Dropouts: Parental education is lowest among dropouts. Family transience, broken homes, disruption of schooling through family relocations, are all significantly high. The data indicate that these parents do not support education, are

disinterested in school, and stay uninvolved. Dropouts show extreme and atypically high withdrawal and separation from their parents compared to other groups.

Stagnators: This group is basically similar to the dropouts family profile. Parents are disinterested, uninvolved in school, rejecting and non-nurturant. However, this group does not have as high a level of transience and relocation as dropouts, and their parents are slightly better educated. A disproportionate percentage of Hispanic youth fall into this group (25%) while Anglos (non-Hispanic Caucasian) are less frequently found in the group (18%).

Thrivers: Parents of these youth are stable, supportive, better educated, interested in education, involved in school, and provide consistent achievement demands. Relationships between youth and parent are positive and nurturant. These youth remain attached to parents.

Middlers: These youth are intermediate between thrivers and stagnators. Their parents impose fairly consistent achievement demands. Female students have a disproportionate tendency to avoid this middling group and move towards the extremes of thrivers or stagnators. Boys are disproportinately found in stagnating and middling groups.

C. How do Youth Experience High School: Differential School Climate

Cross classifying the types against high school climate reveals significant differences (beyond $p = .01$) in how the four groups experience school. A single high school can provide very different experiences to youth in different types.

Dropouts: These students experience teachers as imposing negative and stigmatizing labels, providing low levels of encouragement, and little support. They experience the school social milieu as less supportive than other youth and are more lonely. They report low feelings of safety, high perceptions of gang influence, higher racial tension and higher feelings of powerlessness regarding their ability to influence the educational environment. School rules are seen as unfair.

Stagnators: These youth xperience school in essentially the same way as dropouts.

Thrivers: This group reports high encouragement from teachers, positive labelling, and high individualized instruction. They see school as effective and relevant to their future, and feel empowered to influence the critical things happening at school. School is experienced as being

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safer, with less feelings of racial tension or pressure from gangs. They report the lowest levels of victimization among all types.

Middlers: This group has an intermediate position between the thrivers and the two lower groups.

D. Peer Relations

Peer relations are significantly different among the types. Both multivariate and univariate significant differences were found.

Dropouts: These youth have peers with high scores for using drugs, getting into trouble with police, dropping out of school, being disinterested in school, and so on. An interesting finding is that they also report higher than average levels of emotional loneliness.

Stagnators: This profile is essentially the same as the dropouts.

Thrivers: These youth report attachments to conventional youth who are interested in school, have high aspirations, low drug use, and low levels of being in trouble with police. Emotional loneliness is low and social integration scores are high.

Middlers: These youth affiliate with others who retain conventional aspirations and have low levels of dropout. They are generally intermediate between the positive and negative groups.

E. Personal Characteristics and Behavior

Highly significant differences, both univariate and multivariate, are found between groups for this domain.

Dropouts: These are characterized by high normlessness, drug use, low self-esteem, low learner self-esteem, identity confusion and feelings of external control or powerlessness. They also report lower levels of interpersonal competence than other groups.

Stagnators: This profile is the same as that of dropouts.

Thrivers: This group report significantly higher levels of self-esteem, learner self-esteem, social competence, and internal control or personal power. They have significantly low scores for drug use, normlessness, impulsivity or risk taking, and identity confusion.

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Middlers: This profile is intermediate. They have low scores for drug use.

F. How do Youth Change Between 9th and 12th Grades

Chapter 8 describes how students change across the high school years. Only selected issues are presented in this summary:

Aspirations: At 9th grade the groups are already significantly different in aspirations suggesting that this difference predated high school. By 10th grade dramatic falls have occurred in the aspirations of dropouts and stagnators. Erosion then continues steadily for stagnators. The graphs suggest a difference between "early dropouts" who have already lost aspirations versus "late dropouts" who retain some aspirations during the earliest part of the high school experience.

Educational expectations: Again, the groups are significantly different in expectations in 9th grade, suggesting that the divergences occurred earlier. However, these initial differences widen dramatically, with all groups losing expectations except thrivers. Dropouts and stagnators lose expectations rapidly between 9th and 10th grades. This suggests that severe damage occurs in the earliest phases of high school.

Belief in the value/meaning of education: Thrivers, in 9th grade, have a significantly higher belief in the value of education for a future career than the other groups.
Erosion of belief in schooling then occurs rapidly for stagnators and dropouts between 9th and 10th grades. The data again suggest that early dropouts have lost this belief rapidly, while late dropouts partially retain remnants of this belief into later stages of high school.

Belief in fairness of school rules: Significant differences in 9th grade suggest the groups diverged well before high school. All groups, including thrivers, then show a decline in this belief.

Tolerance of dropping out: Thrivers are significantly less tolerant towards dropping out than other groups. This intolerant attitude is retained throughout high school. Dropouts and stagnators exhibit a steep rise in tolerance to dropout between 9th and 10 grades, again implicating the earliest stages of high school.

Boredom at school: Thrivers throughout high school have the lowest levels of boredom. This difference is significant in 9th grade. Stagnators and dropouts exhibit steep rises in

boredom from 9th to 10th grades. The graph suggests that "early dropouts" differ from "late dropouts" in experiencing severe boredom at earlier stages of high school.

School effort: Thrivers work significantly harder than other youth throughout the high school years, suggesting that this difference pre-existed high school. From a lower starting point in 9th grade, dropouts and stagnators then show a further dramatic reduction in effort in the ensuing grades.

School avoidance (truancy, lateness, etc.): Thrivers and middlers consistently attend school on time throughout high school, while stagnators and dropouts are at the other extreme. A steady divergence occurs across successive years.

Academic grades: The groups exhibit a huge significant difference in 9th grade. Thrivers have higher grades than other groups. A significant erosion in academic performance occurs for stagnators and dropouts across the ensuing years.

Self-Esteem: By 9th grade significant differences already exist between the groups. Dropouts and stagnators have lower self-esteem than the other two groups. Dropouts and stagnators then show further erosion of self-esteem. The two other groups show no major erosion in self-esteem across high school.

Parent achievement demands: In 9th grade parental achievement demands significantly differ between the groups. Thus, this difference most likely predates the high school years. A rapid divergence seems to occur by 10th grade: i.e., the achievement demands of parents of stagnators and dropouts steeply declines, while demands of thriver's parents intensifies in 10th grade.

Parental pressure to continue schooling: This is highest for thrivers throughout high school. There is a dramatic fall in parental pressure to continue schooling for stagnators and dropouts by 10th grade. The data again suggest evidence of early and late dropouts, with early dropouts showing the earlier and more complete erosion of parental pressure to continue schooling. Thus, youth with more apathetic parents discontinue school earlier.

Delinquent friends: The 9th grade data indicate significant differences in affiliation to delinquent peers. Again, this difference would appear to predate high school. Dropouts have the highest affiliation to delinquent peers.
These 9th grade differences, however, then escalate rapidly in the earliest stages of high school with a dramatic increase in affiliation to delinquent peers for stagnators and dropouts by 10th grade. These affiliations then remain stable for the

duration of the high school experience.

G. Predicting Dropout and School Withdrawal

Chapter 9 reports on correlational and regression studies to predict dropout and school withdrawal. A special criterion variable was constructed by converting dropout from a dichotomous to a continuous variable with dropout at one extreme. Intermediate stages of this criterion identify frequency scores for truancy, lateness, cutting classes, etc.

Predicting dropout/withdrawal using family variables: Family variables emerge as powerful predictors. The most powerful include: family transience, negative labelling, parental dissatisfaction, parental pressure to continue schooling and parental involvement with schooling. Wave 1 family variables in the regression analysis predict 19% of the final variance in dropout/withdrawal. When Wave 3 data is used, this regression accuracy jumps to almost 30% of the variance.

Predicting dropout/withdrawal using Social Bonding: The school bonding variables have high predictive accuracy in regression against final dropout. Using Wave 1 bonding variables the multiple regression is highly significant in predicting who drops out $(R = +.51, p = .000)$. Critical variables include: academic grades, withdrawal in classroom, avoidance behavior in 9th grade, and so on.

Predicting dropout/withdrawal using school climate: This data also predicts dropout to a significant level $(R = +.30, p = .000)$. Negative labelling by teachers is the most salient aspect of the school climate using wave 1 data. At wave 3 the regression is even more powerful $(R = .43)$. Salient variables include: Negative labelling by teachers, disrespect from teachers, level of perceived support from counselors, levels of perceived encouragement/discouragement from teachers, and feelings of danger/safety in school.

Predicting dropout/withdrawal from peer relationships: Peer relationships correlate significantly with dropout. The multiple regression analysis is again significant $(R = .33, p = .000)$. Salient peer variables include: delinquent peers, social isolation, dropout among friends, positive role models for education.

Predicting dropout/withdrawal from Personal traits: Personal characteristics also have significant correlations with dropout/withdrawal. Multiple regression at both wave 1 and 3 are highly significant: wave 1 data, $R = 0.43$, which then increases to $R = .56$ at wave 3. Salient predictors include: low learner self-esteem, drug use, external locus

of control, and implusivity.

Overall regression using best predictors from each domain:
Using the best predictors from separate domains, a final set
of multiple regressions were run. Using wave 1 data this
produced a highly significant regression equation with R =
.55, and p = .000. When the later wave of data was used this
jumped to R = .63. The most critical predictor variables
included: drug use, negative labelling by mother, lack of
parental support for education, and feeling disrespected by
teachers.

IV   Results of the Ecological Study of Colorado School Districts

Chapter 10 provides the findings of the social ecological
study of Colorado School Districts.

Aim: The aim of this work was to characterize high and low
risk school districts and communities in terms of their
dropout rates for both handicapped and non-handicapped youth.

Procedures: A data base for all 177 school districts was
compiled using 1980 Census sources for social, economic and
demographic features of school districts. This was "married"
to a 1986 State Department of Education data base covering
numerous educational characteristics of the same school
districts (teacher/pupil ratio, educational expenditures,
dropout rates, standardized achievement tests, etc.). This
data base was analyzed for predictors and correlates of both
handicapped dropout rates and non-handicapped dropout rates.
 Ethnic and sex differences in dropout rates were also
analyzed.

A. Variation in Dropout Rates across School Districts

Great variation existed in dropout rates across school
districts in both handicapped and non-handicapped rates. The
computed rates do not attempt to provide State Average and do
not take differential district population sizes into account.
Thus, they may not be comparable to State Department
computations. They simply average the district scores as
provided by State Department data.

1.   For handicapped, the annual dropout rate averaged
across school districts is just under 2%. However, the
variance is almost as large (1.24) indicating a skew with some
districts reporting very high rates. One district had an
annual rate of 5.1% while at the other extreme many were close
to zero. Care must be taken with this score since the
reporting procedure for handicapped rates used administrative
units rather than school districts.

2. For non-handicapped annual dropout rates, the average across districts was 4.4% and is thus much higher than the handicapped reporting annual rates of less than 3.9%.

B. Correlations Between Dropout Rates of Different Groups of Students

1. Handicapped rates versus non-handicapped rates

These correlate together at only +.34. This low correlation may be expected given the fact that they are assessed for different geographical units.

2. Overall dropout rate versus various sex/ethnic strata

Very high correlations exist between overall dropout rates, and those for different sex and ethnic breakdowns. Only in the case of Black youth was the correlation against the overall rate somewhat lower (+.35). This occurred because Black youth tend to be located only in urban areas, and many small rural areas had no Black youth. A factor analysis pulled all the separate ethnic/sex rates into one overall factor.

3. Comparing 1980 Census Dropout Rate against 1986 State Department of Education Rates

Although these two rates are separated by 6 years and use different procedures, they were significantly correlated (R = +.45). This suggests that although some districts have improved their standing and others have lost, there is a substantial historical similarity regarding high and low achieving districts across this time span.

C. Characteristics of Communities with High Dropout Rates

Separate correlations were run for handicapped and non-handicapped[1] dropout rates. However, essentially the same pattern is found for both rates. High risk communities have the following characteristics:

1. **Low socioeconomic class scores**
   o High rates of manual workers;
   o High adult dropout rates;

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[1] A note on word usage and meaning. Interchangeable descriptors for handicapped and non-handicapped youth are used in the main body of this report. The words/terms special education or, special education and handicapped youth, are synomous in use. Further, non-handicapped students/youth are interchangeably referred to as "mainstreamed", or "normal". This oversight is unintential.

o High 1980 youth dropout rates; and,
o Low rates of adult college graduates.

2. **High family disorganization**
   o High single mother heads of households; and,
   o High foreign born populations.

3. **School District and Educational variables**
   o Higher expenditures on youth correlate with lower dropout rates (generally);
   o Higher achievement scores correlate with lower dropout rates;
   o High Anglo student population correlates with lower dropout rates;
   o Ethnic compatibility between Hispanic students and teachers is only weakly related to Hispanic dropout rates;
   o Teacher salaries and qualifications have no strong relation to the dropout rates (This is mediated by urban rural differences); and,
   o Higher pupil/teacher ratios correlates mildly with higher dropout rates. This is mediated by urban/rural differences.

4. **Urban vs. rural Differences mediate all sample wide correlations**
   o Urban districts have higher dropout rates than rural areas;
   o High Black population correlates with high dropout rates;
   o High urban districts contain higher Black youth populations;
   o Family disorganizations correlates with high minority populations (both high in certain kinds of urban areas);
   o Hispanic youth appear to reside more evenly between urban and rural districts; and,
   o Teachers salaries, qualifications and experience are generally higher in urban than rural areas.

D. What is More Important in Predicting Dropout Rates: Community Characteristics or School District Educational Variables?

Both are important. However, in separate multiple regression analyses, community characteristics (social, economic and ethnic characteristics) had higher multiple correlation levels (R = +.58) than school district variables (expenditures, teacher qualifications, etc.), with an R = +.46. When school district variables were added to community characteristics data only a small increase in explained variance was noted.

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E. Community Profiles in Colorado: A Typology of School Districts

A typological analysis was conducted using cluster analysis to clarify profiles of school districts associated with high and low dropout rates. The following community profiles were identified.

1. **High risk poor inner-city urban districts:** These have the highest dropout rates in general and for specific ethnic groups. They also have low achievement scores. This type of district typically has a large student population and large schools.   Social characteristics include: high minority populations,   low   socioeconomic   designators,   low   adult educational level, high family disorganization, large crowded classes, and low per pupil expenditures.

2.   **High   achieving   urban   districts:**   These   urban communities   have   the   lowest   dropout   rates   and   highest achievement scores.   Social characteristics include: Anglo population is predominant, socioeconomic scores for both financial and educational components are highest, adults are well educated and hold good jobs, low family disorganization, and school expenditures on youth is higher than average.

3. **Low achieving small rural minority communities:** These small rural communities have very low achievement scores and higher dropout rates than other rural communities.   Social characteristics include: high Hispanic population, higher poverty, high adult dropout rates, low occupational status, low teachers salaries, and low expenditures per student (although class sizes are also small).

4.   **Small rural Anglo communities: Low rates and average or high achievement:** These small rural districts are highly prevalent in Colorado. They have low dropout rates and above average achievement scores. Social characteristics include: mainly Anglo student populations and Anglo teachers, higher than average poverty, relatively low adult education levels, teachers salaries and qualifications are low.   However, schools   are   small,   pupil/teacher   ratio   is   small,   and expenditures on students are higher on average as a result.

5.   **Small   rural   Anglo/mixed   communities: Average Educational performance:** On dropout rates and standardized tests, these communities are average or slightly above. They score generally higher than the two minority communities (1 and 3).   Socially, these rural communities are also Anglo dominated, but have a higher proportion of Hispanic youth than rural areas (4). They are also more affluent. However, again various indicators suggest that adult educational status is

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not high. Teacher and educational data are similar to the other rural communities: i.e., low salaries, qualifications and experience, higher transience of teachers, smaller schools and classes.

CHAPTER 1

LITERATURE BACKGROUND: HIGH SCHOOL DROPOUT AMONG HANDICAPPED AND NON-HANDICAPPED YOUTH

Literature Background: High school dropout among normal and handicapped students

Dropout rates among handicapped children: A need for research

Various National and Local studies suggest that the dropout rate among students receiving special education services significantly exceeds the general dropout rate. Zigmond and Thorington (1985) report that Special Education and Handicapped students had a significantly higher dropout rate and significantly lower basic skills competency levels than same age non-learning disabled peers. A Minnesota study, found that 80% of youth who dropped out may have been eligible for special educational services (St. Paul Public Schools, 1981). A Vermont report found that 28% of a random sample of high school special education students left school before 18 (Hasazi et al, 1985). In New Hampshire one study found that the overall dropout rate among handicapped students was 40% (Lichtenstein 1988). Continuing findings from the High School and Beyond National Longitudinal data also suggest that there is a higher rate of dropout among special education students than among students defined as non-handicapped (Plisko and Stern 1985).

In response to these statistics the 8th Annual Report to Congress (US Dept. of education 1986) raised concern over the high rates of dropout amongst youths with handicaps. Thus, State Education Departments are now required to collect data on rates of handicapped dropout youth in order to compile more adequate data on this issue and further study the problem (ERIC 1988).

The need for early identification

These findings suggest a need for better procedures for identifying potential dropouts as well as improved implementation of comprehensive programs to retain students with handicaps. Weber (1986) argues for a systematic approach to identifying potential dropouts before entry into high school. The present study is restricted to the high school years and will develop profiles of special education high school students who are at risk of dropping out. The basic argument is that the dropout-prone handicapped student must be identified early enough so that the most effective forms of positive intervention can be initiated. A common suggestion is that specialized guidance and counseling services be made available to these students at various points throughout their educational careers.

1. Prior to entry into high school

2. At the point of entry into high school
3. Continuously during high school career.

The fundamental goal of the present study will be to focus on point 2 and 3, in the above stages. Educators are not being made aware of the factors which produce student dropout and which might most fruitfully be integrated into preventative efforts in the high school. Yet, there seems to be a consensus (ERIC, 1988) that such information should be collected, provided to educators, and systematically used for remedial programming and counseling, and that there are serious deficits in the provision of such diagnostic and assessment profiles to educators.

Inadequate Services for Handicapped students

A futher concern is the inadequacy of remedial programming aimed at dropout prevention among handicapped students. Educational programs for high school students with handicaps is often criticized as inadequate (ERIC, digest #451, 1988). Schools have a reputation of being confused in their purposes, and seriously disjointed in implementation of programs to serve handicapped students (Catalano 1986). Effcrts to mainstream handicapped students varies widely across school districts, and recieves varying levels of support. Finally, there has been mounting skepticism and concern regarding the value of retention without specialized and effective remediation programming (Sikes and Hildebrand, 1986).

A fundamental problem; Student adaptation to failure

Dropout is one extreme adaptation to failure in high school. Students respond to failure or difficulty at school in different ways. A central aim of the proposed research is to examine the nature, progression, and correlates of certain typological adaptations to failure among both hardicapped and non-handicapped students across the high school grades. Clearly, the on.set of such adaptations occurs before high school since many students are labelled as failures earlier in their school careers. However, the specific purpose of the present study is to clarify these patterns within the context of the high school.

We aim to examine any impairment or weakness in normative "bonding" to high school and to one's educational future. Each student has motivations, aspirations and committment bonds to school. These "bonds" are theoretically critical for success in high school, and serve to "inoculate" youth against dropping out (Jessor and Jessor 1977; Elliott, Ageton and Huizinga 1984).

Failure in the development or maintainance of such educational values, beliefs and aspirations may create a predisposition toward dropout

from high school (Elliott and Voss 1974; Brennan, Huizinga and Elliott 1978; Hawkins and Lishner 1986). Furthermore, the exact timing, nature and causes of these failures of social bonding are needed for the design of remediation programs prior to entry into high school, as well as within the high school itself.

Thus we initially review current findings on children and youth's adaptations to failure - in the general adolescent literature as well as in the literature on handicapped students.

Differential responses to Failure: An emerging descriptive typology

It is well established that individual children respond differently to failure situations (Boggiano, Main and Katz 1988; Harter, Whitesell and Kowalski 1986). Some children try harder, with determined and systematic effort, and a strong desire to overcome a poor performance. Other children fail to exhibit this motivation and adopt various maladaptive patterns (rebellion, hostility, apathy, boredom, distraction, fear, anxiety, and helplessness, etc). The exact typological structuring of these adaptations is currently of intense research interest (Boggiano, Main and Katz 1988).

Work at the high school level has been atheoretical compared to work at the early grade school level. Most work at the high school level has been focussed on the development of general path analysis models of school performance, rather than the typological description of adaptations to the high school. For both theoretical and applied program development reasons it is important to clarify the causes, correlates and consequences of these diverging styles or adaptations.

There are many unanswered questions regarding the determinants and consequences of these differential profiles in the literature on handicapped children and dropouts (Speece, McKinney and Appelbaum, 1985). Research on the differential adaptation of children to failure has identified some tentative, and, as yet atheoretical types (Boggiano, Main and Katz 1988; Boggiano and Barrett 1985). A useful review of behavioral typologies in elementary and middle school classrooms is given by Lambert and Urbanski (1980). The following broad types are suggested:

1) Mastery Orientated: This pattern has been labeled "Mastery orientated" children. They respond to failure with systematic effort, determination, optimism, and no loss of enthusiasm for schoolwork.

2) Anxious withdrawal/helpless: This type responds with anxiety, fear, withdrawal, dissipation of effort and attention, and as might be expected a deterioration of performance. Passive withdrawal is a generic feature of this type (Lambert and Urbanski 1980). The group is often labelled as a having problems of "personal adjustment", learned helplessness or learning disabilities (Boggiano, Main and Katz 1988).

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Passive submission to authority is another theme of this type. This is perhaps related to intimidation by teachers.

3) **Bored, apathetic and disinterested:** This related sub-type is bored, disinterested and distractable. They exhibit minimal systematic effort in doing schoolwork. However, they may not exhibit the pattern of fear, anxiety and helplessness of the second group. Lack of enjoyment and withdrawal, and dissipation of effort and attention, however, is held in common with the second group.

4) **Aggressive, acting out, rebellious:** This type clearly overlaps with the bored, disinterested group - and often appears as a "sub-type" sharing the same pattern of boredom, apathy and disengagement Learning disbilities are often attributed to both of these types. Children on the rebellious path reject the school's achievement ideology and it's discipline system. They subvert teacher and administrative authority, disrupt classes, and generally exploit any opportunity for disruption, especially when it hurts the school officials. They use any opportunity to display opposition to school. High rates of dropout might be expected of such youth.

<u>Typologies in Special Education: Are they consistent with the above types?</u>
A few investigators have examined heterogeneity among special education students - particularly LD and EBD - with empirical classification techniques (Fisk and Rourke 1979; Torgeson and Dice, 1980 Lyon and Watson 1981; Satz and Morris1981; Keogh et al 1982; Mckinney 1984; Speece, McKinney and Appolbaum 1985).

The diversity among LD students is starkly illustrated by these studies. In particular, Speece et al (1985) provide strong support for a "multiple syndrome interpretation " in classroom behaviors of LD children that is fairly consistent with the adaptations to failure described above.

Some of the available evidence suggests that special education students adopt responses to failures with styles which render them disproportionately "high risk" for dropping out. LD students have been found to often display a general pattern of maladaptive classroom behavior that is strongly associated with failure to progress academically. They are more distractable, more dependent and less task oriented (McKinney and Feagans 1983; Mckinney and Speece1983). Zigmond et al (1988) recently compared the behavior patterns of learning disabled and nonlearning disabled students in high school academic classes. The LD students tended to be unfocussed, inattentive and verbally passive.

However, such global comparisons, disguise more than they reveal. One major objective of the present study is to move beyond such global comparisons of handicapped vs. non-handicapped and unravel the differential styles which characterise both of these groups of students. To date, only several studies have moved beyond the single global profile to

examine diversity of adaptations in the classroom.

Classroom behavior patterns of special education students:
Speece, McKinney and Appelbaum (1985) attempted to isolate distinct clusters of LD students based on classroom behaviors as rated by teachers. The following types were found, and were validated by a series of internal and external validation techniques.

1. Normal adaptive types: Three similar clusters of rather normally behaving children were identified. These clusters appeared to be well adjusted and only mild attention deficits. The clusters represent minor variations of normal classroom behavior and gender differences. Task oriented behavior did not appear inappropriate to teachers. Thus, aproximately one third of this LD sample did not exhibit maladaptive patterns of behavior. This is consistent with the previous LD typological studies using different measures (Lyon and Watson 1981, Satz and Morris 1981).

2. Passive withdrawn and dependent type: This cluster was withdrawn, dependent, and had high ratings for introversion. It constituted 11% of the sample and was comprised mostly of girls. The profile is strikingly similar to the passive helpless type described in the earlier section.

3. Acting out/Hostile types:

Two sub-types of acting out and hostile types were found. However, this distinction may be challenged as insignificant. An "acting out" style was described as having mild attention deficits, high distractability and hostility, and low considerateness. They were characterized as poorly socialized and prone to conduct problems and acting out behavior. A "hostile" type was also described and found to constitute about 19% of the sample. These represent sub-types of the more general bored rebellious type described above.

Continuing need for research regarding types of adaptation to school

This line of typological research raises as many questions as it solves. A variety of methodological and substantive issues remain unresolved - for both the general high school population and special education students. The following are worth noting:

1.The need for replication and validation of behaviorial types:

Speece, McKinney and Appelbaum (1985) acknowledge that although this approach has promise for solving both theoretical and practical problems associated with LD and other students, much has yet to be done. They assert that typological research on such school samples and patterns of adaptation using empirical classification techniques is "...at an embryonic stage of development" and will require converging evidence from other samples regarding the stability and practical importance of the subtypes. A subsidiary goal of the present work is to extend the Speece,

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Mckinney, Appelbaum work into the high school level - using both special education and normal students.

A further critically needed replication stems from the fact that the Speece et al, research is based on teacher ratings. The question naturally arises whether the typology would replicate if student self-ratings of their behavior was used. Furthermore, would the typology replicate across a more general sample of students in special education classes, rather than specifically a sample of LD students.

2. Small sample sizes and difficulty of interpretation

Much of the past work in this direction has been based on very small sample sizes. For example, the Speece et al (1985) work was done on only 63 children. It is well known that mean profile of clusters become unstable as sample sizes become very small. These authors also note that certain clusters were difficult to interpret while other clusters were very small ($N=3$) and therefore liable to be unstable. This may partially explain the difficulty of interpretation of certain clusters.

3. How many different sub-types of LD children exist?

Speece et al (1985) claim that they have discovered 7 validated types among LD children. However, several of these were overlapping sub-types, and there were serious problems in the methodology used to select an optimal clustering level. This has been a perennial problem in clustering analysis (Brennan 1987 (a); Aldenderfer and Blashfield 1984). They used Wards minimum-variance and Complete Link clustering. Yet, it is well known that both approaches tend to fragment natural clusters into artifical subtypes thus suggesting misleadingly high numbers of overlapping or highly similar clusters. The overlapping interpretations of the LD clusters (i.e. three "normal" clusters; and two variations of the acting out type) also suggests fragmentation of larger clusters. This issue requires careful validation and replication, since it is critical to correctly assess the number of clusters.

4. Many of the past studies are based on cross sectional data

There is a dearth of longitudinal studies examining adaptations to school across time. There is little work on high school typologies of special education student typological adaptations to school using longitudinal data. Speece, Mckinney and Appelbaum et al (1985) have recently embarked on longitudinal study of their typology (McKinney 1988) Virtually all published research on behavioral typologies in school (including handicapped children) has been cross-sectional in nature.

5. Agreement only on Broad contours: Inadequate specificity and serious omissions in describing the types

This research area is characterized by different researchers using different theoretical positions, different methods, different variables, and different levels of schooling. Thus, they have described their typologies in slightly different ways and there is only a general

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<u>agreement</u> on the broad contours of these typological structures.

The broad styles of classroom behavioral adaptations decribed earlier, with various modifications, have re-appeared over numerous factor and cluster analytic studies (Brennan and Youngman 1970; Lambert and Urbanski 1980; Speece, Mckinney and Appelbaum 1985). They are also supported in ethnographic studies of failing children e.g. Willis (1977), McLoud (1987). However, many impoitant blocks of variables have been omitted - e.g. peer relationships, family background, etc.

6. The atheoretical nature of most typological work on high school adaptations

Most of the prior empirical typological work is strictly descriptive in it's intent, and largely focusses on behavioral adapations in classroom. An exception is the work on learned helplessness and it's link to extrinsic/intrinsic motivation (Boggiano et al 1988).

Typically the variables used in such studies (e.g. Speece et al 1985) do not attempt to provide theoretical insights into the reasons for the emergence and development of these behavioral orientataions. Thus, the task of linking descriptive typologies to theoretical processes is yet to be addressed.

Innumerable theoretical questions about these type adaptations to school remain to be answered:

- Are high school processes and styles different from those in grade school?
- What is the role of high school in these adaptations?
- What is the role of the family in producing these differences?
- why do several different adaptations emerge from similar school failure situations?
- What other psychological, cognitive, or linguistic processes may be present
- How do the type patterns change over time?
- What are the consequences of these adaptations regarding dropout?

7. What is the practical importance of identifying different typological adaptations to high school

Referring to grade school and kindergarten, Speece et al 1985 argue that the consequences of early classroom behavioral patterns may be critical for the long term educational success of the child. The same arguement applies at the high school level. The underlying processes involved in creating maladaptive adaptations to high school must be identifed and alleviated if possible. Some may lie in the school, others in the home, or in the personality and motivational structure of the youth. These processes may have the potential to destroy the motivations which

bond each child to school. If these motivational and social bonds are broken, the groundwork may be set for early dropout from school.

When does erosion of educational bonding begin?

We now examine theoretical frameworks relevent to the above questions. This theoretical examination is critical to the present research and has provided quidelines regarding critical variables and data analysis approaches.

There are many unanswered questions about how the different adaptations to school emerge. The consolidation of such styles may have occured in grade school and middle school. Even earlier predispositions may stem from the family and early socialization of the child. Certain predispositions may be quite personal (e.g. basic intelligence, abilities, and personality characteristics).

Conflicting evidence emerges from the literature regarding the dynamics and timing of the erosion process. Some findings suggest that the basic trajectories are set at birth (or before) and that social class, ethnicity, poverty, and parental education constitute fundamental causative forces. Other findings suggest that the dynamics of school adjustment, achievement and dropout are far more complex and somewhat malleable across time and are not cast in concrete based on early family socialization.

Although the literature indicates that several basic adaptations emerge in early grade school, the final loss of aspirations and the decision to dropout seems to occur - for many youtn - after entry into high school (Teachers College Record 1986). In this section we review some of the literature on early adaptations to grade school to provide a context for our study of the high school years.

The onset of diverging typological patterns: What grade levels are critical?

Although the focus of the present study is on high school many factors are in place earlier in the school career of a student. This provides an important context for understanding and explaining the further erosion which occur in the high school and teenage years. In this section we briefly examine some of the evidence indicating the importance of the 4th grade as a useful staring point to understand the dynamics of erosion. We identify several negative trends which start in grade school and which may culminate in high school dropout.

(a) Do the divergences start at the 4th grade?
Watt et al (1987), in a retrospective examination of trends

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across grades K through 12, reach the very strong conclusions that:

"by the time certain classes of children reach middle school, the die is cast and their educational destiny is sealed"

and that:

"the most fundamental causes of educational demise must be traced much earlier in time (than high school) to the beginnings of the process of acculturation in the school system".

Their research findings suggests that although there are earlier predispositions separating successful from failing children, the process of divergence accelerates in the 4th grade, and appears to continue throughout the whole school career, including high school.

They divide their sample into achievers, strugglers, and dropouts (from high school data), they graphed these groups on GPA, school attendance, and on nationally normed Tests of Scholastic Ability. They then traced the average scores for these groups backward in time across all grade levels using historical data collected from high school records.

The data indicated that in the K-3 phase - for GPA and absenteeism - there were minimal differences. However, starting at 4-6, there was a dramatic and steady divergence, with the two lower groups (strugglers and dropouts) falling successively further behind across grades 7-10. A similar pattern is discovered with absenteeism. Speece, Mckinney and Appelbaum (1985) similarly found no difference in achievement levels for LD types in first and second grades.

Some evidence, however, indicated that differences started even earlier. In the test battery scores, the achievers even at the start of schooling scored substantially higher then strugglers and dropouts. Thus, there were profound and pre-existing differences. However, a substantial divergence occurs after 4th grade which magnifies the initial differences The achievers further improve their scores while both the strugglers and dropouts progressively fall below the 40th percentile. Watt at al (1987) conclude that a demoralization process begins several years before entry into high school and is a primary cause of educational marginality and dropout.

However, other studies have indicated that the educational aspirations of students are still intact at entry into high school and that there is significant erosion during the high school years (Teachers College Record 1986). Thus, it is likely that the dynamics of this erosion process continue to unfold during high school.

(b) Evidence of early (family/social class) predispositions from prediction studies of dropout and "delinquent behavior

Lloyd (1978), using data on 3rd graders could identify 75% of future dropouts using variables such as: IQ, grades, parent social class,

family size, marital status of parents, and tested aptitude in reading, arithmetic and language skills. The importance of early predispositions and grade school adaptations is underlined by findings on long term outcomes of early academic failure. Hawkins and Lishner (1986), for example, report that research on first grade academic achievement could not predict later problem behaviors, yet disciplinary problems were predictive. However, failure at grade 5 significantly predicted subsequent school problems, including dropout and delinquency among males.

Thus disciplinary problems in early elementary grades and academic problems in late elementary grades predict later problem behavior. Socialization and family factors are also found to have predictive importance suggesting that children enter school with various predispostions which interact with school processes to produce behavioral and achievement problems at later grade levels.

(c) Ethnographic evidence of depressed aspirations in the teenage years

McCloud (1987) provides compelling evidence of extremely depressed aspirations among many low income and minority teenagers. He describes such youth as already "feeling trapped" in a position of anticipated immobility and futility, and notes the pessimism and def atism of many of the 11 year old subjects in his study. McCloud poi. .dly asks how the levelled aspirations of his 11 year old subjects were produced - either within the school or home - from one generation to the next. The implication of McLouds work is that the forces which have levelled these aspirations are profoundly at work in earlier years on both the home, school and family contexts.

Theories underlying typological adaptations and dropout

The school adaptations described above are only descriptive, and there is no consensus on theoretical mechanisms which underlie and cause these adaptations. The further development of this typological approach requires that the typologies be linked to theoretical variables to reveal any causal mechanisms producing these divergences between types. This section describes several social and psychological theories that may have relevence to these patterns. These theories have exhibited strong explanatory power in several other studies of adolescent problem behavior (Jessor and Jessor 1977; Brennan, Huizinga and Elliott 1978).

The Role of the School: Strain theory

This theory addresses the question "How does the high school contribute to the dropout problem?". Many are concerned to identify school

processes which damage students or create failure. Many have asserted that school processes are responsible for demoralizing certain youth and for creating dropouts. In this vein Wehlege and Rutter (1984) argue that new research must examine the institutional character of the s;hool and how this impacts the potential dropout. They argue that certain institutional characteristics seem to account for the separation between stay-ins and dropouts and provide evidence that schooling seems to have a negative impact on self-esteem and on locus of control of some vulnerable youth.

The role of the school is often covert and hidden: McLoud (1987) argues that the role of the school in the etiology of these typological pathways has not been properly clarified. A cause of this lack of clarity, noted by many commentators, is the covert/hidden nature of the school mechanisms related to demoralization and failure (Fine 1986; MacLoud 1987). Most youth, parents, many teachers and administrators, and many researchers are unaware of the specific school processes that hinder the performance of some children, and may ultimately produce witndrawal, demoralization and dropout.

Basic process of Strain theory: Erosion of bonding to school

Strain theory makes the assumption that children entering school are basically conforming, and violate normal expectations only as a result of external social pressures or institutionally induced stress. The general strain theory hypothesis is that certain structures and processes of contemporary schooling damage the educational committments, values, aspirations, and involvement in school of a large segments of the school population. For example, when a student is denied legitimate access to rewarding goals, is not provided with meaningful or manageable tasks, or opportunities to succeed, the theory argues that the resulting frustration gradually weakens the childs committment to conventional educationai success goals.

Thus, student "disinvolvement" results from school-induced pressures and conditions rather than from pathological impulses of the child. The original formulation of the theory implies that certain social conditions and pressures within school erode the childs belief in conventional social norms and rules. This produces a state of alientaion, normlessness or anomie. This loss of bonding is associated with disinterest and boredom; frustration, rebellion and delinquency; rejection of educational aspirations, passive withdrawal, falling self esteem, dropout, runaway, etc (Elliott, Ageton and Huizinga 1985; Hawkins and Lishner 1986).

The fundamental research question becomes that of finding the "attenuation" (stress) factors which impose such strains on students. Various measures of school climate, classroom teaching styles, labelling

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and tracking, teacher expectations, and so on, have been developed to assess their impact on students. Much research (e.g. Hawkins et al 1986) has indicated that relative levels of achievement in schools correlate to four basic aspects of the learning environment as perceived by pupils: 1) personalized attention, 2) encouragment of participation, 3) independence allowed and 4) lack of friction. These can act as a set of "windows" by which to assess and evaluate the degree to which the student-school interaction is characterized by strain processes.

In the present study a careful assessment of the instructional and learning environment is made. This covers a many school processes and practices which have been hypothesized as "attenuation factors". These include:

Labelling in School: Hawkins and Lishner (1986) assert that schools attribute labels early on the basis of achievement and behavior and that such labels inexorably influence the subsequent treatment of youth almost irrespective of their actions. They argue that children or youth labeled as behavioral problems, slow learners, or as aggressive (even at early grade school levels) may be labeled and tracked in ways which evoke or produce inadequate teaching, inadequate curricula, low expectations on the part of their teachers, etc. Obviously, such labelling is initiated prior to the high school and much of the effect of negative labelling may have already occurred. Labelling and tracking processes will contribute to the identity, attitudes and behavior of the youth. When a child - even at the earliest levels of schooling - has been defined as a failure, outsider or deviant, he or she may adopt a deviant or failure role almost as a self-fulfilling prophecy in reaction to this attributed status. A hypothesis from labelling processes is that dropouts will have far higher levels of negative labelling than stayers, who, in turn, have less positive labelling than youth who thrive in school.

Restricted opportunity for success roles: The regulation of Aspirations

Teacher expectations in combination with formal labelling systems may function to create barriers to youthful aspirations and preclude various opportunities for participation in school.

Case study research suggests that social class or ethnic background may produce a responses of rejection and negative labelling, attributions of inferiority, and so forth (Fine 1986). These would serve to limit or erode the aspirations of the youth. McCloud (1987) and other structural theorists assert that this (usually covert) regulation of aspirations as perhaps one of the most important functions of schools. It is a major component of strain theory. Mercer (1974) provides evidence of

the power of differential expectations and labels which are imposed on students of different social and cultural origins. Students in special education classes may be particularly vulnerable to negative labelling, denial of success opportunities and downward regulation of aspirations.

Encouragement or rejection by Teachers and Peers
Strain can emerge when the student experiences insufficient support, or active discouragement from teachers (or from peers and parents). Teacher disinterest or rejection has been heavily implicated in studies of dropout (Fine 1986). One approach to clarifying the importance of relationships at school is to assess the various dimensions of support using frameworks such as Weiss's (1974) provisions of relationships. Watt et al (1987) utilized this approach in studying the relative importance of different kinds of support relative to stagnation and dropout. Elements of this instrumentation are included in the present study to examine relations with peers and teachers.

The influence of Discipline and control systems in High School
Control strategies aim to motivate, discipline and control students in the school. They include surveillance, reinforcers, pressure to achieve, negative evaluations, exhortations, directives "shoulds and musts", incentives, and so forth (Boggiano et al 1988).
Evidence has been mounting that discipline and controlling techniques may directly influence feelings c: self-competence, autonomy, enjoyment of school, etc. Passive obedience, fear and anxiety and over-comformity may be produced if discipline is too severe. This may produce fear of humiliation and shame, low self-initiative and low self-esteem. The implicit message is that the student is bad, inadequate or untrustworthy.
An appropriate level of discipline would allow students to retain initiative and self-starting behavior. Such differential responses to discipline and control may be involved in producing the earlier typological adaptations. Thus, the complex link between discipline, conformity and passivity, and the maintainance of self-esteem, initiative and independence must be clarified.
Teaching styles vary in levels of control versus intrinsically orientated strategies (Hawkins and Lishner 1986). Noncontrolling teaching styles allow autonomy in choice of tasks, self-direction, individualized learning styles and intrinsic rewards and they avoid or minimize negative evaluative feedback (Boggiano et al 1988). Some research findings support the effectiveness of this non-controlling approach. For example children's perception of their teachers support for autonomy has been found to correlate positively with self-esteem and perceived cognitive competence (Ryan and Grolnick 1986).

A movement towards extrinsic controlling strategies after 4th grade.

Several investigators have noted a shift towards extrinsic motivational control strategies in classroom teaching over the elementary school years (Harter 1981). Extrinsic rewards and punishments are strongly evident in the control system in high school. In high school classrooms students are consistently exposed to controlling and evaluative techniques emphasizing extrinsic motivational rewards and punishments.This practice seems to have a disproportionately damaging effect on certain children (Boggiano and Barrett 1985; Deci and Ryan 1985). The shift towards extrinsic motivation coupled with controlling tactics (e.g. negative evaluative feedback) has been demonstrated to lower feelings of autonomy and self-competence, and raise anxiety. Thus, youth who are vulnerable to this teaching style may gradually experience ever higher levels of strain, and the consequent feelings of alienation, anomie, frustration and so on.

The role of family and basic socialization: Control theory

Decades of quantitative social research shows that major influences on educational achievement and educational aspirations emerge within the family (Hawkins et al 1986). The educational and occupational aspirations of many youth often do not cross class or cultural lines. They simply adopt the occupational and educational aspirations and beliefs of their parents. peers and communities. Control theory is based on this body of findings and focusses on faults or failures of initial socialization by which youth develop educational attitudes, motivations and normative bonding to societies institutions. If this inital socialization to school and educational values is inadeqate, control theory arrests that severe problems at school are likely. For exampe, a poorly socialized child will enter school with profoundly different levels of "educability" or "teachability" than a well socialized child (McLoud 1987). Their level of "educability" may be less than other children who may have been socialized in a manner producing strong beliefs, values and orientations towards success in school. Thus, differences in socialization interact with the processes of school resulting in differential levels of success/failure and adaptations.

Schoo' problems, delinquency and dropout may be theoretically viewed as stemming from three general sources (Elliott, Huizinga and Ageton 1985):

I) From weakly developed internalized normative

values or goals (Control theory - poor socialization)
2) From frustration, and the consequent breakdown or erosion previously established goals and values (Strain Theory)
3) From Conflicts or inconsistencies in the rules or social controls of the institution (Control theory).

Strain theories focus only on the second of these processes. It implies that school procedures may be thwarting, undermining, or blocking the aspirations of certain youth. Control theory examines the first and third conditions i.e. inadequate socialization, and failure to internalize conventional norms, beliefs and values regarding school, and any contradictions in school rules and social controls.

A huge literature examines family influences on education and youth problems (e.g. Brennan, Huizinga and Elliott 1978). Across different social class and family backgrounds many micro-practices have been found to influence student motivation and achievement levels. For example, parents who read books to their children, who visit school more frequently, and who exert pressure on the youth to succeed and do homework, seem to have success in enhancing the educational achievement of their children.

In this research we examine several family characteristics. These include:

Family social class and ethnicity
Parental educational levels and occupations
Family stability and disorganization (Relocations, divorce etc)
Parental support for education of the child
and so on.

The complete list of family scales and variables can be seen in the attached questionnaire and in the document describing scale construction.

Social bonding to Education
Critrical Beliefs and Values regarding School

The importance of social bonding:
Our major focus in explaining dropout are theories of social bonding and reasons for their weakness, erosion, development and maintainance during the high school years. What are these social bonds which tie children to school, motivate their behaviors, and keep them committed to education?.

Wehlage (1983) suggests that "social bonds" are a prerequisite to committment and successful participation in school. The implication is

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that any erosion or ill-development of social bonds to school would leave the child in a high risk category for problem-behaviors. This is similar to the concept of "immunization" in Janis and Mann's (1977) model of decision making where certai" "value committments" will obviate a foolish choice or decisions. Social bonds form the critical focus of various theories of adolescent "separations" e.g. school dropout (Elliott and Voss 1974); adolescent runaway (Brennan 1980; Dunford and Brennan 1976); student dropout from college (Tinto, 1987) and of more general adolescent problem behaviors and social deviance (Jessor and Jessor 1977; Hirschi 1969).

Conceptualizing and measuring Social Bonds to School

A large literature exists on how best to conceptualize and measure bonding. Various theorists (Reis, 1951; Nye, 1958; Reckless 1967; Elliott et al 1985) categorize bonds as external (social) and internal (personal). Others, such as Hirschi (1969) go beyond the simple dichotomy of internal vs. external to develop a multi-dimensional concept of bonding. The following are the main elements that appear pertinent to the problem of dropout.

1. External (Integration) Bonding

Elliott et. al. (1985) used the term integration bonds to identify factors which "integrate" or involve youth with social institutions and foster feelings of belongingness. External bonding includes social and behavioral occupancy of positive roles at school. Such involvement implies being socially and behaviorally integrated into a conventional group or institution. It implies an occupancy of positive social roles, behavioral participation in conventional or worthwhile activities, and the presence of effective sactioning networks in the youth's school. This conceptualization is similar to Hirschi's (1969) concepts of involvement and commitment bonding.

a) Social integration: This may be indicated by extracurricular participation at school e.g. participation in school social functions, hobbies, clubs, sports, band etc. Popularity and social integration (vs. Isolation/loneliness at school) are important components. This may be indicated by feelings of social popularity, number of 'riends, and scales to assess loneliness at school. The research literature suggests that high involvement correlates with educational success. Hinojasa and Miller (1984) have demonstrated that among Hispanic migrant children greater extra-curricular participation was related to higher academic attainment

b) Academic Involvement and participation: This aspect of integration bonding 's indicated by time spent doing school work, number of classes taken, effort expended in homework etc. It is basically assessed by the time and energy invested in school work. Active, productive

participation in various educational experiences represent the concept of involvement. This is one of the foundations of Hawkins and Wies's Social Development Model for school success.

Involvement bonds and participation produce many positive payoffs e.g. oportunities to devote energy, creativity, fun, interest, absence of boredom, feelings of mastery, sense of educational progress, self development, sense of belongingness, and so forth.

2. Internal (Committment or Attachment) Bonds

Internal bonds include internalized values, attitudes, aspirations, and beliefs. These have sometimes been termed personal, attachment or committment bonds (Elliott et al 1985). Various sub-dimensions of internal bonding have been identified. The following sub-dimensions are relevent for understanding and predicting dropout behavior.

a) Aspirations regarding education: The students educational aspirations, goals, and plans (e.g. for school success, to finish high school, go to college, have a high paying job, etc) are components of committment bonds. Students with high aspirations are more likely to experience classroom teaching as relevant and useful to their future goals and aspirations. Their classroom behavior is more likely to be enthusiastic and motivated. Prior research indicates that students with no clear future plans drop out at higher rate. Some research findings indicate that aspirations begin to erode in the middle school years (McLoud 1987; Fine 1986) and that a loss of aspirations is a precursor to dropout. One interesting finding is that a majority of dropouts enter high school with aspirations and expections to graduate (Wehlage 1986).

b) Expectations for academic achievement: A sense of futility or loss of expectation is a critical component of social bonding models regarding school (Hirschi 1969; Hawkins et al 1986). As noted, most youth enter high school still expecting to graduate. Past research has suggested that expectations of educational success gradually gradually erode or are destroyed during the elementary and middle school years and that dropouts have lower expectations than those who eventually graduate from high school (Elliott and Voss 1974).

Fine (1986) and McLoud (1987) elegantly describe the destruction of educational expectations among many minority youth. Watt et al (1987) - in reference to minority youth - claim that by entry into high school some have lost all expectation of graduating and that their educational futures are already "written off".

c) Percieved relevence of education to life values/goals: The perceived relevence of education to the youth's aspirations and goals is a critical internal bond. If the student believes that education is required to

achieve his/her goals (e.g. having money, a good job, being respected, or pleasing parents or teachers) then schoolwork remains important. If education is related to aspirations the youth's attitude to school is more positive. Thus a belief in relevance operates as a powerful and motivating committment d (Elliott, Ageton and Huizinga 1985).

d) Enjoyment of school: Enjoying school is part of committment bonding. This concept of "satisfaction" has several components. An intrinsic interest in schoolwork is critical. If schoolwork is fun, interesting and allows a sense of competence together coupled with success experiences, then enjoyment and committment levels may remain high. However, disinterest, apathy and boredom are experienced by many youth. The emergence of apathy and boredom is documented in studies of classroom behavior in elementary school (Lambert and Urbanski 1980). Disinterest and boredom in junior high school has been found to predict high school dropout (Nakazone and Diaz 1982). Data indicate escalating unhappiness over schooling, particularly amongst the soon-to-be dropout, has been reported Welhage,1986). Student dissatisfaction with extrinsic rewards e.g. grades, ed_cational progress, and feelings of stagnation at school are often reported by dropout (Elliott and Voss 1974; Fine 1986; Watt et al 1986; McLoud 1987. These all indicate erosion of committment bonds.

Many students feel that schoolwork as too difficult, that standards are too high, and that school is designed to defeat them (Fine, 1986). Thus, difficulty levels and high standards can operate to destroy or limit the possibility of success, and may engender anxiety, frustration, withdrawal and apathy. For certain students this erodes trust in schools and undermines the belief that schooling is a vehicle for advancement and opportunity. This passive alienated adaptation to failure correlates to an erosion of belief in the "achievement ideology" and is widespread among minority youth (McLoud 1987).

(e) Attitudes to teachers: Attachment bonding also includes feelings and attitudes to several important persons in the school environment (Teachers, peers, counsellors, a mentor. etc). The student may desire approval, respect. encouragement from such persons; and may have strong feelings of respect or trust for them. Such attachments would mitigate against school behaviors which may jeapordize these relationships. Thus, positive attachment bonding to persons who are invested in the youth's education would serve to inoculate/protect the youth against dropping out.

However, if the youth is unconcerned about the opinion of such persons then violation of prosocial school behavior is more likely. Attachment bonds imply that the youth is motivated to maintain good standing and approval from such persons.

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If such persons are "anti-education" (e.g. delinquent peers) then such attachment would serve to promote dropout or disinvolvement. This situation seems to be an increasing occurrance for many minority youth who might be embedded in a sub-culture which is antagonistic to the values of education (McLoud 1987; Fine 1986; Elliott et al 1985).

(f) Belief in the fairness/equity of school rules: Several specific beliefs are seen as critical for positive bonding to school and education. Firstly, belief in the moral validity of school is fundamental. The student must believe that the rules of the school governing classroom and school behavior are equitable, fair and necessary. Only if this belief is present do the rules warrant being obeyed. If the rules are seen as unfair, unclear, and inequitable, there is profound conflict and erosion of bonding. Thus, the youth must accepts the validity of the school rules. If validity is denied or deprecated this source of committment bonding is neutralized.

A related belief regarding education is that equality of opportunity should exist in schools (McCloud 1987). Underpriveleged minority and poor youth are the most likely group to lose this belief. Specifically, they may perceive or experience a denial or opportunity or negative labelling, which produces a sense of unfairness or they may see other minority youth who have a high school diploma but who nevertheless remain unemployed and poor.

(g) Respect for authority: The youth's attitude to authority figures in school is an important internal bond. Disrespect for teachers or principals weakens belief in the moral validity of the school. Thus, a critical task for schools is to create a milieau in which teachers, principals, and school staff are perceived as worthy of respect, admiration, and where school rules are seen as morally valid. Loss of respect for the authority of teachers and for the moral validity of educational institutions should correlate to withdrawal from school.

(h) Belief in the value/efficacy of schooling: Achievement Ideologies

Another critical belief is that success (personal growth, vocational success) is fostered by education i.e. there is a link between school achievement and future success, and that education will payoff and help ensure a good future. McLoud (1987) terms this belief the "ideology of education". Middle class students who may have educated successful parents are exposed to role models and training which usually ensures they believe this connection. Their role models exemplify the connection between education and vocational and financial success. Youth from poor families may lack an environment which supports the connection between good education and success.

Thus for many minority and poor youth the connection between education, social equality, and job success is severed at some point in

their school career. Many commentators (Fine 1986) have argued that the current system produces cynicism among large segments of minority youth and a belief that the education system has no legitimacy. When youth lose this belief, much of the motivation regarding education is lost. There is no clear evidence from the literature on the timing of the loss of this particular belief. McCloud (1987) provides graphic case studies of poor minority youth who have completely lost faith in both the education-success connection, and a belief in equality of educational opportunity. Dropout should reach epidemic proportions among such youth (Fine 1986).

Feeling rejected by teachers and school: A related theme is the belief that the institution has rejected the youth. The child, in this scenario, starts feeling rejected and unwanted at school. Watt et al (1987) found that children from disadvantage families fail early and repeatedly in school until they become alienated, start acting out and then quit at the earliest legal opportunity. Their school career is characterized by failure, frustration, confrontation, feelings of rejection, and utimately disillusionment. This illustrates the unfolding of both strain and control theories where a specific kind of person feels blocked in their educational aspirations and adopts a retreatist or rebellious adapation to school.

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CHAPTER 2

METHODS AND PROCEDURES

Methods and Procedures

In this section we cover: samples and design, instrumentation, and test administration. Data analysis methods are described in the results chapters.

Sample and Design

The major features of this study design include:

1) A Cohort-sequential Longitudinal Design - 3 testing phases
2) Sampling from formally diagnosed special education students
3) A comparison group of non-handicapped children
4) Equal sampling from 5 School Districts

1. A cohort sequential longitudinal panel design

Problems of internal and external validity when longitudinal and age-related changes are assessed has been a source of debate among educational researchers and statisticians (Goldstein 1979; Baltes and Nesselroade 1972; Berger 1986). The confounding of developmental effects with time effects in longitudinal designs and the confounding of developmental effects with cohort effects in cross-sectional designs has often lead researchers to propose cohort sequential longitudinal, or mixed longitudinal designs. Application of mixed longitudinal designs to substantive problems involving the analysis of growth rates and achievement curves are given by Jessor and Jessor (1977), Elliott, Huizinga and Ageton (1985), Brennan, Elliott and Knowles (1981), Rao and Rao (1966), Woolson, Leeper and Clark (1978). This approach offers a partial solution to separating developmental, time and cohort effects, and thus offers a viable approach to the problems of confounding (Van't Hof, Roede and Kowalski,1977). The design is also useful due to it's economy when a large time range is needed to address the research issues.

In the present case, since the complete high school career was too long to complete data collection for a pure longitudinal design, a mixed longitudinal design reduced the amount of time needed. The design proceeds using two cohorts, 9th graders and 11th graders, with time-structured assessments across a three year process for the former and a two year process for the latter.

We utilized the mixed cohort longitudinal panel design outlined below. Two cohorts tested at three and two time periods were used, enabling an examination of changes across grades 9 through 12. Using the mixed longitudinal design the data collection component of the study was

compressed into a three year period. Data are collected in the first year from 9th grades cohort. These were tested once for each successive year until they are in the 11th grades i.e. <u>three repeated annual waves</u> of testing. The 11th grade cohort was tested in both the 11th and 12 grades i.e. <u>two repeated annual waves</u>. The design assumes the following form:

	<u>Grade levels in High School</u>			
	9	10	11	12
Year I - 1986/87	X			
Year 2 - 1987/88		X	X	
Year 3 - 1988/89			X	X

Thus, in the second and third years of testing two cohorts were tested. This was necessary to study the longitudinal patterns between grades 11 and 12 and to study those youth who drop out in grade 12.

<u>Factorial nature of the Design:</u> The factorial structure of the design thus remains identical to that outlined in the original proposal. Grade is a repeated measures factor and stratification of students into academic groupings and dropouts is the second main factor. However, because of delays in starting the field work for this project in the first year we had to modify the original design to ensure that dropouts from all grade transitions can be studied. This delay led to the use of the Cohort Sequential Longitudinal Design as described above. It remains very similar to the original design - except that it uses two student cohorts rather than one. This design still captures all grade transitions from 9 through 12 and can examine students who drop out at each successive grade level and make statistically reliable comparisons between them. In this design there are only three repeated annual waves of testing instead of four.

<u>Stratifications of the sample:</u> The sample for the longitudinal panel is structured using random sampling within particular strata/or groups. These particular strata were selected to allow comparisons between different kinds of drop-outs, and to oversample high risk strata (e.g. low achieving students) where drop out is more likely and a particularly serious problem. The first major stratification involved three groups based on academic levels: 1) Handicapped 2) Low achieving and 3) Normally achieving students. Within these we attempted to sample equal representation of the two sexes. Black and Hispanic students were oversampled to increase their representation. Students were equally sampled from 5 geographically widespread different School Districts, the

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numbers below refer to the total sample size and not to particular Districts. The stratifications are as follows:

Group I - Handicapped Youth (N = 120-150): Special Education students were sampled from each of the six districts. These were randomly sampled from youth legally diagnosed in each school as having any of the nine formal handicapping conditions. Thus, formal diagnosis was a first requirement. A second requirement was that the youth was actually retained in the school and was receiving instruction in the school. We did not sample youth who were receiving special educational services outside of the school, or students not attending public school.

Group 2 - Low Achieving youth (N = 150-180): These were randomly sampled from lists of students provided by the schools who satisfy our selected criteria for low achievement. There are many ways of defining wha: onstitutes low achievement. Our intention was to obtain a comparison sample who had not been formally classified as having handicapping conditions but who were extremely low achievers, and who were thus at high risk for dropout. We used achievement scores below a grade point average of 2.0 as the criterion for entry into this strata.

Group 3 - Normally achieving youth (N = 100-150): We included a sample of normal youth for comparison purposes. We do not expect many drop outs within this sample. This group is selected from students with GPA of 2.0 and above.

Initial random selection from 9th and 11th grade cohorts:
Lists of students meeting the handicapped diagnostic criteria and the total 9th and 11th grade GPA distributions (for mainstream students) were pro. 'e!3d to the researchers by the school officials. These lists were provided with only with identifying code numbers for each student. Code numbers were randomly selected from these lists - within each of the specific strata - to obtain the samples. The randomly selected code numbers were then returned to the school districts, in order for letters of permission to be mailed out to the parents and youth. The researchers had no access to names during this process.

Anonymity and protection of confidentiality: Using this code number process names and addresses were not provided to the researchers. Following the random selection within each strata, the school districts sent out the letters asking for cooperation and permission to interview. Thus, permission requests, explanations of the study, and return postcards were mailed to parents. At the end of this process the parents could contact the researchers using the return postcard to indicate willingness

to participate in the study. Only <u>one</u> follow-up reminder request was allowed by the school districts in cases of non-response, so that parents would not feel pressured by endless repeated requests.

<u>Parental permission and reponse rates:</u> Past experience using this type of procedure in similar samples of teenagers suggested that refusals and non-responses would be about 40-50% of an initial mailout. Thus, approximately <u>double</u> the above numbers were sampled from school records to try to ensure that the above N's were reached for each strata.

This procedure unfolded exactly as expected. It lasted over an 8 week period with a rapid initial response followed by a gradual tailing off of parental replies. For the different strata of youth parental permissions varied between 40-50% and were deemed acceptable. These rates were similar to other published studies which used similar procedures (e.g. Jessor and Jessor 1977).

However, a low rate of response was received from parents of low achieving Black students. This was accounted for largely by "no-response" rather than direct refusal. Very few direct refusals were received. A possible implication was that these parents were more transient than other families and the letters were not received, or these parents were disinterested or mistrustful; or perhaps for other unknown reasons. Our two schools with substantial segments of black students in Denver and Colorado Springs were both <u>extremely</u> helpful in providing follow-up letters and in attempting to obtain parental permission, where possible. However, despite these efforts the rate at which we obtained permission from Black parents, and therefore of interviewing these students was low. In analysing our data for any bias stemming from this low response rate we discovered that low response rate was particularly serious (less than 20%) for poorly achieving failing Black youth. This experience reflects that of other researchers who have had to obtain preliminary permissions from parents using these procedures i.e. this is a very difficult population from which to obtain interviews. However, a workable number of black parents gave their permission. The students generally agreed to be interviewed following parental permission and although somewhat under-represented at the low achieving end of the distribution this group was then successfully interviewed during the course of the longitudinal study.

<u>Attrition and the Maintenance of the Sample</u>

We used similar procedures to that of the National Longitudinal Youth Panel (Elliott et al 1986; Brennan, Elliott and Knowles 1981) in attempting to minimize attrition of sample members across the three years of the study. Names of family members, two best friends, and another relative were acquired at the beginning of the study. Re-contact

procedures by mail and phone were used prior to each wave of testing.

All dropouts and transfers were identified at each wave, and were distinguished from each other using information provided by school records secretaries. Details of exit interviews were obtained to clarify whether the youth had dropped out. Additional follow up data was collected including requests for transfer of academic transcripts to other schools, and so forth. This detective work clarified cases who had simply stopped attending the school and for whom no further information was available, from dropouts and transferees. There were two deaths during the course of the study.

Test Administration details - Methods of contacting children and parents

Using strategies outlined in Jessor and Jessor (1977) and in the National Panel Study (Elliott, Ageton and Huizinga 1985) parents and child were initially contacted by letter. The letter explained the purposes of the study, and asked for parental signed permission to interview the child, for the child's permission, and for an interview with the child. A token of $5 was offered to the student for participating.

Pilot testing the scales and instrument: In the first months of this project we pilot tested the instruments. Our intention in this pilot test was focussed on the following issues:

Difficulty level of items
Length of time taken to complete various instruments
Clarity of instruction, and ease of understanding
Attention span and length of interviewing
Correct understanding by children of response formats
Possibility of Self-administered testing

This pilot test provided a basis for finalizing decisions regarding instrument content and length. However, since most of the instruments had been used successfully with school age samples they adapted very well to this study with little modification. The major issue was to reduce the number of scales and questionnaire items into a time frame of approximately 40-45 minutes duration. In the great majority of cases students completed the final questionnaire within this time period.

Location of testing: One-on-one interviews with each student using trained interviewers was the basic mode of testing at each wave of the study. Interviews took place in the school or home. When testing occurred at the school this was usually immediately after classes. Permission was obtained from the schools if testing after classes was used.

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We experimented with two basic testing formats a) one-on-one interviewing, and b) small group interviewing. In the latter mode if students had any problem understanding the questionnaire they were instructed to immediately ask for help from the interviewer. Given the students age and the presence of a large handicapped strata the possibility of self-administered tests was examined in the pilot study of the instruments. A large majority of students had little problem understanding and responding to the questions in a self-administered format. For those youth who had language difficultier or difficu'ties comprehending the questionnaire the interviewers utilized one-on-one interviews. Records were kept of those students who were tested in each mode. No systematic differences were observed between the two modes of interviewing.

Duration of testing. Timing and Form of interviews: Our intention, with samples of 9th through 12th grade was to be sensitive to fatigue, attention span and time requirements. The pilot test assessed duration of testing. In general the questionnaire were completed within 40-45 minutes by a majority of students, however, a small number of students took as long as one hour.

The interviewers explained the manner in which the questions were to be filled out and were present for the duration of the interview to answer any questions or difficulties that arose.

The timing of interviews in each year was partially determined by the starting date of this project, partly by the duration of the pilot testing, and in the first wave was strongly influenced by the length of time it took to obtain permission to start the project from local school district officials, and obtain parental permission. We initially aimed to conduct the first year testing sessions in the second half of Fall semester and retest students at the same time in each of the two successive years. However, delays in obtaining permissions forced testing to be extended over the second half of the Fall semester, and in some instances into the beginning of the Spring semester. This extent of testing varied across approximately a 10 week period due to the various logistics of obtaining interviews with specific youth, the availability of interviewers, and so on.

Instrumentation

The selection of tests was guided by the need for comprehension and difficulty level appropriate to 9th grade handicapped students and 9th grade low achieving students. An effort was made to select instruments already demonstrating validity, ease of administration, and good reliability with students in this age range.

Dependent variables: Continuous and typological variables

Several different dependent variables were designated. Of particular importance is that we go beyond the usual and overly simplistic dichotomy of dropout/stayer. This has dominated research on dropout and represents a gross oversimplification of the continuous erosion processes that actually seem to be occurring in the high school context. Thus, our approach is to develop more sensitive dependent variables. These ~~ as follows:

1) Firstly, the simplest dependent variable was whether or not the youth dropped out. This follows the usual approach in the prior literature.

2) Secondly, we developed a continuous scale of "withdrawal" or avoidance of school. This scaled variable brings together frequency scores on seve al different avoidance behaviors. These include the scores for lateness, skipping classes, truancy, and finally dropout. This is used as a criterion variable in the predictive regression analy 's.

3) The third and most important dependent variable in this study consist of a multivariate typology of "profiles" based on bonding variables. The social bonding variables (described earlier) are the most immediate and natural antecedents of dropout. We expect different patterns or profiles of these to emerge across the high school years as students differentially adjust to, and are influenced by the processes of the high school and by their experiences in the classroom. These multivariate vectors or "profiles" of dependent variables are influenced by the strain processes of failure and rejection in school and by the length of time the child is exposed to these processes. Thus, we adopt multivariate analytical methods designed to deal with a vectors of dependent variables (e.g. MANOVA and Multiple Discriminant Analysis).

Internal/committment bonding measures: The internal bonding committment scales used in our instruments include the following:
- Enjoyment of school
- Like teachers
- Boredom at school
- Belief in the fairness of the school discipline system
- Belief in the clarity of school rules
- Belief in Ideology of education
- Belief in the Efficacy of your school
- Educational expectations and aspirations,
- Vocational expectations and aspirations,
- Relevence of school studies

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- Attachment and respect for teachers

Each of these scales was assessed by short 5 to 8 item scales and were adapted from several different sources e.g. Gottfredson (1985), Hawkins and Lishne ' (1986), Elliott et al 1985, Brennan et al (1978).
The scales reached satisfactory levels of reliability and validity, with Cronbach's Alpha's in the .60 to .80 ranges. For example, we modified some of the original scales, and added new items to strengthen the reliabilities (alpha levels are indicated in parenthesis):
Boredom at school (O.65),
Belief in Ideology of Education (0.67),
Belief in the effectiveness of your school (0.76)
Enjoyment of school (0.58)

Integration Bonds to School- Social roles at school
Our test instrument also included scales dealing with integration bonding to school, school avoidance and withdrawal behavior. The two basic dimensions of integration bonding assessed are: social integration to school, and academic integration to school. Again many candidate scales were available. E.g.,. Gottfredson (1984), Elliott et al (1986), and others. In the present study we tested several of these candidate scales, and developed additional integration bonding scales The scales below were included in our instrument. Alpha reliabilities for wave 1 are in parenthesis behind each scale.
School social integration (0.65)
School emotional loneliness (0.73)
Effort expended on schoolwork (0.68)
Rejection by teachers (0.77)
School avoidance (tardiness, truancy etc)   (0.77)
Rating for number of friends at school

Independent variables
We included variables expected to correlate strongly to the erosion or attenuation of school bonding. These fall naturally into several categories as follows:

School Experiences and School Climate perceptions:
A modified version of Gottfredson's (1984) scales covering school climate and experiences was used. Full details of scale names and psychometric properties are listed below. The kinds of variables falling into this section include:

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School social integration (0.65)
School emotional loneliness (0.73)
Effort expended on schoolwork (0.68)
Rejection by teachers (0.77)
School avoidance (tardiness, truancy etc)   (0.77)
Rating for number of friends at school
Labelling processes in school

We modified the labelling scales used in the National Longitudinal Youth Panel study (Elliott et al 1985). We achieved the following alpha reliabilities:

Labelling as a troublemaker (0.78)
Labelling as clever/academic vs. dull/failure (0.82)
Labelling as popular vs. unpopular (0.73)

Family/Parental Characteristics and Socialization Influences regarding school:

We include several family scales in the questionnaire. These specifically focus on the following:

Parent achievement demands (0.65),
Parent satisfaction with school behaviors (0.59),
Parental supports for education (0.53)
Parent involvement in child's education
Parental tolerance of school deviance
Parental achievement demands
Parental belief in the ideology of education
Parental labelling of the child as academic
Parental labelling of the child as socially popular

Parent and family characteristics also included items dealing with basic demographic, social class information, and family disorganization (relocations, divorce and separation, etc.). Additional scales assessed selected dimensions of socialization for education and school values. Many of these were initially developed by Elliott et al (1985), Brennan et al (1978), and Gottfredson (1984). We adapted most of these scales to the study of low achieving and handicapped youth in our present study.

Personal Traits:

In the personal domain we will select several variables which past research has indicated are vulnerable to deterioration across the span of the school career. These include:

Self-esteem
Self-blame attribution (Internal locus of control)

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Academic achievement.
Identity development
Value for Independence
Risk taking
Drug use

We acknowledge that these variables are often included as
"mediating" variables in some studies where they interact with the school
process variables to produce differential erosion of bonds (Elliott, Ageton
and Huizinga 1985). Given the compelling evidence of <u>deterioration and
change</u> in these variables (i.e. falling self-competence, increasing levels
of self-blame, and diverging levels of achievement) we will use these
variables in different kinds of analysis either as mediating variables or as
fully fledged dependent variables.

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RELIABILITY COEFFICIENTS (ALPHA) AND NAMES FOR DROPOUT STUDY SCALES

TABLE 1 - FAMILY AND PARENT SCALES

Name of Scale	# Items	Alpha-1	Alpha-2	Alpha-3
B1 - FAMILY/SCHOOL TRANSCIENCE	3	.52	.47 [.55]	.38
B2 - PARENT SATISFACTION W/ SCH. BEHAV	4	.59	.74	.75
B3 - PARENT SATISFACTION	2	.61	.70	.62
B4 - PARENT SUPPORT FOR EDUCATION	4	.53	.45 [.53]	.53
B5 - PARENT INVOLVEMENT WITH SCHOOL	4	.57	.51 [.53]	.54
B6 - PARENT ACHIEVEMENT DEMANDS	3	.65	.70	.70
B7 - PARENT PRESS. FOR SCHOOL CONTINUATION	5	.50	.42	.50
B8 - PARENT TOLERANCE OF SCHOOL DEVIANCE	6	.63	.66	.66
B9 - PARENTAL INTOLERANCE FOR DEVIANCE	4	.38	27	.48
B10 - INDEPENDENCE FROM PARENTS	3	.50	.53	.53
B11 - ATTACHMENT TO PARENTS	5	.72	.71	.70
B12 - INVOLVEMENT WITH PARENTS	2	.56	.51	.50
B13 - PARENTAL SUPERVISION	6	.62	.44	.45
B14 - CONFLICT WITH PARENTS	4,6	.49	.57	.64

[ ] Numbers = Standardized Reliabilities based on Z-scores
** Modifications were made between 1st and 2nd Year.

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TABLE 2 - NEGATIVE LABELING SCALES

Name of Scale	# Items	Alpha-1	Alpha-2	Alpha-3
B15 - LAbelling as troublemaker	4	.78	.80	.83
B16 - Labelling as academic	9	.82	.82	.82
B17 - Labelling as popular	2	.72	.78	.77
B18 - Labelling as independent	2	.64	.60	.64
B19 - Labelling by mother	3	.53	.41	.48
B20 - Labelling by father	3	.55	.54	.44
B21 - Labelling by teacher	7	.60	.60	.57
B22 - Labelling by friends	4	.33	.37	.43

TABLE 3 - SCHOOL SCALES/ATTITUDES AND BEHAVIORS

	Name of Scale	# Items	Alpha-1	Alpha-2	Alpha-3
B23	ENJOYMENT OF SCHOOL	7	.54	.48 [.53]	.53
B24	EDUC. ASPIRATIONS**	2,6	.33	.77	.78
B25	EDUC. EXPECTATIONS	C	.37	.33 [.44]	.34
B26	BELIEF IN THEVALUE OF SCHOOLING** (IDEOLOGY OF EDUCATION)	7,10	.67	.67 [.69]	.77
B27	BELIEF IN EFFECTIVENESS OF THIS SCHOOL.	6	.77	.75	.78
B28	BELIEF IN FAIRNESS OF SCHOOL RULES	3	.58	.51	.56
B29	SCHOOL EFFORT	6	.68	.67	.67
B30	ATTITUDE TO DROPOUT**	3,6	.39 [.54]	.50	.60
B31	BOREDOM AT SCHOOL	3	.65	66	.65
B32	SCHOOL PUNISHMENT**	5,6	.64	.56 [.5	.71
B33	SCHOOL REWARDS**	2	.39	.67	.38
B34	ACADEMIC ATTAINMENT	2	.75	.69	.68
B35	CLASS WITHDRAWAL VS. PARTICIPATION	4	.70	.67	.68
B36	AGGRESSION TOWARD TEACHERS	3	.70	.68	.73
B37	CLASSROOM DISRUPTION	5	.73	.71	.78
B38	DISTRACTION IN CLASS**	4,7	.51	.73	.73
B39	DISORGANIZED STUDY**	3,8	.55	.63	.67
B40	NORMLESS SCHOOL BEHAVIOR	2	.77	.65	.77
B41	SCHOOL AVOIDANCE	5	.77	.74	.75

TABLE 4 - PERCEPTION OF SCHOOL CLIMATE

	Name of Scale	# Items	Alpha-1	Alpha-2	Alpha-3
B42	VICTIMIZATION	6	.55	.55 [.61]	.60
B43	SAFETY IN SCHOOL	3	.59	.71	.70
B44	GANGS IN SCHOOL	4	.56	.45 [.44]	.56
B45	STUDENT-TEACHER VIOLENCE	3	.62	.57 [.60]	.58
B46	RACIAL TENSION	6	.63	.60	
B47	STUDENT INFLUENCE	7	.62	.70	.65
B48	CLARITY OF SCHOOL RULES	6	.54	.58 [.60]	.59
B49	INDIVIDUALIZED INSTRUCTION	10	.72	.67	
B50	DIFFERENTIAL TREATMEN**	3	.12	.61	
B51	RESPECT FOR TEACHERS	4	.58	.48 [.53]	.45
B52	SUPPORT FROM TEACHERS	8	.77	.77	.78
B53	DISRESPECT FROM TEACHERS	3	.57	.54	.50
B54	ENCOURAGEMENT FROM TEACHERS**	3,5	.38	.59	.55
B55 -	SUPPORT FROM COUNSELORS**	2	.63	.73	.80

TABLE 5 - SOCIAL RELATIONSHIPS RELEVANT TO DROPOUT

Name of Scale	# Items	Alpha-1	Alpha-2	Alpha-3
B56 - FAMILY ROLE MODELS	7	.36	.45	.51
B57 - DROPOUT BEHAVIOR AMONG FRIENDS	2	.49	.46	.33 (.40)
B58 - ATTACHMENT TO PEERS	4	.50	.51	.52
B59 - DELINQUENT PEER GROUP	5,5	.47[.51]	.38	[.50]
B60 - POSITIVE PEER ROLE MODELS FOR EDUCATION.	6	.66	.60	.67
B61 - SOCIAL ISOLATION - GENERAL	5,9	.41	[.66]	.64
B62 - SOCIAL ISOLATION AT SCHOOL**	5	.51	.53	.55 [.56]
B63 - EMOTIONAL ISOLATION	9	.73	.76	.75

TABLE 6 - PERSONALITY, ATTITUDES AND VALUES

Name of Scale	# Items	Alpha-1	Alpha-2	Alpha-3
B64 NORMLESSNESS	8	.55	.61 [.63]	.58
B65 SELF-ESTEEM	7	.72	.74	.72
B66 LEARNER SELF-ESTEEM	2	.61	.65	.63
B67 - INTERPERSONAL COMPETENCE	9	.60	.62	.62
B68 - IDENTITY CONFUSION	4	.54	.56	.57
B69 - VALUE FOR INDEPENDENCE	9	.82	.86	.83
B70 - IMPULSIVENESS**	2,4	.35	.53	[.54]
B71 - LOCUS OF CONTROL POWERLESSNESS	9	.61	.59 [.64]	.67

TABLE 7 - JOHNS HOPKINS SCALES

Name of Scale	# Items	Alpha-1	Alpha-2	Alpha-3
G1 - PARENTAL EDUCATION	2	.74	.73	
G2 - PARENTAL EMPHASIS ON EDUC. CONTINUE	4	.36	.47	.42
G3 - PARENTAL ATTACHMENT	6	.72	.68	.70
G4 - POSITIVE PEER ASSOCIATIONS	9,2	.59	.52 [.63]	.51
G5 - PARENTAL SUPERVISION	2	.38	.44	.39
G6 - ALIENATION	6	.70	.67	.67
G7 - ATTACHMENT TO SCHOOL	10	.79	.69	.72
G8 - BELIEF IN RULES	6	.54	.61	.57
G9 - INTERPERSONAL COMPETENCE	5	.42	.44	.49
G10 - INVOLVEMENT IN SCHOOL	14	.30	.58	.59
G11 - POSITIVE SELF-CONCEPT	10	.50	.58	.55
G12 - PRACTICAL KNOWLEDGE	7	.72	.71.	.71
G13 - REBELLIOUS AUTONOMY	3	.54	.57	.54
G14 - SCHOOL EFFORT	5	.65	.63	.62
G15 - SCHOOL NON-ATTENDANCE	2	.63	.56	.59
G16 - SELF-REPORTED SUBSTANCE USE	6	.73	.71	.71
G17 - SCHOOL PUNISHMENT	4	.51	.48	.69
G18 - SCHOOL REWARDS	4	.42	.57	.58
G19 - VICTIMIZATION AT SCHOOL	6	.54	.55	.60
G20 - INVALIDITY	5	.15	.15	
G21 - COMMUNITY CRIME	2	.33	.32	.16
G22 - GANGS IN SCHOOL	2	.53	.35	.53
G23 - SAFETY IN SCHOOL	6	.63	.67	.66
G24 - INDIVIDUALIZED INSTRUCTION	2	.37	.22	

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TABLE 7 - JOHNS HOPKINS SCALES - CONTINUED

Name of Scale	# Items	Alpha-1	Alpha-2	Alpha-3
G25 - DISRESPECT FOR STUDENTS	3	.57	.54	.50
G26 - STUDENT/TEACHER INTERACTION	2	.49	.56	.51
G27 - PLANNING AND ACTION	2	.52	.54	.53
G28 - FAIRNESS OF RULES	3	.58	.51	.56
G29 - CLARITY OF RULES	2	.30	.33	.27
G30 - STUDENT INFLUENCE	4	.41	.57	.53
G31 - GROUPING	2	- .22	-.14	

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CHAPTER 3

BASIC PATTERNS OF BONDING AND DROPOUT AT THE END OF HIGH SCHOOL: A MULTIDIMENSIONAL TYPOLOGY

Developing a multidimensional typology
of adjustment and bonding to school

A typology to define basic patterns of bonding and social adjustment to school is reported in this chapter using data from the final wave of the longitudinal study. This typology will then be used as a multidimensional outcome variable to indicate final modes of successful/unsuccessful adjustment to high school i.e., at the end of the high school career.

The typology focusses on the multidimensional adjustment to school of all youth remaining in school at the final wave of the study (ie., the 11th and 12th graders). This typology will clarify the modes of adjustment and integration bonding of students to their high schools. It is used in later predictive analyses to clarify the differences between dropouts and the other styles of adjustment to high school. Finally, it is also used as a criterion variable in predictive studies to examine the impact of earlier data from family, peer and personal domains on the final adjustment of youth to high school. A multidimensional criterion has a great advantage since it has a higher information content and is more realistic than simple unidimensional categorical or single variable outcome approaches (e.g.,. dropout vs. stayer, or high vs. low GPA, and so on).

Methods to create and validate this typology
In this section the methods and procedures used to create and validate this typology of adjustment to school are described.

Domain for the School Integration Typology
The variables used in creating this typology cover all of the main social bonding variables - i.e.,. both committment and integration bonding.

Commitment bonding This is represented by:

- enjoyment of school,
- educational aspirations,
- educational expectations,
- boredom at school,
- normlessness at school,
- respect of teachers.
- attitudes to dropping out

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<u>Beliefs:</u> The concept of belief bonding is assessed by
- belief in the value of schooling,
- belief in the effectiveness of school,
- belief in fairness of school rules,

<u>Integration/Involvement bonding:</u> This is represented by the ways in which the youth is integrated into the school:
- school effort,
- withdrawal v. high participation in class,
- school avoidance (truancy, lateness, etc.)
- social isolation v. social integration at school,

These scaled variable cover the essence of Hirschi's model of committment, involvement and belief variables.

<u>Additional adjustment to school Variables</u> : Additional variables which represent other aspects of the various rewards and costs of school include:
- school punishment
- school rewards
- academic grade
- aggression towards teachers
- classroom disruption
- distraction in the classroom
- disorganized study habits

<u>Samples used to create initial hierarchical typologies</u>
The 460 youth in the 11th and 12th grades who had complete questionnaires for all three waves, were randomly sampled to create <u>four</u> roughly equal subsamples - each with around 110 to 120 cases. These four subsamples were then <u>separately</u> cluster analysed to assess the likely number of clusters and to identify multivariate outliers.

<u>Cluster analytic procedures</u>
Two separate hierarchical clustering methods were initially used i.e.,. Ward's minimum-variance approach and the Group Average clustering methods to cluster analyze the four subsamples. Thus 8 separate agglomerative clustering runs were conducted. The 8 resulting dendrograms were examined for appropriate K levels and outliers.
Two basic typological research questions were addressed by these 8 analyses.

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Selecting a K level: Firstly, it is critical to gain a sense of the most likely number of clusters. The minimum-variance Ward method provides a graph of the error sum of squares for successive clustering levels. This was used as a rough guide in reaching tentative conclusions regarding the number of clusters. The 8 analyses suggested a fairly strong 3 level classification with various possible stable breaks of these 3 clusters into 4, 5, 6 or 7 subtypes. Thus, a major K level occurred at 3 with various sub-types underneath this basic level. The strongest break in the various error graphs from the Ward method was generally at 3.

Identifying multivariate outliers: Secondly, we aimed to identify and eliminate multivariate outliers from subsequent cluster analyses. Two conditions had to be present for a case to be regarded as an outlier. Firstly, the 8 dendograms were examined for cases which were "held out" of the fusion process i.e.,. which entered branch lines only at late stages - low similarity levels - of the agglomeration process. This was relatively easy using the graphical dendrogram output of the hierarchical clustering. Secondly, for a case to be regarded as an outlier it also had to be held out of the agglomeration process by both clustering methods. Lists were developed from each pair of analyses (Ward and Group Average), and then compared to identify cases held out of both analyses.

These outliers were later statistically tested for appropriateness of group membership in conducting the discriminant analyses (using Mahalanobis D, and the probability of belonging to a cluster). This Mahalanobis analysis indicated that the most of these cases indeed were not well classified into the existing clusters.

K means clustering - refining the original cluster solutions

Following the initial hierarchical clustering the data the original clustering solutions were subjected to several K-means clustering. This approach has often been suggested as a useful follow up to hierarchical agglomerative methods to refine and improve upon the latter. It does, however, require some knowledge of a starting solution, and an idea of the number (K) of types involved in the typology. Thus, the K-means approach was used to refine the solutions emerging from the Ward and Group Average methods.

Using results from the hierarchical agglomerative analyses we selected several tentative K levels (K = 3, 4, 5, and 6) for use in the K means procedures. We also used a random selection of seed points, in addition to the seed points emanating from the hierarchical methods. Specifically, the following were used to create pairs of solutions using the K-means methods at each tentative K level:

1) Ward solution seed points
2) Randomally selected seed points

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These two approaches were used in separate analyses at all levels between K = 3 and 6. This provided 8 separate solutions. These solutions were then interpreted for substantive meanings. The outliers identified by Wards method were eliminated from these K-means analyses.

Validation procedures

Internal validation: This involves comparing solutions produced by different cluster analysis methods to demonstrate whether the solutions are replicated across methods and to ensure that the solutions achieved are not simply artifacts of the statistical methods.

Several statistical indices (Goodman and Kruskal Lambda, and Cramer's coefficient) are used to assess the degree of similarity between these various partitions. Significance tests assess the likelihood of overlap.

External validation: This involves comparing the new typology against variables that were not used in creating the typology. Thus, the cross classification of the typologies against other domains (e.g.,. family variables) and the use of significance testing to assess these relationships is perfectly valid in this situation. This exercise assesses whether the typology generalizes to different variables from other domains of relevance e.g., family, peer, and personal variables. One-way ANOVA's and Multiple Discriminant Function analysis were used in this exercise.

Longitudinal testing of the typologies to assess predictive accuraccy over time: In this instance we utilize variables from the earlier waves and grade levels to predict eventual school adjustment and dropout behavior of the youth. Again, one-way ANOVA's and Multiple Discriminant Functions are used.

A Typology describing student
Adjustment, Bonding and Dropout

The three main types emerging from the cluster analytic work, together with the dropouts provide a four-class typology of major adaptations and levels of bonding to school at the final wave of this study. These four profile-types are now described. Mean scores for the 4 types were converted into Z-scores for purposes of interpretation. Validation information is presented following the basic descriptions of the types.

Dropouts (N=47)

The profile on school adjustment and committment bonding is exactly as expected for dropouts. Bonding variables are extremely weak and attenuated - implying that there is little to motivate these students and keep them in school.

Handicapped and special education students fall into this profile at the same rate as the overall sample. Specifically, overall 10% of the students are dropouts, while in the handicapped sub-sample 9.5% are dropouts. The standardized residual of -0.1 indicates that there is no disproportionate representation of handicapped students among the youth who eventually drop out. Thus, the data implies that this bonding profile applied equally well to handicapped students as the youth in general.

Committment bonding to school: On all the commitment variables the dropouts score substantially lower than other students. For instance they have low scores for enjoyment of school, low aspirations and low expectations for school success. A contrast to stagnating youth who stay in school is that the dropouts have a more accepting attitude to dropout. They also have higher than average score for aggression and disrespect towards teachers. This profile indicates very weak commitment bonding to school in comparison to other youth.

Integration bonding: Dropouts also are weak in terms of integration or involvement bonding. For instance, they are far lower than average on the amount of effort put into schoolwork. They tend to withdraw rather than participate in classroom interaction, they have a higher than average score for school avoidance (truancy, lateness, etc.). These "retreatist" tendencies are complemented by a high scores for social isolation and loneliness at school.

Beliefs: The dropout group falls below average in belief in the fairness of the school discipline system; below average in the belief in the value of education as a means to a good job in the future, and somewhat below average in belief in the effectiveness of their school.

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Stagnating "at-risk" students - Group 2 [N=99]

The school bonding profile for this group is equally as devastating as that of dropouts. They are at the lowest extreme in comparison to all three other groups (including the dropout group) for several of the bonding variables.

An extremely significant finding emerges here for the handicapped and special education students. Specifically, they disproportionately and significantly fall into this profile. Among non-handicapped students 17.4% fall into this "stagnating/at risk" cluster. However, for handicapped/special education students 36% fall into this stagnating cluster. The standardized residual of 3.2 is far and away the strongest in the contingency table, indicating that this is the strongest trend in the table, and is responsible for the high significance of this table - Pearson's r is significant at $p = .0004$, with a Chi-square of 18.08.

Thus, a firm conclusion of this analysis is that handicapped/special education students disproportionately more than other youth exhibit the profile described below as "stagnating/at risk". In fact over 1/3 of handicapped/special education students in this sample fall into this profile. As noted elsewhere this profile has a very high overlap with that of dropouts - and in most instances the two clusters are not significantly different.

Committment bonding: Stagnating students have the lowest scores for: enjoyment of school, educational aspirations and expectations. They have aggressive attitudes and disrespect towards teachers.

Beliefs about school They have very low scores for belief in the usefulness of education as a help for a future career (ideology of education), low beliefs in the effectiveness of their school and in the fairness of the discipline system. They are highly bored, and have a more accepting or tolerant attitude to dropout than most of the other students.

Integration bonding and school behaviors: These students make little effort at school work and have high tendency to withdraw from classroom participation. They are often distracted and disorganized in class, and have high scores for avoiding school (truancy, lateness. etc.). Their disengagement is illustrated by extreme feelings of social isolation at school. They have a high scores for school punishment, low scores for school rewards and the lowest grade levels.

Contrasting stagnators and dropouts: The profiles of stagnators and dropouts are highly similar and overlapping. Dropouts appear to be a subset of this larger stagnating group, and probably emerge from it's ranks.

In some instances the stagnator profile is more negative than the dropouts. A likely explanation is that the data used for dropouts was the most recently available data before dropping out (i.e.,. the last opportunity to test them), while profiles of the other clusters use wave 3 data (i.e.,. when the students were in 11th and 12 grades). Thus, the "stagnating stayers" have had a further time period in which their attitudes to school may have deteriorated.

It is stressed that the profiles of dropouts and stagnators are highly similar and represent extremely negative bonding to school. In the great majority of post-hoc ANOVA tests the dropouts and stagnators were not significantly different. The overwhelming conclusion is that these two profiles are more similar than they are different.

Thriving youth - Group 3 [N=138]

This group constitutes almost a third of the overall sample. It has a profile indicating that school is a positive experience. Compared to the other groups they show significantly high scores for virtually all bonding and behavioral variables.

When examining the profiles of handicapped/special education students by means of a cross-classification against the typology we find another highly disproportionate distribution. Specifically, handicapped and special education students are not found in this cluster at a significantly lower percentage. Specifically, among non-handicapped students 32.2% of the youth fall into the thriving cluster, whereas among handicapped students 18.6% fall into this cluster. This is the second strongest trend in the contingency table, with a standardized residual score of 2.0. Thus, this trend contributes strongly to the overall significance of the table (p = .0004). We can conclude that handicapped students are significantly less likely than other students to be characterized by this profile. Just under one handicapped student in five falls into this cluster.

Committment bonding In terms of commitment these students have the highest scores for: enjoyment of school, educational aspirations and educational expectations. They have the lowest tolerance of dropout, low boredom, and high scores for respecting teachers

Beliefs They have the highest belief that school will help their future careers, in the effectiveness of their school. This group has the highest score for believing in the fairness of school.

Involvement bonding and school behaviors They exert the highest level of effort in terms of homework and hours spent studying. They participate actively in classroom interaction, have low levels of aggressiveness to teacher and low classroom disruption. They are not distracted or bored by school work and are not disorganized in study habits. Their interaction with the educational system thus appears to be essentially productive. They report higher rewards and lower level of

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TABLE: TYPE MEAN Z-SCORES: WAVE 1 SCHOOL VARIABLES

VARIABLE	Intermediate	Stagnator	Thriver	Dropout
Enjoy school	0.081	-0.415	0.639	-0.189
Aspirations	0.240	-0.429	0.449	-0.254
Expectations	0.319	-0.640	0.553	-0.274
Belief-Educ.Ideolgy	0.143	-0.364	0.466	-0.097
Belief-School Effect	0.076	-0.428	0.688	-0.036
Belief-Fairness	0.071	-0.259	0.422	-0.146
School Effort	0.100	-0.571	0.680	-0.291
Attit.to Dropout	-0.195	0.167	-0.486	0.160
Bored at school	-0.130	0.410	-0.644	0.216
Sch. Punishment	-0.214	0.349	-0.394	0.174
School Rewards	0.091	-0.225	0.497	-0.171
Grades	0.196	-0.571	0.541	-0.455
Withdrawal	0.025	0.488	-0.643	0.286
Aggression to Teach	-0.085	0.373	-0.506	0.076
Classroom Disrupt.	-0.037	0.153	-0.486	0.120
Classroom Distract	0.118	0.556	-0.658	0.118
Disorganised Study	-0.017	0.440	-0.700	0.270
Normless Sch. Beh.	-0.004	0.418	-0.447	0.099
School Avoidance	-0.191	0.445	-0.611	0.414
Respect Teachers	0.114	-0.302	0.531	-0.236
Social Isolation	-0.076	0.147	-0.417	0.169

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punishment than other youth. They have the lowest level of normless (or deviant) school behavior, low avoidance (truancy, lateness, etc.), and are well integrated into peer relationships at school. Loneliness is low.

Intermediate students Group 3 (N=186)

This group - also almost one third of the sample - is intermediate between the two negative groups and the well-adjusted group.

A large number of handicapped students fall into this profile. Overall 36% of the handicapped students are in this cluster. This is a similar rate as for non-handicapped students (40.%). The standardized residual of -.6 indicates that handicapped/special education students have a slightly lower than average tendency to fall into the intermediate cluster. At the same time it is worth noting that about one handicapped student in three is characterized by this profile.

This profile has no serious negative scores with most scores hovering around sample average. Some positive scores may be noted. For instance, these youth exhibit moderate to relatively high aspirations and retain positive expectations for their educational futures.

Validating the typology against
school adjustment and bonding in earlier years

Both univariate and multivariate analyses were conducted to examine how well these types could be differentiated on other variables that had not been used in the construction of the typology. A discriminant function analysis was conducted to clarify differences between the four groups using Wave 1 educational data (i.e.,. data collected when students were in 9th and 11th grades. This constitutes an initial test of external validity since these variables were not used to construct the typology and were collected at earlier stages of the high school career.

Discriminant function analysis

In this analysis the school adjustment typology is used as an outcome variable, and school adjustment variables from the first wave of the study are used as predictor variables.

This analysis indicates that one significant discriminant function accurately discriminates between the groups using Wave 1 school variables. A second weaker discriminant function also emerged. However, this had only 1/10th of the power of the first and was difficult to interpret.

Significance of the discriminant functions The first discriminant function is highly statistically significant. The following represent the basic results:

Canonical correlation, R=.668.
Eigenvalue = .81
Percentage of discriminating variance = 85.6%

When this discriminant function is extracted Wilk's Lambda changes from .485 to .877 indicating a large loss of discriminating information. A second discriminant function extracts 9.8% of the discriminating variance and has a canonical correlation of R=.29.

Interpreting the discriminant functions

As expected the first discriminant function separates thrivers group from the 3 other groups. Dropouts and stagnators are at one extreme of this function with scores of 1.432 and .77 standard deviations above the overall sample mean. Thus, the scoring direction of the function is such that a high score means poor adjustment. The "middle of the road" group with a score of -.07 is at the mean, while thrivers score -1.11 standard deviations below the overall mean. The highest loading scales on the discriminant function include :

- school effort [.58]
- expectations for education [.57]
- academic grade level [.54].

However, most of the important school bonding variables have high and significant structure coefficients with this discriminant function. Essentially, the discriminant function separates highly bonded committed students (high achieving, hard working, etc.) from weakly bonded youth (low achieving, low commitment, lazy, bored, etc.).

The second discriminant function is uninterpretable. It barely reaches significance and accounts for only 9% of the discriminating variance. Thus, no attempt is made to interpret the meaning of this function.

How accurately are the types predicted?

This discriminant function is quite successful in correctly classifying students into their appropriate types using wave 1 data. Fully 55% of all students are classified into their correct groups at the final wave.

Predictive accuracy varies across the different groups i.e.,. it is relatively easier to predict the two extreme group i.e.,. dropouts and thrivers than the intermediate group.

Thriving students are classified very accurately (76% are correctly classified). This group has minimal overlap with both dropouts and stagnating clusters. It has only 17.4% overlap with the intermediate group 1, indicating a clear differentiation between thriving and intermediate youth.

The stagnating group is also fairly well classified with 57% correctly classified. However, 24% are incorrectly classified as dropouts. This is expected given the similarities of their bonding profiles from the one-way ANOVA's. This indicates that dropouts and stagnators are relatively close to each other in discriminant space with only a fuzzy boundary between them.

The intermediate students have the lowest level of correct classification. Cnly 42% are correctly classified using Wave 1 school data discriminant functions. The largest overlap occurs with the thriving students in group 3. Specifically, 23% of these youth are erroneously classified thrivers; 33% are classified as dropouts, and 31% as stagnators. These errors confirm the intermediate position of this cluster, and also the fact that they are closer to the negative end of the discriminant space.

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TABLE: WILKS' LAMBDA AND UNIVARIATE F-RATIO WITH 3 AND 466 DEGREES OF FREEDOM: WAVE 1 SCHOOL DATA

VARIABLE	WILKS' LAMBDA	F	SIGNIFICANCE
ZW1B23	0.84891	27.65	0.0000
ZW1B24	0.85752	25.81	0.0000
ZW1B25	0.78012	43.78	0.0000
ZW1B26	0.90144	16.98	0.0000
ZW1B27	0.82094	33.88	0.0000
ZW1B28	0.93533	10.74	0.0000
ZW1B29	0.78463	42.64	0.0000
ZW1B30	0.91180	15.02	0.0000
ZW1B31	0.84717	28.02	0.0000
ZW1B32	0.90071	17.12	0.0000
ZW1B33A	0.92603	12.41	0.0000
ZW1B34	0.80405	37.85	0.0000
ZW1B35	0.82840	32.18	0.0000
ZW1B36	0.89994	17.27	0.0000
ZW1B37	0.92802	12.05	0.0000
ZW1B38	0.79675	39.63	0.0000
ZW1B39	0.80864	36.76	0.0000
ZW1B40	0.90443	16.41	0.0000
ZW1B41	0.81943	34.23	0.0000
ZW1B51	0.88249	20.68	0.0000
ZW1B62	0.94440	9.145	0.0000

TABLE : CANONICAL DISCRIMINANT FUNCTIONS - WAVE 1 SCHOOL VARIABLES

FUNCTION	EIGENVALUE	CAN.CORR	WILKS LAMBDA	CHI-SQ	SIGNIF.
1	0.80	0.668	0.485	329.49	0.0000
2	0.09	0.291	0.877	59.45	0.0245

TABLE: STRUCTURE MATRIX: POOLED WITHIN-GROUPS CORRELATIONS BETWEEN DISCRIMINATING VARIABLES AND CANONICAL DISCRIMINANT FUNCTIONS

(VARIABLES ORDERED BY SIZE OF CORRELATION WITHIN FUNCTION)

	FUNC 1	FUNC 2
ZW1B29	-0.58262*	-0.08200
ZW1B25	-0.56671*	0.48104
ZW1B34	-0.53933*	0.28237
ZW1B38	0.53160*	0.51987
ZW1B39	0.52882*	0.32871
ZW1B41	0.51592*	-0.12234
ZW1B27	-0.50793*	-0.29850
ZW1B35	0.49562*	0.30407
ZW1B31	0.47142*	0.09723
ZW1B23	-0.46546*	-0.18425
ZW1B24	-0.43967*	0.33064
ZW1B51	-0.40299*	-0.07321
ZW1B36	0.36822*	0.10589
ZW1B26	-0.36696*	0.03230
ZW1B32	0.35926*	-0.25591
ZW1B40	0.35583*	0.15946
ZW1B30	0.34200*	-0.02542
ZW1B33A	-0.30946*	-0.12857
ZW1B37	0.29263*	0.27620
ZW1B28	-0.29087*	-0.08708
ZW1B62	0.26149*	0.12884

TABLE: CANONICAL DISCRIMINANT FUNCTIONS EVALUATED AT CLUSTER MEANS (TYPE CENTROIDS)

GROUP	FUNC 1	FUNC 2
1	-0.07363	0.37361
2	1.32835	-0.20478
3	-1.11700	-0.26874
4	0.77305	-0.25815

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TABLE: CLASSIFICATION RESULTS PREDICTING FINAL TYPOLOGY MEMBERSHIP USING WAVE 1 SCHOOL VARIABLES

ACTUAL GROUP		NO. OF CASES	PREDICTED GROUP MEMBERSHIP			
			1	2	3	4
GROUP	1	186	78	31	44	33
			41.9%	16.7%	23.7%	17.7%
GROUP	2	99	13	56	6	24
			13.1%	56.6%	6.1%	24.2%
GROUP	3	138	24	5	105	4
			17.4%	3.6%	76.1%	2.9%
GROUP	4	47	9	11	6	21
Dropouts			19.1%	23.4%	12.8%	44.7%
UNGROUPED CASES		299	65	79	61	94
			21.7%	26.4%	20.4%	31.4%

PERCENT OF "GROUPED" CASES CORRECTLY CLASSIFIED: 55.32%

CHAPTER 4

FAMILY INFLUENCES:
VALIDATING THE TYPOLOGY AGAINST DIFFERENTIAL FAMILY PROCESSES

Validating the Typology against
Family Characteristics and background

Family characteristics were not used in developing the basic school adjustment typology. In this section we validate the school bonding patterns of adjustment against family characteristics of the youth. This exercise involves the following objectives:
- Establish predictive (concurrent) validity of the types against family domain variables
- Provide further description of types on family characteristics
- Examine the degree of classification accuracy using family variables
- Estimate the relative degree of importance of family background variables
- Examine longitudinal influences in which Wave 1 family variables are used to predict Wave 3 type membership

Since family variables were not used to construct the typology they can also legitimately be used in statistical tests to examine type differences. Both Wave 1 and Wave 3 family variables are used in discriminant analyses to predict final school adjustment type membership and clarify type differences in family characteristics. The wave 1 analysis is followed by the same discriminant analysis using Wave 3 data.

Family profiles of the four types

Initially we provide family profiles of the four types using Wave 1 data. The discriminant analysis produces one-way univariate ANOVA F-ratio tests to clarify type differences. These indicate that most of the family variables have high F-ratios with high levels of significance, and that the types profoundly differ in family profiles and backgrounds. The descriptions below are generated from the Z-scores and F-ratio tests that accompany the multivariate discriminant tests (tables below).

Dropouts

The following describes the family profile of dropouts.

Poor parental education: Dropouts have the lowest level of parental education. They are significantly lower than the other groups (P=.01).

High Family transience and school disruption: They have the highest level of family/school transience indicating that they have been to more schools and experienced more relocations than other groups.

Parental disatisfaction: Their relationships with parents is not

satisfactory. They have a significantly higher score than other groups on parental disatisfaction with school related behaviors and a significantly low score on general parental satisfaction.

Poor Parental support and Low Involvement in Education: Their parents provide low support for education. They have the lowest score of all groups for parental involvement with school (P=.0?).

Parental achievement demands and Tolerance of Deviance: Their parents do not have strong achievement demands, and place only moderate pressure on the youth to graduate from high school. Their parents also a tolerate relatively higher levels for school-related deviance. This latter F ratio was only significant at p =.10.

Low Attachment, Low Involvement and Independence from Parents: While dropouts are near average for independence from parents they have the lowest score for attachment to parent (F=10.54 and p =.000) and a significantly low score for involvement with parents. These scores suggest that dropouts are moving away from the orbit of parental supervision.

Severe Negative Labelling by Parents: Dropouts have significantly high scores for parental negative labelling - but more particularly by the mother. They are 0.4 of a standard deviation above the overall grand mean for negative labelling by mother.

Thus compared to most youth dropouts have a more negative relationship which includes: parental disatisfaction, detachment from parents, parental disinvolvement and parental apathy regarding school involvement and support for the student.

Thrivers (Group 3, N=138)

In contrast to dropouts, the thrivers have a positive relationship with parents.

Stable Family life and few relocations: Their family life is the most stable among all these youth. They have a significantly low score for family/school transience (P=.000).

High Parental Satisfaction: Good support for Education: This group is significantly higher than average on parental satisfaction, and the highest scores for both parental support for education and parental involvement with school. Both these relationships are significant at beyond P=.000.

High Parental Achievement Demand: Strong pressure to Graduate: Parental Intolerance of School Deviance: Their parents have higher than average achievement demands (F=2.18, P=.08) and significantly higher scores for pressure for school continuation and

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ultimate graduation (P=.000). Finally, their parents have little tolerance for school deviance.

High Attachment to Parents: More than any other group these students maintain strong emotional attachment and connectedness to their parents. The following are noteworthy for this group:
- Lower independence from parents than other groups
- The highest attachment to parents (P=.000)
- The highest behavioral involvement with parents (P=.000).
- The highest parental supervision
- The lowest score [P=.000] for conflict with parents.

Thus, although they are tightly supervised and have a high involvement with parents they have lower levels of conflict.

Positive Labelling by Parents: This absence of conflict is underlined by the fact that this group - for both mother and father - has the lowest scores on negative labelling. Thus, they are viewed in a highly positive light by their parents. This includes both mother and particularly father [P=.000].

Stagnators [Group 2, N=94]

This group has a profile that is similar to dropouts.

Low parental education: Their parents have significantly lower than average parental education, although not quite as low as the dropouts.

Family Transience and school Disruption: Although they do not have the extremely high family/school transience of dropouts they are far below the more successful groups (ie. groups 1 and 3).

High Parental Disatisfaction: Low Parental Support for School:

The similarity to dropouts is shown by high parental disatisfaction with school behaviors, low general parental satisfaction and low parental support for education. Their parents are somewhat apathetic regarding the student's academic future and impose relatively minimal achievement demands or even pressure to continue at school and graduate (p = .000).

High Disengagement from Parents: This group is also detaching more rapidly from parents than more successful students. They have higher than average independence, low attachment to parents [P=.000] and low involvement with parents [P=.000]

High Conflict with Parents; Severe Negative Labelling: They have higher conflict with parents than other groups. This conflict occurs between the youth and both parents - but more particularly with the father.

TABLE: GROUP MEAN Z-SCORES FOR STUDENT TYPES: FAMILY VARIABLES

	Intermediates	Stagnators	Thrivers	Dropouts
ZW1G1	0.150	-0.200	0.037	-0.211
ZW1B1	-0.228	-0.018	-0.194	0.619
ZW1B2	-0.133	0.200	-0.248	0.218
ZW1B3	0.211	-0.346	0.313	-0.282
ZW1B4	0.081	-0.371	0.343	-0.084
ZW1B5	-0.110	-0.107	0.310	-0.251
ZW1B6	-0.030	-0.183	0.130	0.155
ZW1B7	0.147	-0.181	0.329	-0.043
ZW1B8	0.064	0.067	-0.162	-0.199
ZW1B9	-0.054	0.002	-0.117	-0.036
ZW1B10	-0.082	-0.003	-0.176	-0.059
ZW1B11	0.005	-0.307	0.296	-0.436
ZW1B12	-0.027	-0.276	0.300	-0.244
ZW1B13	-0.011	0.051	0.116	0.082
ZW1B14	-0.106	0.362	-0.414	0.084
ZW1B19	-0.149	0.505	-0.638	0.402
ZW1B20	-0.149	0.448	-0.572	0.153

TABLE: <u>WILKS' LAMBDA AND UNIVARIATE ANOVA F-RATIO WITH 3 AND 453 DEGREES OF FREEDOM</u>

VARIABLE	WILKS' LAMBDA	F	SIGNIFICANCE
ZW1G1	0.97671	3.601	0.0135
ZW1B1	0.94090	9.485	0.0000
ZW1B2	0.95714	6.761	0.0002
ZW1B3	0.91126	14.71	0.0000
ZW1B4	0.92585	12.09	0.0000
ZW1B5	0.95514	7.091	0.0001
ZW1B6	0.98571	2.189	0.0885
ZW1B7	0.95065	7.839	0.0000
ZW1B8	0.98633	2.092	0.1005
ZW1B9	0.99765	0.3561	0.7847
ZW1B10	0.99537	0.7028	0.5507
ZW1B11	0.93477	10.54	0.0000
ZW1B12	0.95161	7.679	0.0001
ZW1B13	0.99672	0.4965	0.6849
ZW1B14	0.92071	13.00	0.0000
ZW1B19	0.79836	38.14	0.0000
ZW1B20	0.83426	30.00	0.0000

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Intermediate students (Group 1 N=184)

This cluster has average scores on most profile elements. They do not exhibit the many negative features characterizing stagnating and dropout youth. They share some of the positive features of successful students.

On the positive side their parents have moderately education and family/school life is relatively stable. One bright spark is that there is above average parental pressure on the youth to encourage school continuation and graduation. Relationships with parents are on an even keel, with relatively high parental satisfaction. On other parent variables this group does not exhibit the high scores of Thrivers. This group is intermediate between thrivers and the two negatively bonded youth clusters (stagnators and dropouts).

Discriminant function analysis

Using the four-way typology as a categorical criterion variable and the family variables as predictors a multiple discriminant function analysis was conducted. Initially this was run using Wave 1 family predictors. This was followed by the identical analysis, except for the fact that Wave 3 variables were used. We expect that the Wave 1 variables, being collected at an earlier point in time, would have lower levels of predictive accuracy than the more contemporaneous Wave 3 data.

Significance of discriminant Functions using wave 1 family variables

One highly significant discriminant linear function based on family variables is sufficient to clearly separate the clusters at a high level of statistical significance.

This first discriminant function has the following features:
- Canonical correlation of $R=.54$
- Highly significant (Chi-square $= 57.3$ and $P=.003$)
- Accounts for 75% of the discriminating variance.

These figures support the assertion that the groups are highly different in family profiles and supports the validity of the typology.

Interpreting the discriminant function

The discriminant function based on the family variables is again interpreted using structure coefficients. The most powerful structure coefficients are:

- Parental satisfaction [-.46]
- Conflict with parents [.45]
- Parental support for education [-.43].

Table: Cluster means in Z-scores using wave 3 Family variables

Variable	Intermediates	Stagnators	Thrivers
ZW3G1	0.096	-0.171	0.022
ZW3B1	-0.077	0.114	-0.002
ZW3B2	-0.052	0.449	-0.288
ZW3B3	0.102	-C.467	0.287
ZW3B4	0.054	-0.457	0.294
ZW3B5	-0.128	-0.279	0.313
ZW3B6	0.003	-0.2542	0.208
ZW3B7ZA	0.161	-0.705	0.329
ZW3B8	0.051	0.245	-0.320
ZW3B9A	0.058	0.138	-0.132
ZW3B10A	-0.110	0.345	-0.113
ZW3B11	0.002	-0.432	0.335
ZW3B12	-0.021	-0.438	0.367
ZW3B13	-0.0024	-0.170	0.186
ZW3B14A	0.020	0.480	-0.426
ZW3B19	·0.030	0.792	-0.624
ZW3B20	0.020	0.695	-0.614

TABLE: WILKS' LAMBDA (U-STATISTIC) AND UNIVARIATE F-RATIO FOR WAVE 3 FAMILY VARIABLES WITH 3 AND 421 DEGREES OF FREEDOM

VARIABLE	WILKS' LAMBDA	F	SIGNIFICANCE
ZW3G1	0.98261	2.483	0.0604
ZW3B1	0.98122	2.686	0.0462
ZW3B2	0.91739	12.64	0.0000
ZW3B3	0.89461	16.53	0.0000
ZW3B4	0.90941	13.98	0.0000
ZW3B5	0.93944	9.046	0.0000
ZW3B6	0.97076	4.227	0.0058
ZW3B7ZA	0.84139	26.45	0.0000
ZW3B8	0.94988	7.404	0.0001
ZW3B9A	0.98810	1.690	0.1684
ZW3B10A	0.95632	6.409	0.0003
ZW3B11	0.90470	14.78	0.0000
ZW3B12	0.90147	15.34	0.0000
ZW3B13	0.98026	2.826	0.0384
ZW3B14A	0.87021	20.93	0.0000
ZW3B19	0.70276	59.35	0.0000
ZW3B20	0.74251	48.66	0.0000

TABLE: MULTIVARIATE SIGNIFICANCE TESTS OF DISCRIMINANT FUNCTIONS - WAVE 3 FAMILY VARIABLES

FUNCTION	EIGENVALUE	CAN.CORR	WILKS LAMBDA	CHI.SQ	SIG.
1	0.88	0.68	0.46	317.8	0.0000
2	0.10	0.30	0.87	55.3	0.0064

This linear function reflects a dimension of negative (non-supportive, conflicted and stigmatizing relation with parents) versus a positive supportive relationship. The group mean scores on the discriminant function indicate that successful students are at one extreme and dropouts and stagnators at the other extreme. Consistency with the univariate ANOVA's is shown by the fact that the stagnating students have a somewhat higher score than dropouts [.94 v .69].

The second discriminant function is not as significant as the first and has a lower canonical correlation [.28]. However, this function adds insight in that it discriminates between dropouts and stagnators. It indicates that dropouts are differentiated by higher family-school transience and lower parental education.

Accuracy of classifying students using wave 1 family discriminant functions.

The classification matrix indicates that wave 1 family data alone allow 46.6% of wave 1 students to be classified correctly into their respective types. This is well above the classification accuracy expected by chance.

Dropouts and thrivers are well classified: 53% of the eventual dropouts are correctly classified , while 62% of thrivers are correctly classified using wave 1 family data.

However, intermediate and stagnating students are less well classified. The stagnators (group 2) are classified at an accuracy of 47.9%, since many overlap with dropouts. The intermediate group (cluster1) overlaps with both good and bad segments of discriminant space and only 32.6% of them are correctly classified. Errors fall about equally in both the good and bad directions of the discriminant space, confirming their intermediate position between thrivers, and the two failing groups.

Predicting Wave 3 type membership from wave 3 family variables

The above analysis was replicated using concurrent family data from the final wave of the longitudinal design. This constitutes a test of external validity since these variables were not used in constructing the typology.

Univariate ANOVA results: Again, virtually all of the family variables have high and significant F-ratios at beyond the p =.05 level. The F-ratios are generally higher than those for the wave 1 data. Only 2 variables fail to reach the .05 level. These are parental education which is significant at the P=.06 level; and parental intolerance of general deviance which fails to reach significance [P=.17].

The univariate F-ratio tests thus indicate that family configurations are significantly different across the school adjustment/bonding typology. This provides strong support for the

TABLE: DISCRIMINANT FUNCTION STRUCTURE MATRIX - POOLED WITHIN-GROUPS CORRELATIONS BETWEEN DISCRIMINATING VARIABLES AND CANONICAL DISCRIMINANT FUNCTIONS

(VARIABLES ORDERED BY SIZE OF CORRELATION WITHIN FUNCTION)

	FUNC 1	FUNC 2	FUNC 3
ZW1B19	0.78196*	-0.04557	0.07549
ZW1B20	0.69022*	0.15359	-0.06960
ZW1B3	-0.46073*	0.22555	0.33845
ZW1B14	0.45156*	0.13593	-0.09887
ZW1B4	-0.43307*	-0.13844	0.15276
ZW1B11	-0.40053*	0.15377	-0.18332
ZW1B7	-0.35301*	-0.03103	0.09627
ZW1B12	-0.34443*	-0.04245	-0.19191
ZW1B2	0.31980*	-0.13168	-0.15311
ZW1B10	0.10288*	0.05335	0.03163
ZW1B9	0.07359*	0.03597	0.01824
ZW1B1	0.21935	-0.70735*	0.10742
ZW1B8	0.09105	0.33501*	0.13786
ZW1B6	-0.13534	-0.28101*	0.07224
ZW1B5	-0.27294	-0.06936	-0.57166*
ZW1G1	-0.16574	0.25765	0.37708*
ZW1B13	-0.02969	-0.12388	-0.18302*

TABLE: CANONICAL DISCRIMINANT FUNCTIONS EVALUATED AT GROUP MEANS (GROUP CENTROIDS)

GROUP	FUNC 1	FUNC 2	FUNC 3
1	-0.06273	0.20469	0.21649
2	0.94922	0.13559	-0.26288
3	-0.76906	-0.12502	-0.18054
4	0.69383	-0.80867	0.23881

TABLE: CLASSIFICATION RESULTS PREDICTING TYPE MEMBERSHIP FROM WAVE 1 FAMILY VARIABLES

ACTUAL GROUP		NO. OF CASES	PREDICTED GROUP MEMBERSHIP			
			1	2	3	4
GROUP	1	184	60	44	52	28
			32.6%	23.9%	28.3%	15.2%
GROUP	2	94	17	45	8	24
			18.1%	47.9%	8.5%	25.5%
GROUP	3	138	27	12	86	13
			19.6%	8.7%	62.3%	9.4%
GROUP (Dropouts)	4	41	3	8	8	22
			7.3%	19.5%	19.5%	53.7%
UNGROUPED CASES		276	58	95	71	52
			21.0%	34.4%	25.7%	18.8%

PERCENT OF "GROUPED" CASES CORRECTLY CLASSIFIED: 46.61%

concurrent validity for this typology.

Multivariate Analyses: Discriminant functions and multivariate significance tests:

One major discriminant function emerge with significance at beyond p = .05. This function has a canonical correlation of R = .69 and an eigenvalue of .88 (significant at beyond P=.000). This strong canonical correlation demonstrates that family variables are powerfully related to the school bonding and adjustment patterns.

Interpreting the discriminant function: Again, we interpret the discriminant function using structure coefficients. The critical variables defining the first discriminant function are:
- negative labeling by mother [.69]
- negative labelling by father [.62].
- conflict with parents [.40].

Thus, this critical dimension between the types is defined by parent negative labeling and parent-youth conflict, replicating Wave 1 results. Thrivers report positive labelling from both mother and father and minimal conflict. Stagnators and dropouts, on the other hand, report high parental negative labelling and severe conflict between parents and student.

The discriminant function means of the 4 groups indicate clear separation between the two negative clusters and thriving students. Specifically, the thriving group is over one standard deviation below the overall mean, intermediates are at the overall mean, and stagnators are fully 1.52 standard deviations above the overall mean of this discriminating dimension.

Accuracy of classification using wave 3 variables and final Wave types.

The classification matrix indicates that 65% of students are correctly classified into the school bonding typology using Wave 3 family variables alone. Again, the different types of students are classified at differing levels of accuracy.

Thrivers are generally classified correctly (77%). Stagnators are also accurately classified (74%). The least accuracy is shown in the intermediate group 1. Although, 52% are correctly classified, 17% are classified as stagnators and 30% as thrivers. This reflects the intermediate position and relative blurring of boundaries between it and the other groups.

However, the overall classification hit rate of 65% indicates

that the family variables have high predictive power; and also further reinforces the concurrent validity of the typology. These findings also indicate that the more recent concurrent family data has higher predictive accuracy than Wave 1 data.

TABLE: STRUCTURE MATRIX: POOLED WITHIN-GROUPS CORRELATIONS BETWEEN DISCRIMINATING VARIABLES AND CANONICAL DISCRIMINANT FUNCTIONS

(VARIABLES ORDERED BY SIZE OF CORRELATION WITHIN FUNCTION)

	FUNC 1	FUNC 2	FUNC 3
ZW3B19	0.68863*	0.00421	0.24638
ZW3B20	0.61847*	0.12860	0.38886
ZW3B14A	0.40231*	0.23437	-0.03822
ZW3B4	-0.32552*	0.19719	-0.21113
ZW3B2	0.31435*	-0.14271	0.09556
ZW3B6	-0.18368*	-0.03993	-0.03038
ZW3B5	-0.23234	-0.40354*	-0.07233
ZW3B1	0.06411	-0.35451*	0.27151
ZW3B3	-0.33957	0.35083*	-0.28547
ZW3B10A	0.19592	-0.33994*	-0.00999
ZW3G1	-0.09297	0.31556*	-0.01740
ZW3B8	0.22266	0.29457*	0.04004
ZW3B13	-0.13320	-0.19396*	0.12626
ZW3B9A	0.09904	0.18130*	-0.03157
ZW3B7ZA	-0.43738	0.21258	0.60765*
ZW3B12	-0.34201	0.00248	-0.37983*
ZW3B11	-0.33478	0.08575	-0.36638*

TABLE: CANONICAL DISCRIMINANT FUNCTION GROUP MEANS (GROUP CENTROIDS)

GROUP	FUNC 1	FUNC 2	FUNC 3
1	-0.04095	0.29239	0.12019
2	1.52260	-0.16777	-0.13923
3	-1.02139	-0.25856	-0.09211
4	2.56178	-3.76567	3.24142

TABLE: CLASSIFICATION RESULTS - PREDICTING FINAL TYPE MEMBERSHIP USING CURRENT (WAVE 3) FAMILY DATA

ACTUAL GROUP		NO. OF CASES	PREDICTED GROUP MEMBERSHIP			
			1	2	3	4
GROUP	1	190	98	34	58	0
			51.6%	17.9%	30.5%	0.0%
GROUP	2	96	16	71	4	5
			16.7%	74.0%	4.2%	5.2%
GROUP	3	138	28	4	106	0
			20.3%	2.9%	76.8%	0.0%
UNGROUPED CASES		24	7	10	7	0
			29.2%	41.7%	29.2%	0.0%

PERCENT OF "GROUPED" CASES CORRECTLY CLASSIFIED: 65%

CHAPTER 5

HOW DIFFERENT STUDENTS EXPERIENCE SCHOOL CLIMATE

Validating the School Bonding typology
against Experience of School Climate

Student perception of school climate and their experiences of the school env. onment is third important block of variables is. The analyses reported in this section consists of examinations of the differences between the types across variables which assess different aspects of the school climate. Again, separate univariate and multivariate analyses are conducted, using both Wave 1 and final Wave data.

Profiles of types on School Climate
Dimensions

These profiles are again based on the Z-scores for each type and the univariate ANOVA's conducted between the typology and the school climate dimensions (see tables below).

Dropouts [N=47]

The perceived school climate of dropou. is consistent with ultimate withdrawal of these youth. They experience the school as a highly negative and non-supporting environment.

Relations with teachers: Their reported experience of relations with teachers is extremely negative, with severe negative labelling by teachers and little support or encouragement from teachers.

Safety, Victimization and gang activities: The perception of the social milieu is equally negative. For example, they report significantly low feelings of safety in school, the highest score for perception of gang influence, and for perceiving racial tension at school. They feelings of powerlessness at school is shown by a significantly lower score than other youth for the opportunity to influence what goes on at school.

In other school climate variables their scores are average. The overall profile however, shown by this group is of a negative relationship to teachers and a negative experience of school. In comparing the dropouts to the stagnating youth some differences may be noted. Dropouts report lower perceived support from teachers, and higher scores for perceived racial tension.

Thriving students [N=137]

These youth are at the opposite extreme from the dropouts.

Relations with teachers: Their scores indicate positive labeling by teachers, high support and encouragement from both teachers and

TABLE: GROUP MEANS Z-SCORES ON SCHOOL CLIMATE WAVE 1 VARIABLES

Variable	Intermediate	Stagnator	Thrivers	Dropouts
ZW1B21	-0.072	0.360	-0.643	0.350
ZW1B42	-0.014	0.026	-0.226	0.091
ZW1B43	0.094	-0.351	0.297	-0.308
ZW1B44	-0.024	-0.012	-0.202	0.120
ZW1B45	-0.022	0.040	-0.315	-0.044
ZW1B46	-0.108	0.121	).336	0.201
ZW1B47	0.084	-0.271	0.400	-0.124
ZW1B48	-0.011	-0.186	0.310	-0.046
ZW1B49	0.058	-0.105	0.425	-0.043
ZW1B50	0.104	0.002	-0.136	0.102
ZW1B52	-0.001	-0.057	0.233	-0.109
ZW1B53	-0.056	0.078	-0.303	0.017
ZW1B54	0.034	-0.334	0.579	-0.272
ZW1B55	-0.140	-0.099	0.282	0.032

counselors, and less experience of being treated disrespectfully by teachers.

Instructional issues: They report significantly high levels of individualized instruction. They see school rules as clear, and feel they have high influence on critical things that happen at school.

Safety, victimization, gangs and racial tension: They have high feelings of safety and do not perceive a strong influence of gangs in their school. This is underlined by the low levels of experienced victimization. In fact this group has the lowest scores for victimization of all the types. They report less experience of racial tension in their school compared to the other groups, and little in the way of student-teacher violence in their school.

Stagnators: Group 2 [N=98]

This group experiences the school in a similar manner to the dropout. They share many of the same negative aspects of relationships to teachers as illustrated by the dropout group.

Relationships with teachers: They report high negative labeling by teachers and low encouragement from teachers. They do not feel that they receive individualized instruction. They feel that the school rules are unclear and report a highly significant score for powerlessness or absence of influence on what happens at school.

Safety, victimization, gangs and racial tension: In common with the dropouts they experience their school as having higher than average levels of racial tension, low feelings of safety and a slightly above average score for the perception for gang influence in their school. On these variables the stagnant youth are not clearly differentiated from the dropout youth.

Intermediate students: Group 1 [N=186]

On the school climate variables this group has a score profile intermediate between thriving and stagnating groups. None of the group mean scores are extremely high or low, indicating that this group is located near the overall multivariate centroid of the population.

Discriminant analysis against school climate variables

Strength and significance of discriminant functions: One discriminant function is significant in differentiating between these types. The basic statistics are as follows:
- Canonical correlation R = .53.
- 89% of the discriminating information.
- Significant at beyond the .000 level

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Table : WILKS' LAMBDA AND UNIVARIATE F-RATIO WITH 3 AND 464 DEGREES OF FREEDOM; WAVE 1 SCHOOL CLIMATE VARIABLES AGAINST THE TYPOLOGY

VARIABLE	WILKS' LAMBDA	F	SIGNIFICANCE
ZW1B21	0.81950	34.07	0.0000
ZW1B42	0.98628	2.152	0.0930
ZW1B43	0.93344	11.03	0.0000
ZW1B44	0.98856	1.789	0.1483
ZW1B45	0.97542	3.897	0.0091
ZW1B46	0.95947	6.534	0.0002
ZW1B47	0.93632	10.52	0.0000
ZW1B48	0.96625	5.402	0.0012
ZW1B49	0.94989	8.160	0.0000
ZW1B50	0.98813	1.857	0.1360
ZW1B52	0.98261	2.738	0.0430
ZW1B53	0.97710	3.624	0.0131
ZW1B54	0.86845	23.43	0.0000
ZW1B55	0.96541	5.542	0.0010

TABLE: CANONICAL DISCRIMINANT FUNCTION; SCHOOL CLIMATE

Function	Eigenvalue	Can.Corr.	Wilk's Lambda	Chi.Sq.	Signif.
1	0.38	0.52	0.69	169.1	0.000

TABLE: STRUCTURE MATRIX: POOLED WITHIN-GROUPS CORRELATIONS BETWEEN SCHOOL CLIMATE VARIABLES AND CANONICAL DISCRIMINANT FUNCTIONS

(VARIABLES ORDERED BY SIZE OF CORRELATION WITHIN FUNCTION)

	FUNC 1	FUNC 2
ZW1B21	-0.75949*	-0.04201
ZW1B54	0.62961*	0.08062
ZW1B47	0.41264*	0.22733
ZW1B49	0.37000*	-0.10993
ZW1B46	-0.32178*	-0.22861
ZW1B53	-0.24690*	0.03814
ZW1B45	-0.24510*	0.22973
ZW1B52	0.21011*	-0.11472
ZW1B43	0.39818	0.53960*
ZW1B55	0.25279	-0.53692*
ZW1B50	-0.13150	0.34405*
ZW1B44	-0.15958	0.06943
ZW1B48	0.29749	-0.08381
ZW1B42	-0.18654	-0.06262

TABLE: CANONICAL DISCRIMINANT FUNCTION ON SCHOOL CLIMATE EVALUATED AT GROUP MEANS (GROUP CENTROIDS)

GROUP	FUNC 1	FUNC 2
1	-0.12084	0.23294
2	-0.70691	-0.18612
3	0.88377	-0.11285
4	-0.62390	-0.20481

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- Wilk's Lambda = .69

Thus, this significant discriminant dimension indicates that the four types are highly differentiated according to their experiences in school.

Interpreting this discriminant function

The most important school climate variables and structure coefficients defining this discriminant function are as follows:
- Encouragement from teachers [.63].
- Student influence on what happens at school [.63]
- Positive labeling by teachers [.76].

This pattern of structure coefficients suggests that the discriminant function separates that feel empowered, encouraged, and positively labeled versus students who experience the reverse of these qualities. As expected the thriving students score the highest on this discriminant function. In fact they are almost a total standard deviation (.88) above the overall sample mean on this function. The two negative groups (ie., dropouts and stagnator) are respectively -.62 and -.71 standard deviation units below the overall grand mean. Thus, this discriminant function demonstrates profound differences in the students experiences of school climate in their respective school situations.

Predicting group membership from the classification tables.

Students with a positive bonding to school are predicted very highly from this discriminant function - even though the functions based on data collected in wave 1 of the study. 65% of thrivers are correctly predicted into their correct final wave type membership.

Dropouts are reasonably well predicted - although they overlap substantially with stagnators i.e. 36% of the dropouts are correctly classified as dropouts while 32% are classified as stagnators. A similar finding occurs for stagnating youth, 37% of whom are correctly classified while 30% are erroneously classified as dropouts. These classification errors indicate the extremely high level of similarity between stagnators and dropouts - even in the earlier grades.

Intermediate students are fragmented across both positive and negative sides of the discriminant boundaries - although the largest proportion (ie., 34%)are correctly classified.

Overall, 44% of youth are correctly classified by this discriminant analysis. This figure is quite encouraging given that random allocations would produce only about 25-30% correct classifications given the size of the 4 groups.

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TABLE: CLASSIFICATION RESULTS PREDICTING WAVE 3 TYPOLOGY USING WAVE 1 SCHOOL CLIMATE VARIABLES

ACTUAL GROUP		NO. OF CASES	PREDICTED GROUP MEMBERSHIP			
			1	2	3	4
GROUP	1	186	63	33	54	36
			33.9%	17.7%	29.0%	19.4%
GROUP	2	98	21	36	11	30
			21.4%	36.7%	11.2%	30.6%
GROUP	3	137	26	8	90	13
			19.0%	5.8%	65.7%	9.5%
GROUP (Dropouts)	4	47	7	15	8	17
			14.9%	31.9%	17.0%	36.2%
UNGROUPED CASES		293	65	76	80	72
			22.2%	25.9%	27.3%	24.6%

PERCENT OF "GROUPED" CASES CORRECTLY CLASSIFIED: 44.02%

Predicting typological membership using school climate data from wave 3.

This analysis replicates the above discriminant procedure i.e. the same school climate variables as reported above are used. However, wave 3 data is used. Thus, the variables are contemporaneous and we might expect that classification accuracy should be substantially higher. Furthermore, since this analysis uses wave 3 contemporaneous data the dropout group disappears - since we do not have final wave data for these youth.

Strength of the discriminant functions: Two significant discriminant functions are found in this analysis.

Discriminant function 1 This is the more important function. It has the following characteristics:
- Canonical correlation , R=.67.
- 89% of the discriminating information
- Significant at beyond the .000 level
- Wilk's Lambda = .997.

Discriminant function 2 This function is far weaker. It has the following characteristics:
- Canonical correlation R = .26
- 7% of the discriminating information
- It is significant at P = .03

Interpreting the discriminant functions: The first discriminant function is defined by the following variables and structure coefficients:
- Negative labeling by teachers [.68]
- Encouragement from teachers [-.59]
- Individualized instruction [-.48]
- Racial tension [.42]

Thus, this dimension separates youth who experience school as a positive and nurturing environment (positive labeling, high encouragement, individualized instruction, etc.) from those who report a negative, discouraging and conflicted school climate.

The group mean scores for this discriminant function show that the thriving youth are at one extreme [-1.06] with stagnators at the opposite extreme [1.3] The scores indicate that these two groups are about two standard deviations apart from each other in the discriminant space.

The second discriminant function is not interpretable. The

structure coefficients similarly give no clear indication as to a substantive meaning for this discriminant function.

Predictive accuracy using contemporaneous data for the

discriminant analysis. Overall the number of cases correctly classified by this discriminant functions jumps to 62%. Thus, contemporaneous data produces a higher level of discrimination and higher levels of predictive accuracy.

The two extreme groups (ie, stagnators and thrivers) have higher proportions correctly classified than the intermediate group. The thriving group has 69% of cases correctly classified while 72% of stagnators are correctly classified.

The intermediate group has several "expected errors": 20% are classified as stagnators and 27% as thrivers, while 52% are correctly classified. This indicates that school climate and experience dimensions provide a high level of correct classification using contemporaneous wave 3 data to predict final typological membership.

TABLE: GROUP MEAN Z-SCORES FOR WAVE 3 SCHOOL CLIMATE VARIABLES

Variables	Intermediates	Stagnators	Thrivers
ZW3B21	0.110	0.706	-0.644
ZW3B42	-0.102	0.362	-0.162
ZW3B43	0.099	-0.442	0.220
ZW3B44	-0.001	0.048	-0.078
ZW3B45	-0.063	0.255	-0.162
ZW3B46	-0.063	0.592	-0.346
ZW3B47	0.086	-0.445	0.282
ZW3B48	0.026	-0.577	0.420
ZW3B49	0.022	-0.636	0.446
ZW3B50A	0.089	0.235	-0.372
ZW3B52	0.011	-0.306	0.231
ZW3B53	0.018	0.357	-0.376
ZW3B54A	-0.019	-0.675	0.574
ZW3B55A	-0.082	-0.253	0.320

Table: WILKS' LAMBDA AND UNIVARIATE F-RATIO WITH 3 AND 422 DEGREES OF FREEDOM: WAVE 3 SCHOOL CLIMATE VARIABLES

VARIABLE	WILKS' LAMBDA	F	SIGNIFICANCE
ZW3B21	0.71879	55.03	0.0000
ZW3B42	0.95398	6.786	0.0002
ZW3B43	0.93277	10.14	0.0000
ZW3B44	0.99759	0.3392	0.7970
ZW3B45	0.97246	3.984	0.0081
ZW3B46	0.86549	21.86	0.0000
ZW3B47	0.91635	12.84	0.0000
ZW3B48	0.86131	22.65	0.0000
ZW3B49	0.83457	27.88	0.0000
ZW3B50A	0.92664	11.14	0.0000
ZW3B52	0.94995	7.412	0.0001
ZW3B53	0.92347	11.66	0.0000
ZW3B54A	0.77826	40.08	0.0000
ZW3B55A	0.93651	9.537	0.0000

TABLE: CANONICAL DISCRIMINANT FUNCTIONS: WAVE 3 SCHOOL CLIMATE VARIABLES

Function	Eigenvalue	Can.Corr.	Wilk's lambda	Chi-sq.	Signif.
1	O.82	.67	.497	290.47	0.0000
2	0.07	.26	.907	40.42	0.03

Table: STRUCTURE MATRIX: POOLED WITHIN-GROUPS CORRELATIONS BETWEEN SCHOOL CLIMATE WAVE 3 VARIABLES AND DISCRIMINANT FUNCTIONS

(VARIABLES ORDERED BY SIZE OF CORRELATION WITHIN FUNCTION)

	FUNC 1	FUNC 2
ZW3B21	0.68443*	0.26092
ZW3B54A	-0.58782*	0.00814
ZW3B49	-0.48633*	0.21203
ZW3B48	-0.43461*	0.23100
ZW3B46	0.42144*	-0.23505
ZW3B53	0.31550*	0.06802
ZW3B42	0.20365	-0.43459*
ZW3B50A	0.28334	0.41656*
ZW3B55A	-0.26542	-0.34149*
ZW3B43	-0.27540	0.32738*
ZW3B45	0.16919	-0.24468*
ZW3B52	-0.23949	-0.04693
ZW3B47	-0.31819	0.19819
ZW3B44	0.05131	0.01068

Table: CANONICAL DISCRIMINANT FUNCTIONS FOR SCHOOL CLIMATE WAVE 3 VARIABLES EVALUATED AT GROUP MEANS (GROUP CENTROIDS)

GROUP	FUNC 1	FUNC 2
1	0.06998	0.26919
2	1.34577	-0.27344
3	-1.06556	-0.17933

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Table: CLASSIFICATION RESULTS USING WAVE 3 SCHOOL CLIMATE VARIABLES TO PREDICT WAVE 3 TYPE MEMBERSHIP

ACTUAL GROUP		NO. OF CASES	PREDICTED GROUP MEMBERSHIP			
			1	2	3	4
GROUP	1	186	97	37	50	2
			52.2%	19.9%	26.9%	1.1%
GROUP	2	99	24	71	2	2
			24.2%	71.7%	2.0%	2.0%
GROUP	3	140	35	9	96	0
			25.0%	6.4%	68.6%	0.0%
GROUP	4	1	0	0	0	1
Dropouts			0.0%	0.0%	0.0%	100.0%

PERCENT OF "GROUPED" CASES CORRECTLY CLASSIFIED: 62.21%

CHAPTER 6

PEER RELATIONS AND PERSONAL CHARACTERISTICS

Validating the School Bonding/Dropout Typology against peer relationships

In this validation analysis peer and social relationship variables are used in both bivariate and multivariate discriminant analyses to contrast the types and predict group membership. This analysis also provides profiles of the four types on various aspects of peer relationships.

Intermediate students (Type 1: N=177)

This group has no major atypicalities and hovers around the grand mean of the overall sample. The only atypicality is that they have fewer dropouts amongst friends than other groups. They also have more positive or conventional peers.

Stagnators (Group 2: N=83)

Deviant peer relationships: This group is characterized by the presence of highly delinquent peers. Peers are also characterized by very low score for the academic orientation, and low interest in school among peers. These youth also report that their peers see them as "bad, or deviant" given their significantly high score for negative labelling.

Role models for dropping out: They have an above average score for dropout among their immediate family members, and a significantly higher than average score for dropout behaviors among their friends.

Attachment and loneliness: This group has a significantly higher than average score for emotional loneliness.

Thriving youth (Group 3: N=134)

Conventional peer relations: This group does not experience negative labeling by friends. In fact they have the most positive labelling of all these groups. Their scores indicate they have the lowest tendency to be attached to delinquent peers, and the highest tendency to have peers who are interested in conventional educational aspirations.

Role models for dropout: Significantly fewer of their peers or family members have dropped out of school compared to the dropouts and the stagnators.

Attachment and loneliness. This group has the lowest score for emotional loneliness, and in fact falls significantly below the other groups.

Dropouts (Group 4: N=46)

Delinquent peers: The dropout group is strongly linked to a set of

TABLE: MEAN Z-SCORES FOR WAVE 3 CLUSTERS; PEER RELATIONSHIPS AT WAVE 1

Variable	Intermediate	Stagnators	Thrivers	Dropouts
ZW1B22	-0.010	0.456	-0.579	0.089
ZW1B56	-0.089	0.131	-0.004	0.335
ZW1B57Z	-0.228	0.075	-0.258	0.051
ZW1B58	-0.058	0.084	-0.041	0.160
ZW1359Z	-0.222	0.266	-0.421	0.382
ZW1B60	0.138	-0.331	0.329	0.037
ZW1B61	-0.031	-0.010	-0.141	-0.128
ZW1B63	-0.087	0.331	-0.335	0.372

TABLE: WILKS' LAMBDA AND UNIVARIATE F-RATIO WITH 3 AND 439 DEGREES OF FREEDOM; WAVE 1 PEER RELATIONSHIPS

VARIABLE	WILKS' LAMBDA	F	SIGNIFICANCE
ZW1B22	0.84908	26.01	0.0000
ZW1B56	0.98271	2.575	0.0534
ZW1B57Z	0.97191	4.229	0.0058
ZW1B58	0.99408	0.8709	0.4561
ZW1B59Z	0.89518	17.14	0.0000
ZW1B60	0.93995	9.348	0.0000
ZW1B61	0.99618	0.5607	0.6412
ZW1B63	0.92453	11.95	0.0000

TABLE: CANONICAL DISCRIMINANT FUNCTIONS BASED ON WAVE 1 PEER RELATIONSHIPS

Function	Eigenvalue	Can. Corr.	Wilk's Lambda	Chi Sq.	Signif.
1	0.33	0.50	0.71	149.7	0.000
2	0.05	0.22	0.94	25.0	0.03

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peers who are far more delinquent than average.

Role models for Dropout: The dropouts score higher than any other group for family members who have dropped out of school or failed to graduate. Furthermore, they have a significantly higher than average score for dropout among peers (F = 4.2, p = .005) .

Attachment and loneliness: They report a higher than average level of emotional loneliness. Many of the features of this dropout profile are similar to that of the stagnating youth.

Discriminant analysis to examine type separation using peer relationship data

The data indicate that two significant functions emerge from this analysis.

The first discriminant function has a canonical correlation of R = .50. It accounts for 85% of the discriminating information and is significant at the p = .00 level. The second discriminant function has a canonical correlation of R = .22 and contributes only 13% of the discriminating information. However, it is significant at P=.03.

Interpreting the discriminant functions

Discriminant function 1. This is characterized by high scores on the following variables:
-   Negative labelling by friends [.73]
-   Delinquent peer group [.57]
-   Emotional loneliness [.49].

This pattern of loadings suggests that one end of this function as characterized by high levels of negative labeling by friends i.e.,. the youth feels that his/her friends perceive them as a bad/deviant person. There is also a strong tendency towards delinquent peers and emotional loneliness. The positive end of this function is characterized by positive peer labeling, conventional/law abiding peers and an absence of emotional loneliness.

The second discriminant function is distinguished from the first by characterized by a high loading for family role models for dropout (.50) perhaps indicating a family dimension ranging from highly educated to highly uneducated families.

The group mean scores for this discriminant function indicate that stagnating youth (.85) and dropouts (.62) are at one extreme while thriving youth are at the other extreme [-.69]. Thus we can concluded that peer relationships of these youth are profoundly different. As usual the intermediate group is located closer to the overall population mean.

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TABLE: STRUCTURE MATRIX: POOLED WITHIN-GROUPS CORRELATIONS BETWEEN WAVE 1 PEER RELATIONSHIPS VARIABLES AND CANONICAL DISCRIMINANT FUNCTIONS

(VARIABLES ORDERED BY SIZE OF CORRELATION WITHIN FUNCTION)

	FUNC 1	FUNC 2
ZW1B22	0.70363*	-0.51472
ZW1B59Z	0.57027*	0.43563
ZW1B63	0.48936*	0.21282
ZW1B56	0.14009	0.46355*
ZW1B61	0.06759	-0.21348*
ZW1B58	0.10411	0.21167*
ZW1B60	-0.41457	0.19627
ZW1B57Z	0.27245	0.23013

TABLE: CANONICAL DISCRIMINANT FUNCTIONS EVALUATED AT GROUP MEANS (GROUP CENTROIDS): WAVE 1 PEER RELATIONS

	FUNC 1	FUNC 2
1	-0.05488	-0.18761
2	0.85692	-0.08390
3	-0.69056	0.11798
4	0.62073	0.535C7

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TABLE: CLASSIFICATION RESULTS USING WAVE 1 PEER RELATIONSHIP VARIABLES TO PREDICT TYPE MEMBERSHIP

ACTUAL GROUP		NO. OF CASES	PREDICTED GROUP MEMBERSHIP			
			1	2	3	4
GROUP	1	177	58	30	59	30
			32.8%	16.9%	33.3%	16.9%
GROUP	2	86	16	41	10	19
			18.6%	47.7%	11.6%	22.1%
GROUP	3	134	24	8	87	15
			17.9%	6.0%	64.9%	11.2%
GROUP (Dropouts)	4	46	3	10	9	24
			6.5%	21.7%	19.6%	52.2%
UNGROUPED CASES		278	53	85	82	58
			19.1%	30.6%	29.5%	20.9%

PERCENT OF "GROUPED" CASES CORRECTLY CLASSIFIED: 47.40%

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Accuracy of classification using peer wave 1 variables.

Overall 47% of these youth are correctly classified into the four respective types. Once again, classification accuracy varies in predictable ways among the groups.

The dropouts have a fairly high level of accuracy with 52% being correctly classified as dropouts using the wave 1 data About 1 in 5 dropouts are classified as stagnators.

Among thrivers 65% are correctly classified. The highest rate of misclassification is into the intermediate group I.e.,. 13% are classified erroneously as intermediates.

The stagnators are fairly well classified with 48% being correctly classified. About one in five of these are incorrectly classified as dropouts, again indicating the similarity between dropouts and stagnators in terms of peer relationships and role models for dropout.

Discriminant analysis using wave 3 peer variables

The discriminant analysis using concurrent data confirms the basic findings described above. A majority of the peer variables are highly significant at beyond the .000 level when one-way ANOVA's are conducted. Only attachment to peers and social integration do not reach highly significant differences.

Classification accuracy using concurrent peer variables.

One discriminant function separates the groups when using concurrent data. This discriminant function as a canonical correlation of R = .65 and accounts for 96% of the discriminant information.

Interpreting the discriminant function: Once again the most important loadings on the discriminant function as indicated by structure coefficient are:

- Negative labeling by peers [.69]
- Emotional loneliness [.48]
- Affiliation with delinquent peers [.47]
- Dropout amongst friends [.29].

The group means for this discriminant function indicate that thrivers are at one extreme of the function. Stagnators are at the other extreme positive and the intermediate students are close to the overall grand mean. The stagnators and thrivers are almost two standard deviations apart from each other.

Classification accuracy using concomitant peer variables.

As expected there is a large jump in classification accuracy when using concurrent data. The overall percent of correct classifications rises to 60%. For the three groups the percentages correctly classified are:

- Thriving youth [71%].

TABLE: CLUSTER Z-SCORES FOR WAVE 3: PEER RELATIONSHIPS

Variable	Intermediates	Stagnators	Thrivers
ZW3B22	0.037	0.750	-0.608
ZW3B56	-0.086	0.265	-0.020
ZW3B57Z	-0.076	0.370	-0.258
ZW3B58	-0.009	0.152	-0.075
ZW3B59Z	-0.109	0.517	-0.371
ZW3B60	0.134	-0.641	0.331
ZW3B61	-0.111	-0.194	-0.1581
ZW3B63	-0.027	0.478	-0.507

Table: WILKS' LAMBDA AND UNIVARIATE F-RATIO WITH 2 AND 374 DEGREES OF FREEDOM: WAVE 3 PEER RELATIONSHIPS

VARIABLE	WILKS' LAMBDA	F	SIGNIFICANCE
ZW3B22	0.74094	65.38	0.0000
ZW3B56	0.98061	3.697	0.0257
ZW3B57Z	0.93976	11.99	0.0000
ZW3B58	0.99258	1.397	0.2485
ZW3B59Z	0.86051	30.31	0.0000
ZW3B60	0.85445	31.86	0.0000
ZW3B61	0.99861	0.2607	0.7706
ZW3B63	0.85347	32.10	0.0000

Table: CANONICAL DISCRIMINANT FUNCTION BASED ON WAVE 3 PEER VARIABLES

Function	Eigenvalue	Can.Corr.	Wilk's lambda	Chi.Sq.	Signif.
1	.733	0.65	0.56	213.6	0.000

<u>Table: STRUCTURE MATRIX: POOLED WITHIN-GROUPS</u>
<u>CORRELATIONS BETWEEN WAVE 3 PEER RELATIONS   AND</u>
<u>CANONICAL DISCRIMINANT FUNCTIONS</u>
(VARIABLES ORDERED BY SIZE OF CORRELATION WITHIN FUNCTION)
FUNC 1

ZW3B22	0.68557*
ZW3B63	0.47947*
ZW3B59Z	0.46649*
ZW3B57Z	0.29302*
ZW3B58	0.10006*
ZW3B60	-0.46752
ZW3B56	0.12608
ZW3B61	-0.01772

<u>Table: CANONICAL DISCRIMINANT FUNCTIONS EVALUATED AT</u>
<u>GROUP MEANS (GROUP CENTROIDS): WAVE 3 PEER RELATIONS</u>

GROUP	FUNC 1
1	-0.00806
2	1.42220
3	-0.91176

<u>Table: CLASSIFICATION RESULTS PREDICTING WAVE 3 TYPE</u>
<u>MEMBERSHIP FROM WAVE 3 PEER RELATIONSHIPS</u>

ACTUAL GROUP		NO. OF CASES	PREDICTED GROUP MEMBERSHIP 1	2	3
GROUP	1	166	75	34	57
			45.2%	20.5%	34.3%
GROUP	2	83	16	61	6
			19.3%	73.5%	7.2%
GROUP	3	128	27	10	91
			21.1%	7.8%	71.1%
UNGROUPED CASES		21	2	11	8
			9.5%	52.4%	38.1%

PERCENT OF "GROUPED" CASES CORRECTLY CLASSIFIED: 60.21%

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- Stagnating youth [73%]:
- Intermediate youth [45%]

In the latter group one in five are classified into the stagnating group while one in three are classified into the thriving group. These errors indicate the intermediate position and overlap that this group has with the more extreme positive and negative types.

Validating the School Bonding/Dropout typology against personal characteristics

This section examines the question of differences in personality characteristics between dropouts and the other three adaptations to high school. The data set contains several personality and interpersonal variables and offers the opportunity of examining differences between the types on personality patterns. This block of variables were entered into a discriminant function to further clarify type differences as an aspect of concurrent validity and to assess the ability of wave 1 personal variables to correctly classify students into their appropriate types. Both univariate ANOVA's were run, followed by multivariate tests of significant differences, and discriminant analysis.

Firstly, using the Z-scores for each group mean the following profiles based on the personality were developed. On this set of variables all univariate F ratios reach highs level of statistical significance at beyond the .000 level except for "value for independence".

Dropouts

Normlessness and Drug Use: Dropouts are characterized by

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extreme normlessness. They are fully 0.49 of a standard deviation above the overall sample average and have the highest score of all groups for normlessness. The stagnators also have an extremely high score [.36]. These findings are consistent with Strain and Control theories. Regarding drug use a highly significant difference exists between dropouts and stagnators versus the more positive students (F = 16.22, p = .000). The dropouts and stagnators show equally high levels of drug use; in both cases this is almost 0.7 of a standard deviation above the "thriving" students, who have the lowest levels of drug use.

Identity confusion and Internal Control: The stagnators and dropout groups are almost a standard deviation below the general mean for internal-external control, indicating very high powerlessness. This is consistent with their feelings of having no influence on what happens at school. They also have significantly high levels of identity confusion.

Self-esteem (general), Self Esteem as a Learner, and Interpersonal Competence: Dropouts and stagnators again have lower self esteem on Rosenberg's scale than the other two groups. This difference is highly significant (F = 9.6, p =.000). In self-esteem as a learner we again have a highly significant difference between the types. The thriving youth have significantly the highest score and dropouts have significantly the lowest score. The dropouts are fully 0.38 of a standard deviation below the general student average. Dropouts have low levels of interpersonal competence. They fall below the overall average on internal control.

Thriving successful students

Normlessness and drug use: Thrivers have the lower normlessness than all other groups [-0.42], the highest self-esteem, the highest self-esteem for being a learner, and the highest interpersonal competence [.32]. Finally in regard to drug use the successful student group has far and away the lowest level of drug use [-.47]. They are almost half a standard deviation below the general mean on drug use. They have the lowest level of impulsiveness [-.27].

Identity and Internal control: They are the least confused in regard to their identity [.44] and far and away the highest levels of internal control [.51]. They are fully half a standard deviation above all other groups for internal control.

Intermediate students

This group is intermediate between the successful students and the stagnating and dropout students on virtually all of these personal variables. The only atypical result was a significantly low score for drug use. However, they have slightly more drug use than the successful

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TABLE: MEAN Z-SCORES FOR WAVE 3 CLUSTERS: PERSONAL VARIABLES AT WAVE 1

Variables	Intermediates	Stagnators	Thrivers	Dropouts
ZW1B64	-0.114	0.365	-0.423	0.489
ZW1B65	-0.049	0.260	-0.332	0.239
ZW1B66	0.075	-0.251	0.483	-0.377
ZW1B67	-0.051	0.355	-0.322	0.344
ZW1B68	-0.042	-0.240	0.448	-0.450
ZW1B69	-0.039	-0.156	0.111	-0.101
ZW1B70	0.007	0.217	-0.269	0.034
ZW1B71	0.019	-0.446	0.505	-0.426
ZW1G16	-0.122	0.282	-0.467	0.241

Table: WILKS' LAMBDA AND UNIVARIATE F-RATIO WITH 3 AND 467 DEGREES OF FREEDOM: WAVE 1 PERSONAL VARIABLES

VARIABLE	WILKS' LAMBDA	F	SIGNIFICANCE
ZW1B64	0.88409	20.41	0.0000
ZW1B65	0.94179	9.622	0.0000
ZW1B66	0.90566	16.22	0.0000
ZW1B67	0.92776	12.12	0.0000
ZW1B68	0.90424	16.48	0.0000
ZW1B69	0.98972	1.617	0.1846
ZW1B70	0.96826	5.102	0.0018
ZW1B71	0.86791	23.69	0.0000
ZW1G16	0.90562	16.22	0.0000

TABLE: CANONICAL DISCRIMINANT FUNCTIONS FOR WAVE 1 PERSONAL VARIABLES AGAINST WAVE 3 TYPES

Function	Eigenvalue	Can.Corr.	Wilk's lambda	Chi-sq.	Signif.
1	0.41	0.54	0.68	173.6	0.000

students, although not as much as stagnating and dropout youth.

Stagnating youth
These youth have a profile that is essentially similar to that of dropouts.

Normlessness and drug use: They have significantly high levels of normlessness and for drug use. In fact, they have a slightly higher score for drug use than dropouts. This probably reflects the fact that these youth are older and have had further time to develop these negative behaviors.

Self esteem, internal control, and identity: They exhibit high scores for powerlessness, low self-esteem, low learner self-esteem, low interpersonal competence, and high scores for identity confusion.
They show the highest score for impulsiveness and risk taking and in fact are higher here than the dropout group.

Discriminant function analysis to clarify type differences
The school adjustment/bonding types were used as the criterion variable in a discriminant function with the personal variables being used as predictors. This analysis was replicated twice: once using the Wave 1 personal variables, and a second time using the Wave 3 personal variables. This analysis serves partly as a validation exercise to further examine the external validity of the typology, partly to further clarify differences between the types, and thirdly to assess the relative importance of the personal variables in correctly classifying students into their appropriate final type categories.

The power of the discriminant functions
All of the personal variables coalesced around one highly significant discriminant function. This discriminant function has the following properties:
- 93% of the discriminating information
- Canonical correlation R=0.54
- Highly significant: Chi-square=173.7 and P=.000

These findings again indicate that the types are significantly different on variables that were not used in their creation, and that personal characteristics successfully differentiate between dropouts and the other types of adaptation to high school.

Interpreting the discriminant function
The structure coefficients of the discriminant function indicate that the most powerful definers of this discriminant function are:
- Powerlessness (.60)
- Normlessness (-.55)

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- Learner self-esteem (.50)
- Drug abuse (-.49)
- Interpersonal competence [-.43]
- General Self-esteem [-.39],
- Identity confusion [.49].

This discriminant function separates youth who have feelings of poor self-esteem, poor learner self-esteem, normlessness, powerlessness, and drug abuse from those who are internally controlled, with high self esteem, clea: identity, and who are well socialized into conventional values.

In examining the four group means on the discriminant function dropouts and stagnators are at the extreme negative end [low self-esteem, powerless, etc.] with the thriving students at the other extreme. We note that these groups are almost one standard deviation above and one standard deviation below overall sample mean. The intermediate group is close to the overall mean (0.014).

Classification accuracy using personal variables.

Overall 46% of youth at wave 1 would have been correctly classified using their wave 1 scores. This is significantly above what would be expected by chance, and is consistent with the high significance of the Wilk's lambda coefficient.

As might the accuracy of classification varies across the different groups. Thrivers are very accurately classified - 71% of them would be classified into their correct final status using data collected at least two years earlier in time. The closest group is the intermediate type and as expected some of the youth (about 20%) are erroneously classified into this group.

The other groups are less accurately classified. Only 39% of stagnators would have been correctly classified. About 31% would have been classified as potential dropouts. This represents a group that would be predicted to drop out but who stay in school (although in a stagnating state).

Among dropouts 40% would have been correctly classified - thus 60% of dropouts would not have been identified using Wave 1 personal data. 28% of the actual dropouts would be classified as "intermediate" students and 19% as stagnators. 13% would have been classified as thriving youth.

Classification accuracy using contemporaneous personal data.

The same discriminant function was repeated using the most recent wave 3 data. Again, all of the one-way ANOVAS have highly significant F ratios and are significant at beyond the .00 level. Two

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significant discriminant functions emerged from this second analysis.

Discriminant function1
This has the following characteristics:
- Canonical correlation of R = 0.70
- 91% of the discriminating information
- The chi square = 326.0 ; significant at P=.000.

This first discriminant function serves to separate dropouts and stagnating youth from more successful youth. It has a highly similar set of structure coefficients and the same interpretation (normlessness, powerlessness, low self-esteem, drug use at one end, and positive orientations at the other).

The second discriminant function is much weaker. It has a canonical correlation of R=.26 and it adds only 6% to the explanatory discriminating information. It is uninterpretable and will be ignored since it accounts for such a small proportion of discriminating variance.

Classification accuracy using contemporaneous personal characteristics
The classification accuracy jumps to 61%. All groups are predicted at a much higher level using contemporaneous personal information.

Among thrivers 70% are correctly classified. However, 24% are classified as intermediates. Among stagnators, 68% are correctly classified although 25% are classified as intermediates. Turning to the intermediate group 50% are correctly classified with 16% and 33% being classified into stagnating and thriving groups respectively.

The numerous univariate significant differences, the high proportions of correct classification [61%] and the clear meaning and statistical significance of the discriminant function all indicate that the school bonding types are validly differentiated on personal characteristics.

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TABLE: STRUCTURE MATRIX: POOLED WITHIN-GROUPS CORRELATIONS BETWEEN WAVE 1 PERSONAL VARIABLES AND CANONICAL DISCRIMINANT FUNCTIONS

(VARIABLES ORDERED BY SIZE OF CORRELATION WITHIN FUNCTION)

	FUNC 1
ZW1B71	0.60456*
ZW1B64	-0.55574*
ZW1B66	0.49996*
ZW1G16	-0.49950*
ZW1B67	-0.43003*
ZW1B65	-0.38517*
ZW1B68	0.49145
ZW1B70	-0.26163
ZW1B69	0.15386

TABLE: CANONICAL DISCRIMINANT FUNCTIONS EVALUATED AT GROUP MEANS (GROUP CENTROIDS): WAVE 1 PERSONAL VARIABLES

GROUP	FUNC 1
1	0.01470
2	-0.78563
3	0.82213
4	-0.90315

TABLE: CLASSIFICATION RESULTS PREDICTING WAVE 3 TYPOLOGY FROM WAVE 1 PERSONAL VARIABLES

ACTUAL GROUP		NO. OF CASES	PREDICTED GROUP MEMBERSHIP			
			1	2	3	4
GROUP	1	186	60	28	61	37
			32.3%	15.1%	32.8%	19.9%
GROUP	2	97	19	38	10	30
			19.6%	39.2%	10.3%	30.9%
GROUP	3	141	24	9	100	8
			17.0%	6.4%	70.9%	5.7%
GROUP (Dropouts)	4	47	13	9	6	19
			27.7%	19.1%	12.8%	40.4%
UNGROUPED CASES		293	86	61	79	67
			29.4%	20.8%	27.0%	22.9%

PERCENT OF "GROUPED" CASES CORRECTLY CLASSIFIED: 46.07%

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TABLE: CLUSTER Z-SCORES FOR WAVE 3: PERSONAL VARIABLES

Variables	Intermediates	Stagnators	Thrivers
ZW3B64	-0.221	0.825	-0.439
ZW3B65	-0.017	0.503	-0.381
ZW3B66	-0.136	-0.400	0.465
ZW3B67	-0.068	0.537	-0.354
ZW3B68	-0.020	-0.543	0.495
ZW3B69	0.075	-0.320	0.114
ZW3B70A	-0.075	0.548	-0.385
ZW3B71	0.002	-0.561	0.501
ZW3G16	-0.102	0.618	-0.410

TABLE: WILKS' LAMBDA AND UNIVARIATE F-RATIO WITH 3 AND 426 DEGREES OF FREEDOM: WAVE 3 PERSONAL VARIABLES

VARIABLE	WILKS' LAMBDA	F	SIGNIFICANCE
ZW3B64	0.71112	57.69	0.0000
ZW3B65	0.87098	21.03	0.0000
ZW3B66	0.87958	19.44	0.0000
ZW3B67	0.88189	19.02	0.0000
ZW3B68	0.84462	26.12	0.0000
ZW3B69	0.96835	4.641	0.0033
ZW3B70A	0.85608	23.87	0.0000
ZW3B71	0.80446	34.52	0.0000
ZW3G16	0.83580	27.90	0.0000

TABLE: CANONICAL DISCRIMINANT FUNCTIONS: WAVE 3 PERSONAL VARIABLES

Function	Eigenvalue	Can.Corr.	Wilk's lambda	Chi Sq.	Signif.
1	0.979	.70	0.461	326.3	0.000
2	0.07	.26	0.914	37.81	0.001

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TABLE: STRUCTURE MATRIX: POOLED WITHIN-GROUPS CORRELATIONS BETWEEN WAVE 3 PERSONAL VARIABLES AND CANONICAL DISCRIMINANT FUNCTIONS

(VARIABLES ORDERED BY SIZE OF CORRELATION WITHIN FUNCTION)

	FUNC 1	FUNC 2
ZW3B64	0.62371*	0.57433
ZW3B71	-0.49306*	0.22718
ZW3G16	0.44610*	0.14491
ZW3B68	-0.42607*	0.27986
ZW3B70A	0.41222*	0.07911
ZW3B65	0.38583*	-0.06492
ZW3B66	-0.34016	0.57282*
ZW3B69	-0.15297	-0.20244
ZW3B67	0.36494	0.06825

TABLE: CANONICAL DISCRIMINANT FUNCTIONS EVALUATED AT GROUP MEANS (GROUP CENTROIDS): WAVE 3 PERSONAL VARIABLES

GROUP	FUNC 1	FUNC 2
1	-0.07941	-0.29549
2	1.53575	0.19400
3	-1.01759	0.25466
4	5.77316	0.44304

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TABLE: CLASSIFICATION RESULTS - PREDICTING WAVE 3 TYPE MEMBERSHIP FROM WAVE 3 PERSONAL VARIABLES

ACTUAL GROUP		NO. OF CASES	PREDICTED GROUP MEMBERSHIP			
			1	2	3	4
GROUP	1	187	93	31	63	
			49.7%	16.6%	33.7%	0.0%
GROUP	2	100	25	68	3	4
			25.0%	68.0%	3.0%	4.0%
GROUP	3	142	35	7	100	0
			24.6%	4.9%	70.4%	0.0%
GROUP	4	1	0	0	0	1
Dropouts			0.0%	0.0%	0.0%	100.0%
UNGROUPED CASES		23	7	13	3	0
			30.4%	56.5%	13.0%	0.0%

PERCENT OF "GROUPED" CASES CORRECTLY CLASSIFIED: 60.93%

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CHAPTER 7

SELECTED DEMOGRAPHIC DIFFERENCES BETWEEN
SCHOOL ADJUSTMENT TYPES

Demographic characteristics
of the types

Sex

A cross classification of the typology against sex indicates a significant relationship between sex and type of school bonding. Pearson's correlation is significant at P=.005 (chi square = 12.8).

Boys are disproportionately found in the intermediate and stagnating types. The standardized residual scores for these cells of the contingency table are +.5 and +1.7, respectively, indicating that boys have a far higher likelihood of entering into these adaptations than girls.

Girls, conversely, disproportionately enter the two extreme types i.e., thrivers or dropouts. The respective standardized residuals for girls are +1.7 for thriving and +0.8 for dropping out. They are less likely to fall in the intermediate group, with a residual of -0.5 Thus, girls seem to adapt in slightly more extreme ways than boys - either being highly socially bonded and conventional, or, if they do become rebellious and lose committment to school they simply dropout more readily. Specifically, 11.6% of girls in this sample drop out versus 8.6% for boys. However, this tendency is weaker than the tendency of girls to disproportionately become thrivers.

Ethnicity

This sample is disproportionately composed of Anglo-American and Hispanic-American youth. Afro-American youth had a lower response rate and are therefore under-represented in this sample However, a sufficient number of Afro-American responded so that all four of the major profiles are represented for this ethnic group.

The overall statistical significance tests suggests no clear connection between ethnicity and the various types of school bonding. Although the overall significance test does not reach statistical some trends within the cells of the contingency table may be noted.

1. Asian-Americans: Amongst the small group of Asian-Americans there is a disproportionate absence of intermediates(-1.4) and a disproportionately high number of thrivers (+1.4). The very small number of Asian-American subjects, however, although randomly selected, suggests caution in making firm conclusions about this result. However, this finding is consistent with the high academic success of such students as reported in other studies.

2. American-Indians: These are disproportionately stagnators

(+1.1) and dropouts (+2.0). Disproportionately few of these youth are found in the thriving group (-1.6). Again, this is a small group and strong conclusions will not be drawn from this finding.

3. Hispanic: A disproportionately high number of Hispanic youth fall into the stagnation group (+1.1) and a disproportionately small number are thrivers (-0.60). Overall 25.3% of Hispanic youth adopt the stagnating stance toward school, compared to 21% for the overall sample, and 18.4% for Anglo students.

4. Afro-American: There is no strong trend in this sample for black youth. They have a slightly higher dropout rate than the overall sample (11.1% versus 10.0%). However, the relatively small subsample of black youth and the low response rate from the low achieving academic strata suggests that this figure should be treated with caution.

5. Anglo-American youth: A disproporionately large percentage of Anglo youth are intermediates (+1.2) and, more positively Anglos avoid stagnation (-.f and dropout (-.9) more than other major ethnic groups.

Cautionary note: It must be noted that the _overall_ contingency table does _not_ reach statistical significance and that the ethnic statements are specific to certain cells in the contingency table. Secondly, the object of this study was not focussed on specific ethnic comparisons, but rather to assess the process of erosion and loss of committment to high school.

The trends noted in specific ethnic cells of the contingency table would have to be analysed in conjunction with other factors (e.g.,. social class, poverty levels, etc.) to fully clarify ethnic differences. Furthermore, the small sample size of certain groups (Asian-Americans, Indian-Americans, and to a lesser extent Afro-Americans), suggests that these findings must be regarded as tentative, and not taken as conclusive.

Intact v. single parent family

This cross classification examines the importance of the presence or absence of both parents in the household of the youth. Overall, 46.7% of this population do not live with both natural parents.

As expected, there is a very strong relationship between the presence of both parents and the youth's school adjustment status. Pearson's correlation coefficient reaches a high level of significance (Chi-square =19.7, P=.0001 with 3 degrees freedom,).

The basic finding is that if the youth lives with both parents he or she has a disproportionate tendency to be a thriver (+1.6). If both parents are present 35% of these youth are thrivers versus 23% % among youth who live with only one natural parent.

In regard to dropping out we find the strongest relationship in this contingency table. When both parents are present the youth the

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disproportionately avoid dropout (-2.5). Specifically, 15.1% of youth living with one parent dropout versus 5.1% among youth living with both parents.

Similarly, the data suggest that youth from single parent families tend to disporportionately fall into the intermediate and stagnating groups. For example, 19.5% of youth from intact families fall into the stagnating group versus 22.7% of youth with a single parent. Thus the major influence of family stability appears to occur at the thriving and dropout ends of the typology.

Handicap status v. nonhandicapped

Being handicapped has a highly significant relationship to the four adaptations to school. For Pearson's coefficient, the chi-square of 18.09, with 3 degrees of freedom is significant at $p = .0004$. This indicates a strong relation between having a handicapping condition and psychosocial adaptation to high school.

More specifically, the table indicates that the presence of a handicap disproportionately places a youth into the stagnating group (3.2). This standardized residual of 3.2 is the strongest result in the table and thus is mainly responsible for the overall statistical significance of the table. The data indicate that among youth with a handicap 36% are in the stagnating group, compared to 17.4 % of non-handicapped youth. Similarly, handicapped students are disproportionately under-represented in the thriving group (-2.0). Only 18.6% of handicapped youth fall in this category versus 32.2% for non-handicapped youth.

The relationship between being handicapped and dropout rate indicates no disproportionate levels. Thus, the dropout rate among handicapped students is essentially similar to that of the overall sample (9.5% versus 10%) over the 3 years of this study.

Among intermediate students there is no strong relationship to handicapped status. Overall 40.5% of non-handicapped students are intermediates, versus 36% among handicapped students. Thus about one in three handicapped students fall into the intermediate category.

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CHAPTER 8

PATTERNS OF CHANGE ACROSS HIGH SCHOOL:
LONGITUDINAL ANALYSIS

Longitudinal career patterns of
high school students

This chapter examines patterns of change and development of different types of students across the high school years. The aim is to describe and contrast trends in the development of committment bonding beliefs and attitudes, and school behavior from 9th through the12th grade. We also aim to discover and contrast the particular tends which are associated with dropout versus staying and thriving youth.

To facilitate interpretation all scores for specific variables are transformed into z scores. This places all variables on an identical unit of analysis and renders all groups and variables directly comparable. Secondly, all waves of the data are pooled in this analysis. This provides z scores for students in each grade level. This allows the z scores of different grade levels to be directly compared with each other. Thus, the z scores in this analysis are standardized across time, as opposed to the z scores prepared for specific waves where standardization occurred within particular waves. Pooling across waves clarifies the transitions from one wave to the next.

Note: It is important to note that the typology at the final wave is not a "predictive" typology, and does not create optimally separated "extreme" groups on any single criterion variable. It is a descriptive typology [Sokal and Sneath 1963] and was created by grouping multidimensional vectors using overall similarity. In fact, a 23-dimensional pattern of bonding and school behaviors was used to create this typology. Thus, backwards regression to the mean effects - which can occur in longitudinal panel studies - should be minimized when examining any particular single variable, since there was not attempt to create extreme groups on such a variable. This multidimensional approach to grouping can be contrasted to the more conventional approach of deliberately creating "extreme" groups using high and low cutting points on a single continuous variable e.g.,grade point average. This latter approach is likely to suffer far more severe problems of regression to the mean (Campbell and Stanley,1986). However, the trends below must be seen as provisional because of the possibility of some regression effects. Additional analysis will be conducted on these trends to assess their corrected magnitude for both unreliability of measurement as well as regression effects (Hopkins, 1990).

Bonding to High School

In this section we examine changes in bonding to school of the four student types across grades 9 thru 12. The four groups at each grade are based on the final type membership at wave 3, and as noted above, Z-scores are computed for each grade level.

Educational aspirations
At entry into ninth grade, the dropouts and stagnators are already significantly separated from the middling and thriving groups regarding educational aspirations. The four groups are separated by slightly over half a standard deviation on educational aspirations. However, there is no significant difference between the two top groups and between dropouts and stagnators. Each pair is essentially similar. Thrivers have the highest score while dropouts and stagnators are virtually distinguishable at the low level of aspirations. At wave 1 this difference is highly significantly different [F=25.18, p=.000].

In the 10th grade there is a dramatic lowering of educational aspirations of both dropouts and stagnators. They fall to almost 0.7 of a standard deviation below the overall mean. The stagnators continue this downward spiral so that by 12th grade their aspirations are fully 1.5 Z-scores below the overall mean.

The thrivers and the middlers maintain above average aspirations throughout their high school careers. Thrivers remain the top group at all grade levels. The middling group shows a very slight and slow decline between 9th and 12th grades.

The dropout pattern shows an anomalous upwards improvement between 10th and 11th grades. However, this is because those who dropped out between 10th and 11th grade had extremely low aspirations, leaving a group in the 11 grade with somewhat higher (although still below average) aspirations. This suggests that early dropouts are characterized by fast and severe erosion of aspirations - compared to later dropouts.

While the four groups were separated by about 0.75 Z scores at 9th grade this widens to almost 2 complete Z score. This indicates that the erosion of aspirations across high school is steady and significant between the stagnating/dropout groups and the two more successful groups of students.
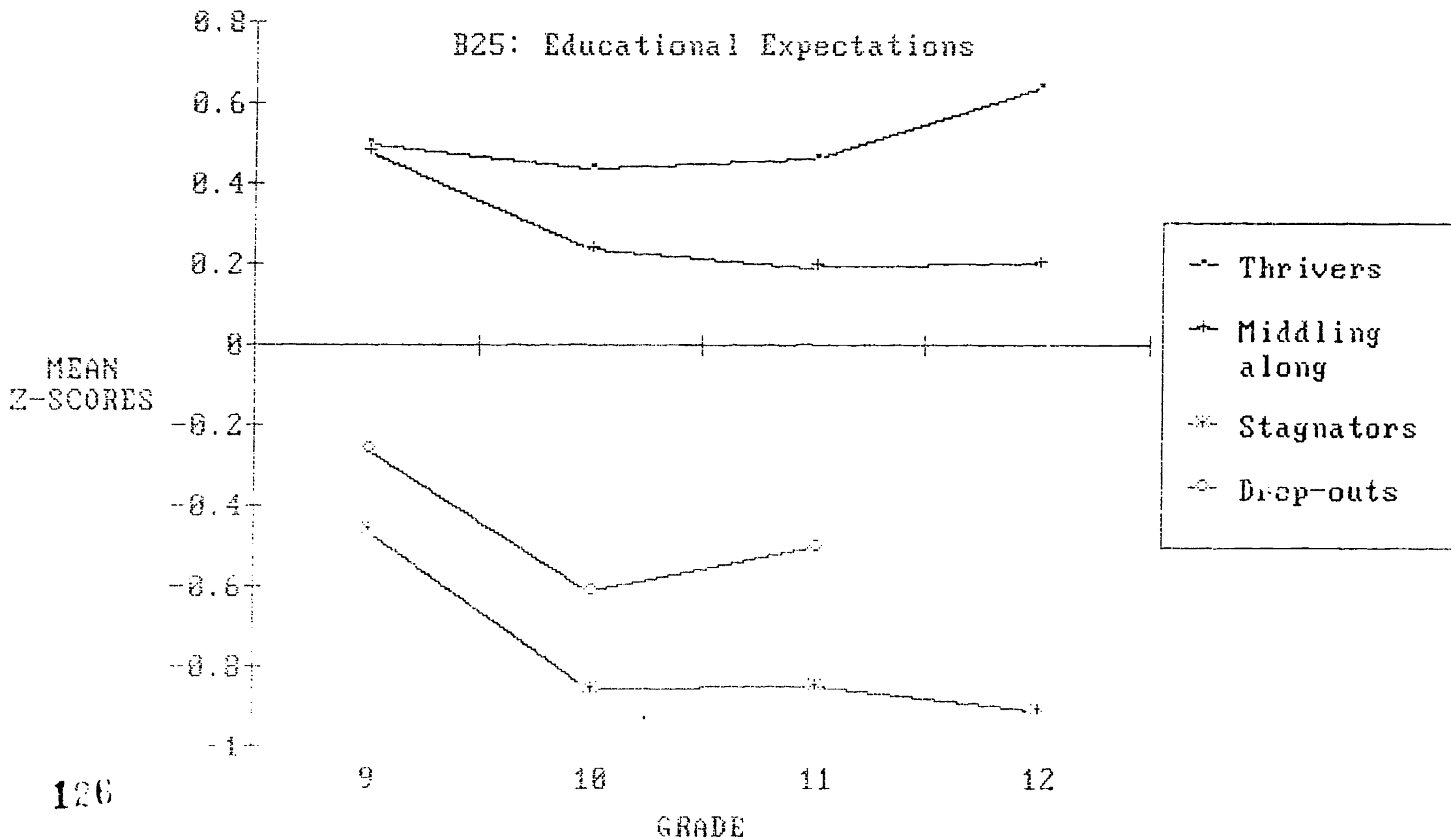
Educational expectations
In the 9th grade the four groups again are already highly significantly different regarding educational expectations. Thrivers and

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B24: Educational Aspirations

MEAN
Z-SCORES

Legend:
- Thrivers
- Middling along
- Stagnators
- Drop-outs

GRADE

125

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B25: Educational Expectations

MEAN
Z-SCORES

0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1

Legend:
-·- Thrivers
-+- Middling along
-*- Stagnators
-◇- Drop-outs

GRADE
9   10   11   12

middlers are essentially indistinguishable with scores of about .5 of a Z score above average. Dropouts and stagnators are significantly below the overall mean with around - 0.2 and -0.4 Z scores below average.

In grades 9 thru 12 there is an erosion of expectations for all groups except thrivers. Dropouts and stagnators, lose expectations rapidly between 9th and 10th grades. An apparent slight rise in the expectations between 10th and 11th grades is again due to the dropouts with the lowest expectations leaving after our 10th grade testing. This leaves a group of soon-to-be dropouts with slightly higher expectations - although again significantly below average and still falling.

By 12th grade the z scores differences increase to 1.3 standard deviations scores. At the 9th grade this difference was around 0.7 to 0.8 Z-scores between top and bottom groups. Thus, this analysis suggests that expectations fall steadily across the high school years for all groups except thrivers, and that the difference roughly doubles by 12 grade.

Belief in the ideology of education

Thrivers in 9th grade show a very clear belief that education will help them achieve a good future. They hold this belief to a much stronger degree than the other groups. They are fully 0.6 Z-scores above the overall mean while the other 3 groups cluster slightly above and below the overall mean. This spread is already highly significantly different.

In the following years thrivers maintain this higher belief in education, and, in fact, escalate upwards slightly by 12th grade. By 12 grade the spread doubles to 1.6 Z-scores between the lowest [stagnators] and the highest [thrivers] with the middling group remaining close to the overall population mean.

A critical point to note is that erosion of Belief in Education occurs basically only for the two lower groups (ie., Stagnators and Dropouts). The erosion of Belief is rapid for stagnators between 9th and 10th grades. For Dropouts the score pattern is a more complicated due to attrition. Thus, the dropout group in each grade are not exactly comparable, with each wave being a subset of each preceding wave.

The trend for dropouts is downwards, so that "late dropouts" who were still in school at11th grade are fully .6 of a z score below the overall mean. These late dropouts, however, have diverged downwards away from middlers and thrivers. The flat line for dropouts between 9th and 10th grades is best interpreted as indicating that the most serious dropouts lose belief in education rapidly and leave high school earlier. This again leaves a slightly smaller dropout group where erosion has not yet occurred so fast or severely. However, these latter dropouts then exhibit the same disillusionment with education by the middle of the 10th and 11th grade, and leave high school during 11th grade.

B26: Ideology of Education

MEAN
Z-SCORES

Legend:
- Thrivers
- Middling along
- Stagnators
- Drop-outs
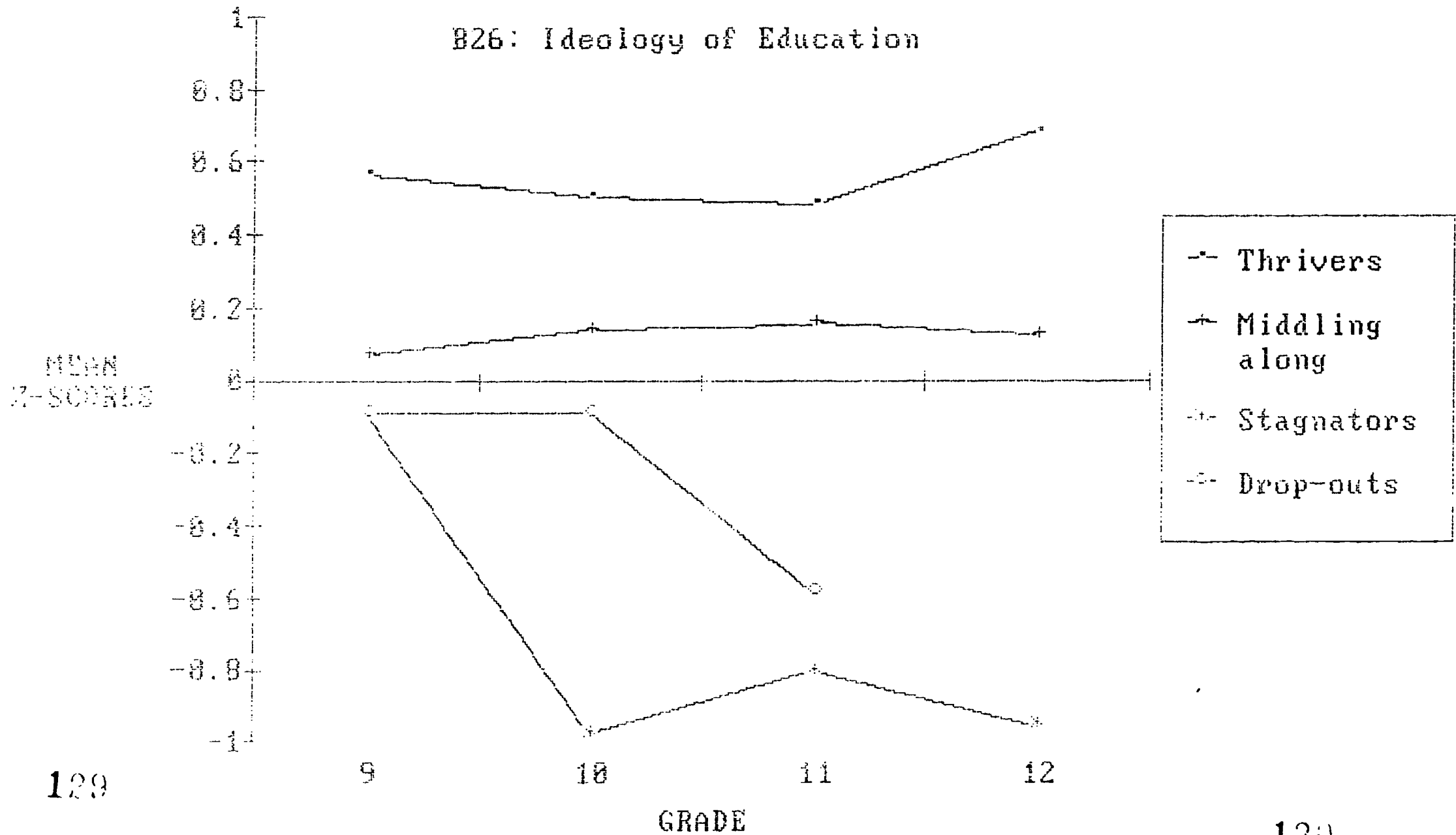
GRADE

Belief in fairness of High school rules

Again, in the 9th grade all four groups are highly and significantly different regarding belief in fairness of rules. Dropouts and stagnators fall around 0.2 Z-scores below the overall population mean. Thrivers have   very high belief in fairness and are 0.7 Z-scores above the mean. Middlers are slightly above the sample mean [+0.2]. The large significant difference in 9th grade [F=11.05, p=.000] suggests that this profound divergence has occurred prior to entry into high school.

In the ensuing high school years all groups show a decline in belief in fairness. Surprisingly, this loss of belief in fairness is also shown by the thriving group who fall from +0.7 to +0.5 Z-scores above the sample mean. The erosion of belief in fairness of the two top groups means that they essentially stay in parallel although, while both fall rapidly during the first two years of high school. The stagnating and dropout groups start with lower scores for belief in fairness which then sinks to lower levels over the high school years.

Tolerant attitude to dropping out

In 9th grade thrivers have significantly the lowest tolerance of dropout [-0.6], with middlers showing a moderately negative score [-0.2], and Dropouts and stagnators being basically indistinguishable at an above average level [+0.2]. These 9th grade differences are highly significant. [F=16.26, p=.000].
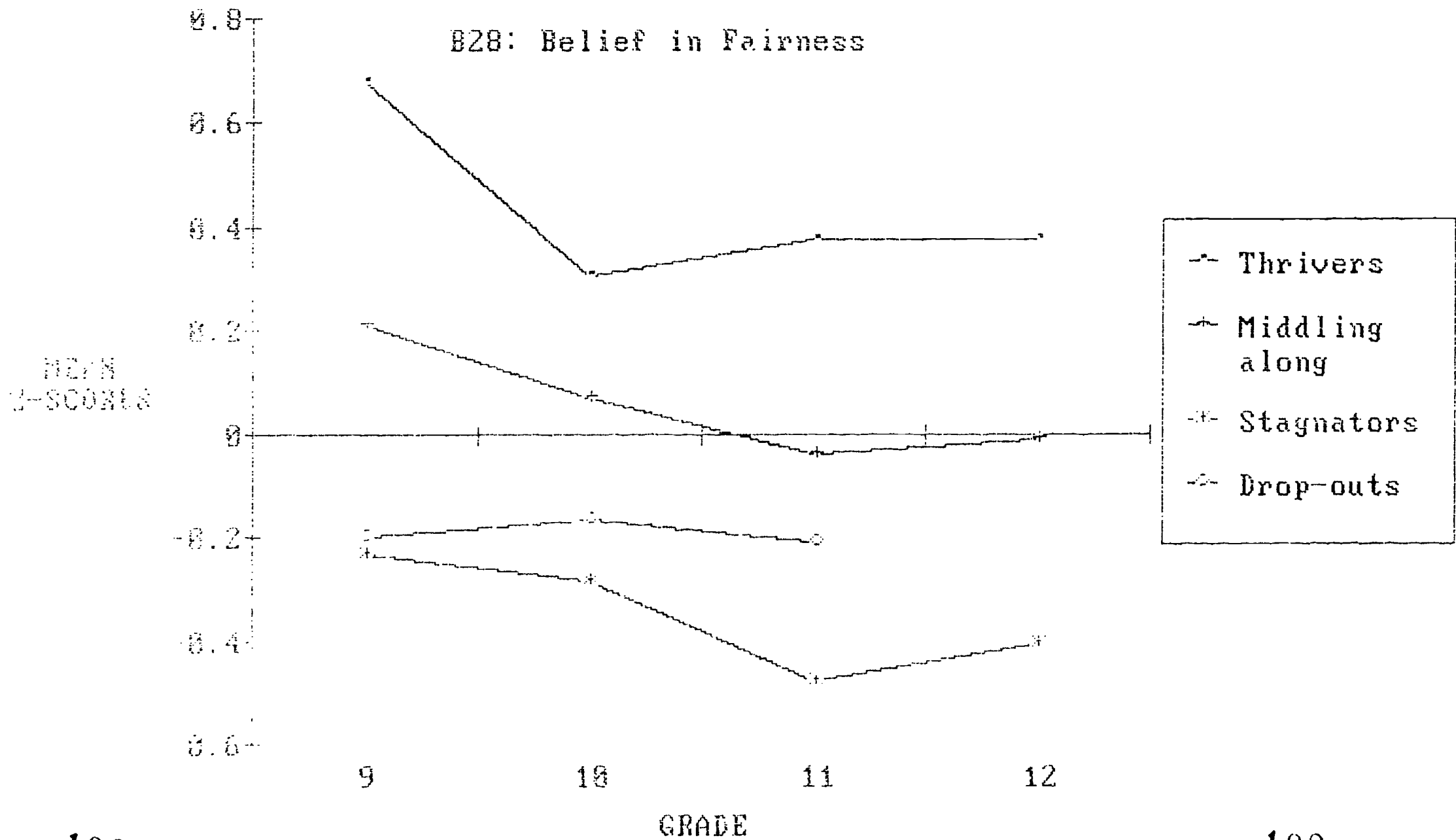
The change in this aspect of commitment bonding occurs most rapidly between 9th and 10th grades, with a rapid escalation of acceptance of dropout by the 10th grade testing. At this point dropout and stagnators were already +0.6 and +0.9 above the overall mean scores. This analysis suggests that although these different classes of youth are already significantly different in the 9th grade, the divergence is most rapid in the earliest stages of high school
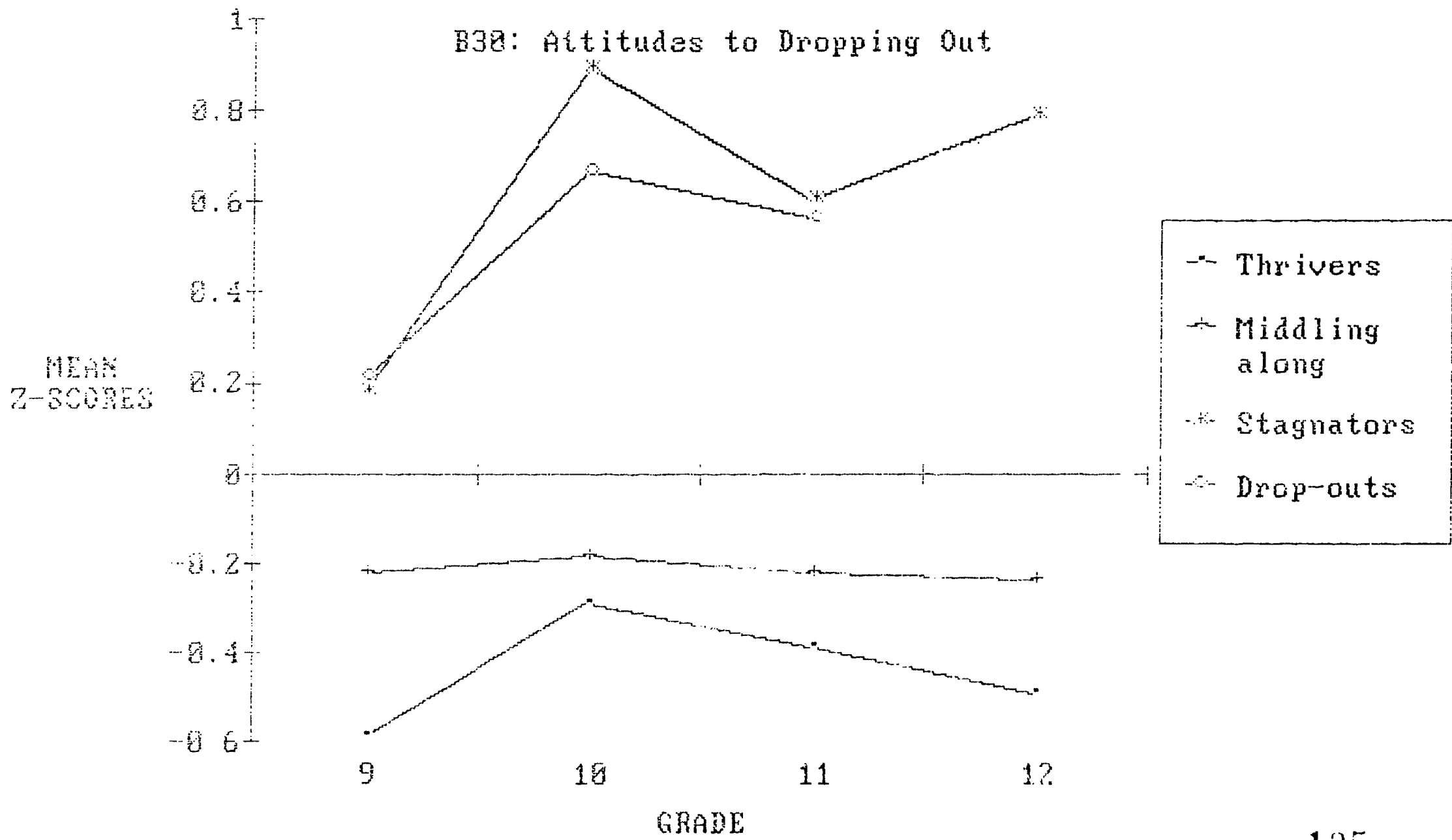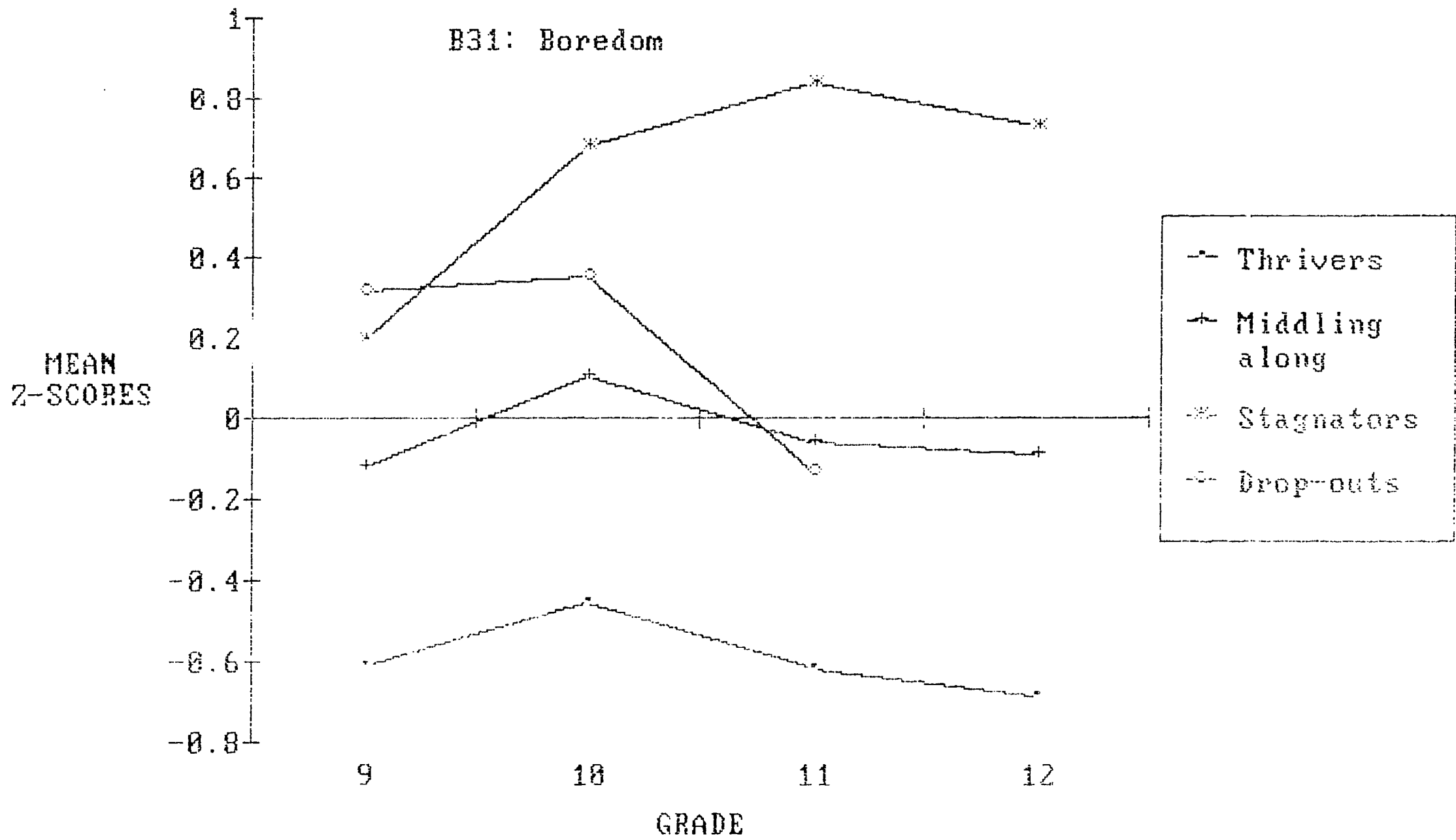
Boredom at school

Thriving students, quite consistently, from 9th through 12th grade have the lowest levels of boredom. They score -0.6 in 9th grade and close to -0.7 by 12th grade. The other three groups are 0 .5 and more standard deviation units above this. The middling group hovers around zero for the complete high school career. These differences are highly significant in 9th grade and become increasingly significant during the course of high school. The spread between the groups at 9th grade is approximately 0.9 Z scores. By 12th grade this spread shows a dramatic rise to approximately 1.6 Z scores.

The most striking trend is shown by stagnators with a dramatic rise in boredom from 9th through 12th grade. In 9th grade their score is +.02 which escalates to +0.8 standard deviation units by 12th grade. Again,

B28: Belief in Fairness

B30: Attitudes to Dropping Out

MEAN
Z-SCORES

Legend:
- Thrivers
- Middling along
- Stagnators
- Drop-outs

GRADE

B31: Boredom

MEAN
Z-SCORES

Legend:
- Thrivers
- Middling along
- Stagnators
- Drop-outs

GRADE

136

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the most rapid rise occurs between 9th and 10th grades. Dropouts again have an anomalous trend. In 9th grade dropouts are essentially identical to stagnators. They then show an apparent decrease in boredom by 10th grade. However, this is due to attrition, whereby the most bored dropouts leave first. The remaining dropouts are less bored, but their boredom also escalates and they dropout later in high school.

Behavioral adaptations and styles across High School

In this section we examine various behaviors in high school which reflect bonding and adjustment to education and high school. These behavioral adaptations reflect the concept of integration bonding. Any erosion of integration bonding would again be theoretically expected to precede and predict eventual dropout.

Normless behavior in high school [cheating, etc.]

In the 9th grade the groups are already highly and significantly different in normless behavior [F=17.3, p=.000]. Thus, we can presume that the causes of this divergence precede the high school experience.

Thrivers have the lowest score for normless behavior (-0.4) while stagnators and dropouts are significantly above average (+0.3 and +0.1 respectively). Cheating, and so on, becomes more intense for the both stagnators and middlers between 9th and 10th grades. Thereafter these two groups remain in parallel.

Dropouts again show a shifting trend due to attrition i.e., early and late dropouts leaving at different stages of high school. The curve for dropouts implies that early dropouts have the highest normlessness. When these dropout, the score for the remaining dropout group jumps markedly between 10th and 11th grades - indicating that later dropouts show a slower pattern in developing normless school behavior.

A most interesting trend is shown by middlers (i.e.,. a relatively conventional group) which shows a definite increase in unethical normless behavior. This rises from -0.2 Z scores in the 9th grade to almost +.2 Z scores by 12th grade.
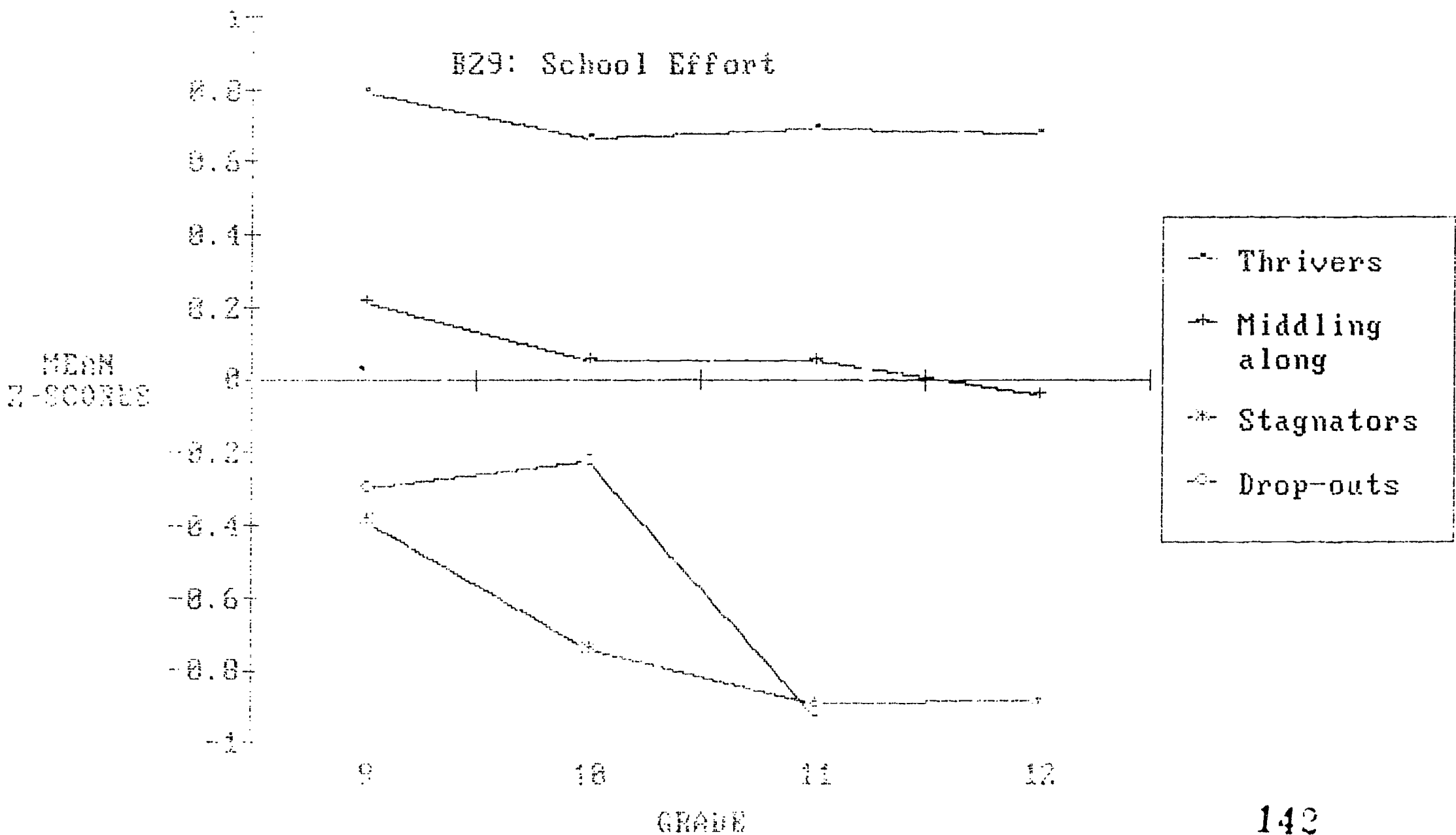
School effort.

Thrivers enter high school with high diligence and commitment to work. Their school effort score in 9th grade is 0.8 standard deviation units above the overall mean. They are clearly and significantly

B40: Normlessness at School

MEAN
Z-SCORES

Legend:
- ·- Thrivers
- +- Middling along
- *- Stagnators
- ◇- Drop-outs

Y-axis: 0.8, 0.6, 0.4, 0.2, 0, -0.2, -0.4, -0.6

X-axis (GRADE): 9, 10, 11, 12

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B29: School Effort

Legend:
- Thrivers
- Middling along
- Stagnators
- Drop-outs

MEAN Z-SCORES (vertical axis, values from -1 to 1)

GRADE (horizontal axis: 9, 10, 11, 12)

distinguished from the other 3 groups [F= 43.76, p=.000]. They maintain this higher level of schoolwork throughout high school. There is a slight decline in Z scores so that by 12th grade they are about 0 .6 standard deviation units above the overall mean. By contrast, middlers are only +0.2 above the mean at the 9th grade and fall close to 0 by 12th grade indicating a slow decline in their work levels.

Trends for stagnators and dropouts show initially low 9th grade scores illustrating an unwillingness to put effort into school work. This level then erodes further between 9th and 11th grades. By the 11th grade both of these groups are fully -1.0 Z scores below the overall mean.

School effort is an area where a large divergence occurs. In 9th grade the four groups are separated by 1.2 standard deviation units. By 12th grade the spread is 1.7 Z scores. This increasing divergence is largely due to the reduced efforts of dropouts and stagnators.

Drug use

By 9th grade the stagnators and dropouts already have the highest self reported drug use. The middling and thriving groups show significantly less self-reported drug use in the 9th grade than in the above two groups. These early differences are significant [F=28.78,p=.000] and this pattern continues throughout high school.
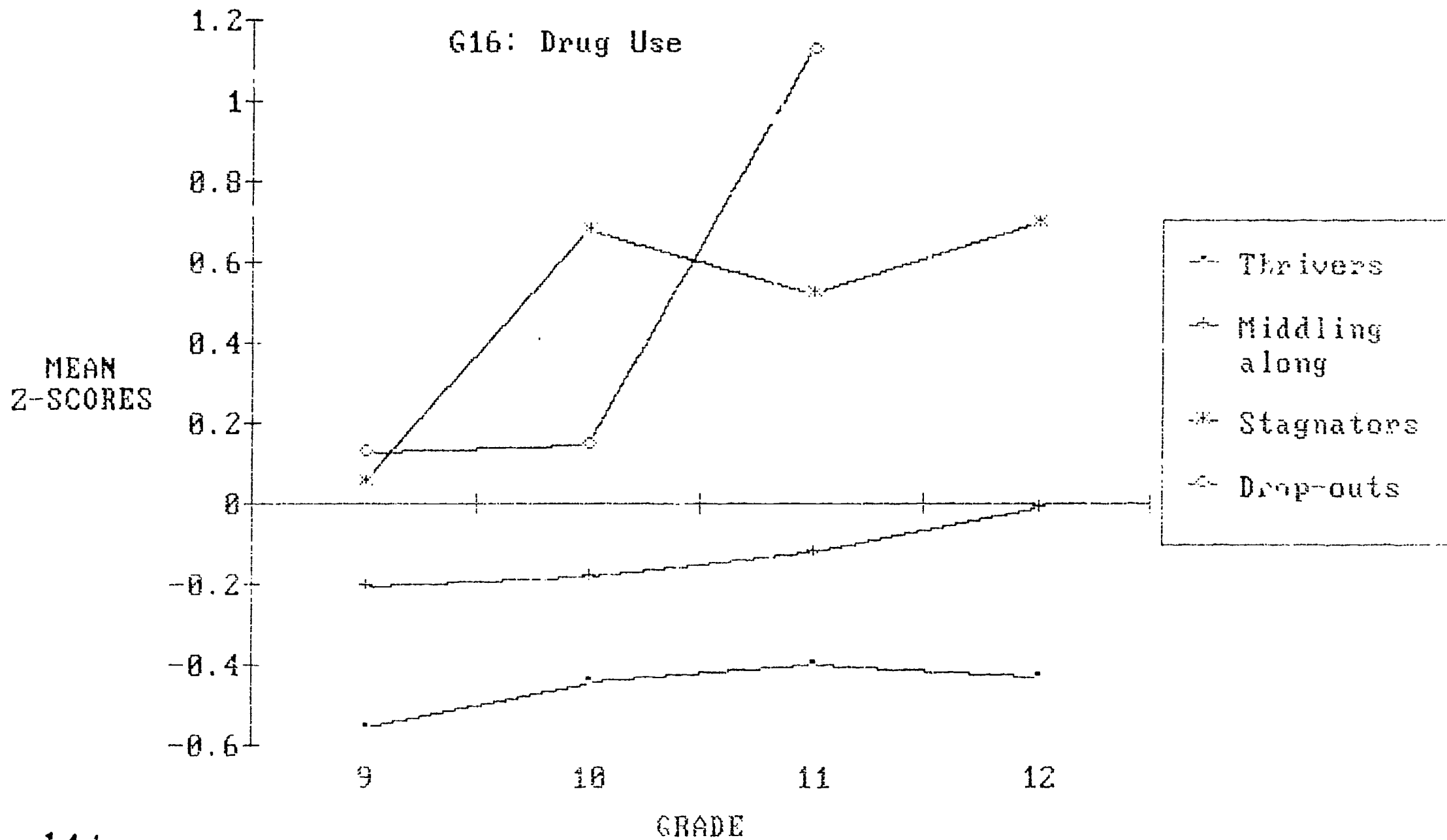
The initial spread in drug use, although significant, pails in comparison to the later divergence occurring during 10th and 11th grades. Between 9th and 10th grade, there is a dramatic increase in self-reported drug use in stagnators. The same process happens for dropouts, although the 10th grade scores for dropouts show only a slight increase which stems from the fact that the more serious drug using dropouts leave early between 9th and10th grades. The remaining dropouts show a dramatic increase in drug use by the 11th grade. Thus, the data suggests that both dropouts and stagnators share a dramatic and significant upward trend in drug use taking place between the 9th and 10th grades.

The conventional groups show only a very minor increase middlers rise from -0.2 z scores below the population mean in 9th grade to a szero in 12th grade. The conclusion of the self-reported drug use graph is that the increase in drug use is confined only to stagnators and dropouts and does not occur among the 2 conventional groups. The second conclusion is that drug use increases dramatically during 9th and 10th grades.
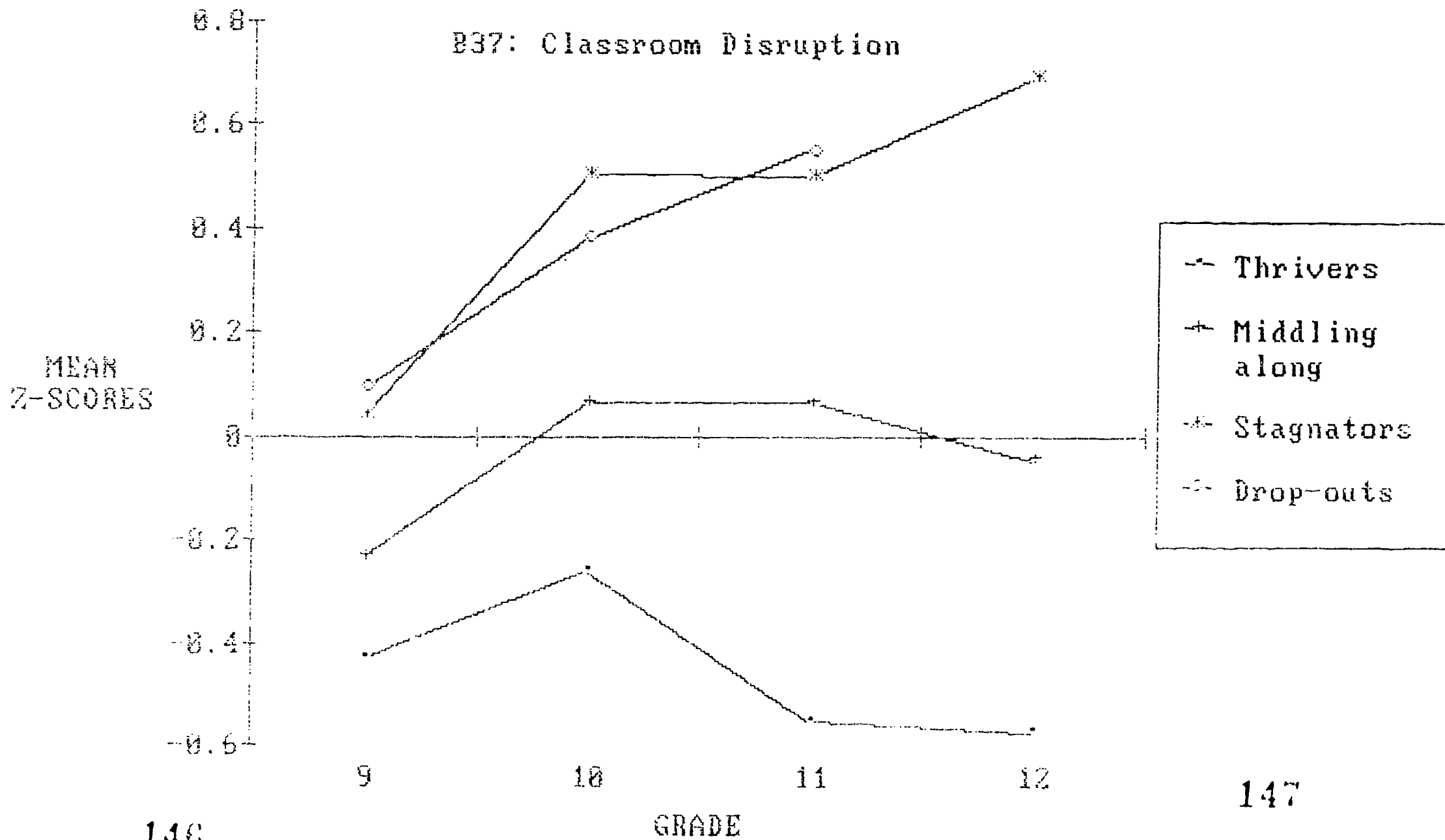
Classroom disruption

In the 9th grade dropouts and stagnators as expected have the highest levels of classroom disruption, although this is only about 0.1 standard deviation above the mean. Middlers and thrivers are -.02 and
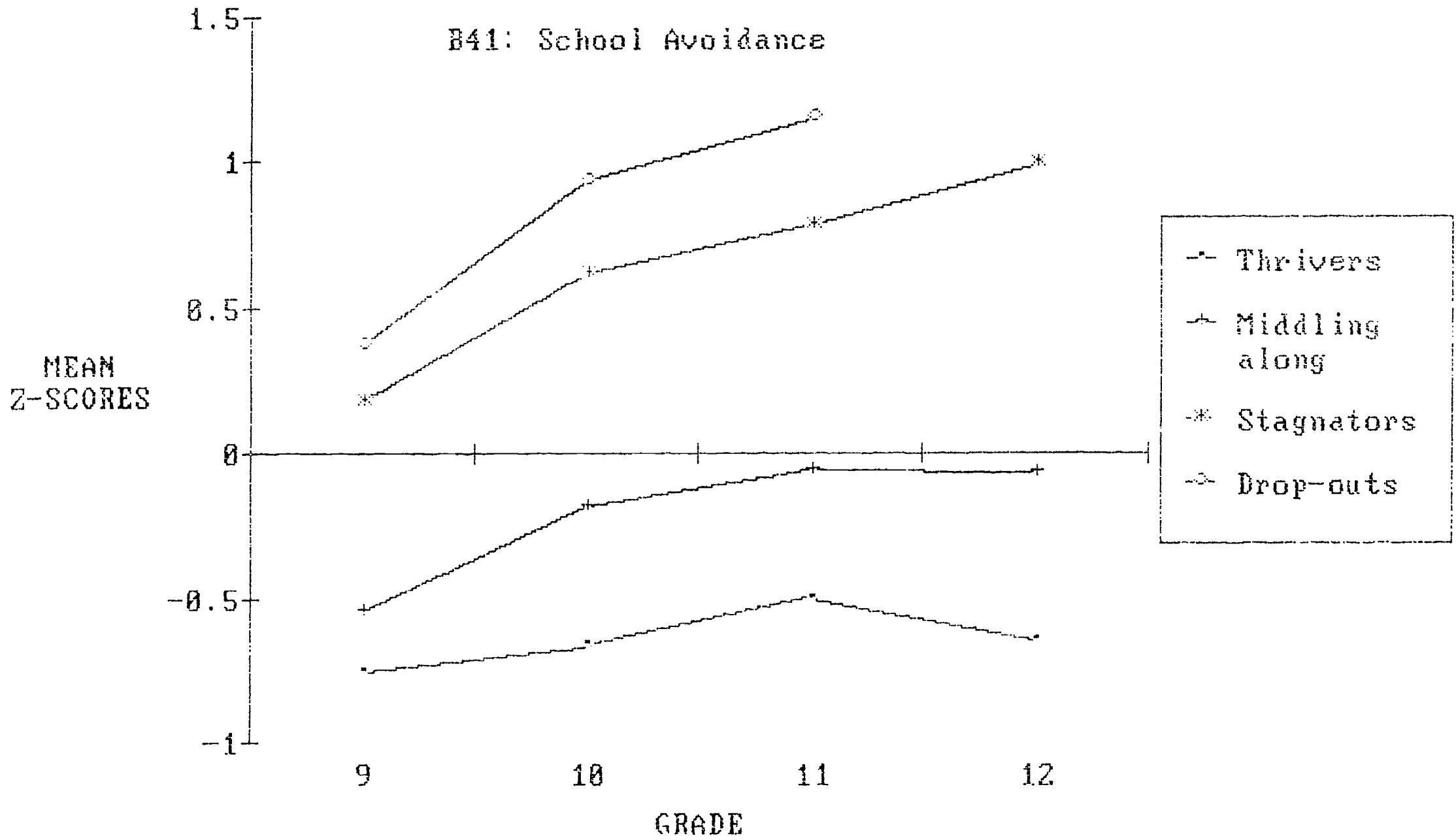
103

G16: Drug Use

MEAN Z-SCORES

Legend:
- Thrivers
- Middling along
- Stagnators
- Drop-outs

237: Classroom Disruption

MEAN
Z-SCORES

Legend:
- Thrivers
- Middling along
- Stagnators
- Drop-outs

GRADE

146

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B41: School Avoidance

MEAN Z-SCORES

Thrivers
Middling along
Stagnators
Drop-outs

GRADE

around -0.4 respectively. These differences are highly significant [f=12.33, p=.000] in this first wave of testing.

The divergent trends across the high school years in level of disruption are startling. Dropouts and stagnators move steadily upward in disruptive classroom behavior. Thrivers fall from -0.4 at 9th grade to -0.6 standard deviation units by 12th grade. The spread of all groups at the 9th grade is around 0.5 standard deviations. By 12th grade this spread is approximately 1.3 standard deviation units.

A further noteworthy issue is that all groups except thrivers have a steady increase in classroom disruption, while thrivers steadily decrease. Dropouts and stagnators are not distinguishable.

School avoidance

In 9th grade the four groups essentially break into two pairs. Dropouts and stagnators have higher levels of school avoidance, scoring +0.2 and +0.4 z scores above the mean. At the opposite extreme middlers and thrivers have very low scores for school avoidance of -0.5 and -0.75 z scores below the overall sample mean. At this stage in 9th grade these differences are highly significant [F=35.35, p=.000].

The trends for school avoidance are simple and fall in line with expectations. Dropouts and stagnators show a steady increase with each year. Dropouts rise from +.4 z score above the overall mean in 9th grade to almost +1.1 z scores above the overall mean by the 11th grade. The stagnators are not quite as extreme however, rising from around +0.2 to around +0.8 z scores above the mean.

The two positive groups exhibit slight increases in school avoidance - although at all grade levels they remain far lower than the sample average. A slight divergence occurs between thrivers and middlers. At 9th grade they are only 0.2 z scores different from each other. However, by 12th grade they are about 0.5 z scores apart, suggesting a slight divergence. The middlers fall towards the overall sample while thrivers maintaining an extreme diligence regarding school attendance.

Experience of selected aspects
of School Climate

In this section we examine selected aspects of the students experiences in the school. Full testing of these differences are reported in ANOVA and Discriminant Function analyses. However, not all of these aspects were graphed - since graphing is simply for presentation purposes.

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Punishment at school

Punishment steadily rises for most groups across the high school years. Even thrivers escalate from -0.5 in 9th grade to -0.3 Z scores by12th grade. Dropouts and stagnators are not distinguishable. In 9th grade both have substantially higher levels of punishment than other groups (+.0.2 and +0.35). Dropouts rise very rapidly between the 9th and the 10th grades. Punishment for stagnators seems to rise most rapidly between 11th and 12th grades. This graph of school punishment suggests that high school students have a bimodel distribution, with a highly punished group and a less punished group.

In the 9th grade the spread of z scores is approximately 0.8 and is highly significant. By12th grade the z score spread is approximately 1.0.

Encouragement from teachers

The graph indicates that thrivers report significantly more encouragement from teachers than any of the other types. In wave 1 at 9th grade they are fully 0.6 standard deviations above the sample mean. This advantage is maintained throughout their high school career. The spread of scores between groups in 9th grade is highly significant ($p = 0.000$). Middlers hover around the sample mean throughout high school, although they show a slow downward trend from +0.2 in 9th grade to around zero by 12th grade.
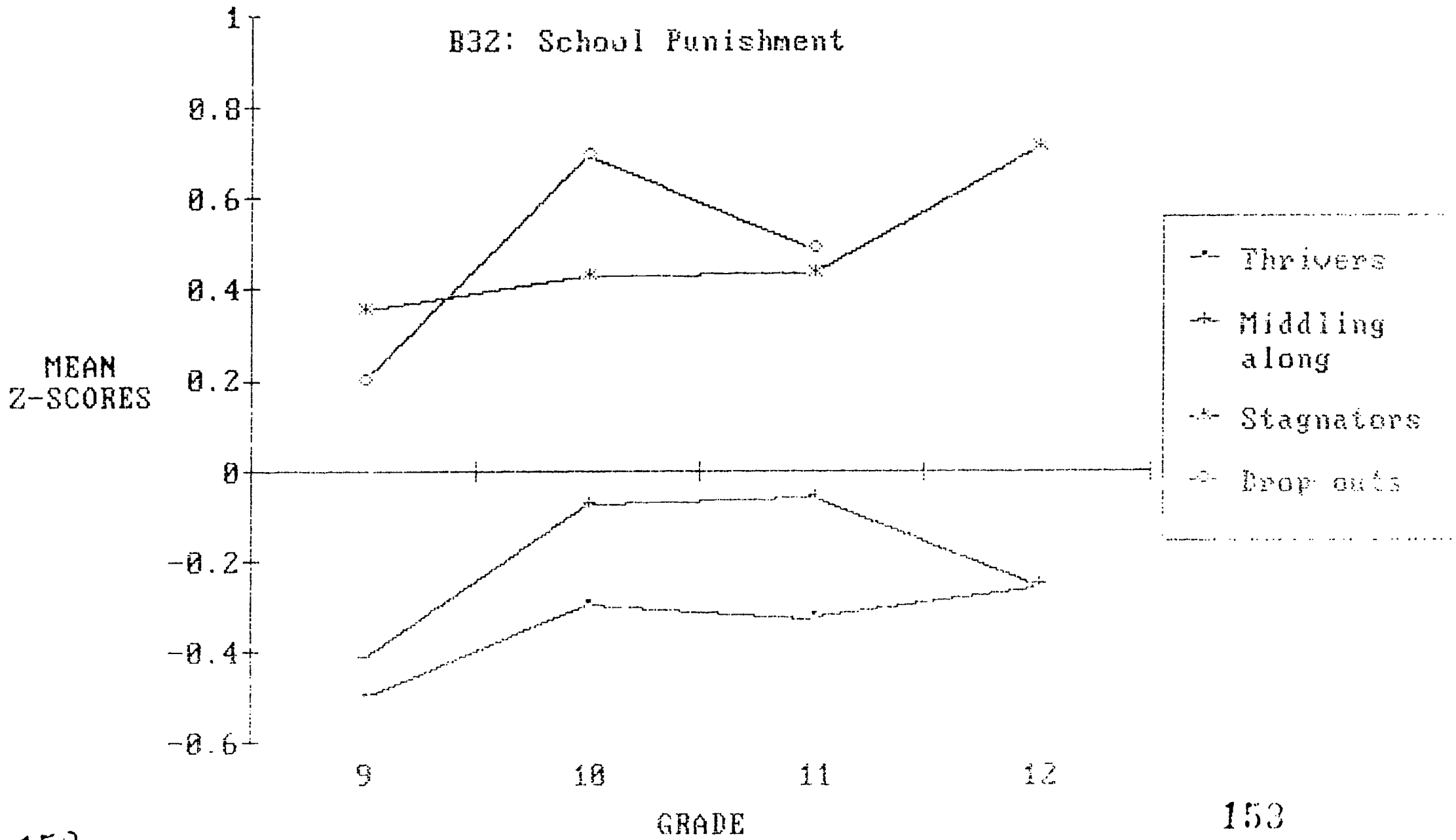
Dropouts and stagnators, at all stages of the high school career, report low encouragement from teachers. They have scores of -0.2 and -0.3 below the overall mean in 9th grade. Dropouts then exhibit a dramatic fall in encouragement from teachers by 10th grade. Their score falls precipitously in 10th grade to - 1.0 z scores below the overall mean. The stagnators also report little encouragement with a score around -0.6 z scores below the overall mean. While dropouts leave school, the stagnators continue their gradual decline in encouragement from teachers. By 12th grade their score is also close to -1.0 z scores below the mean. At the 12th grade the score spread between highest and lowest groups has increased from approximately doubled from 0.9 to approximately 1.7 standard deviation units.
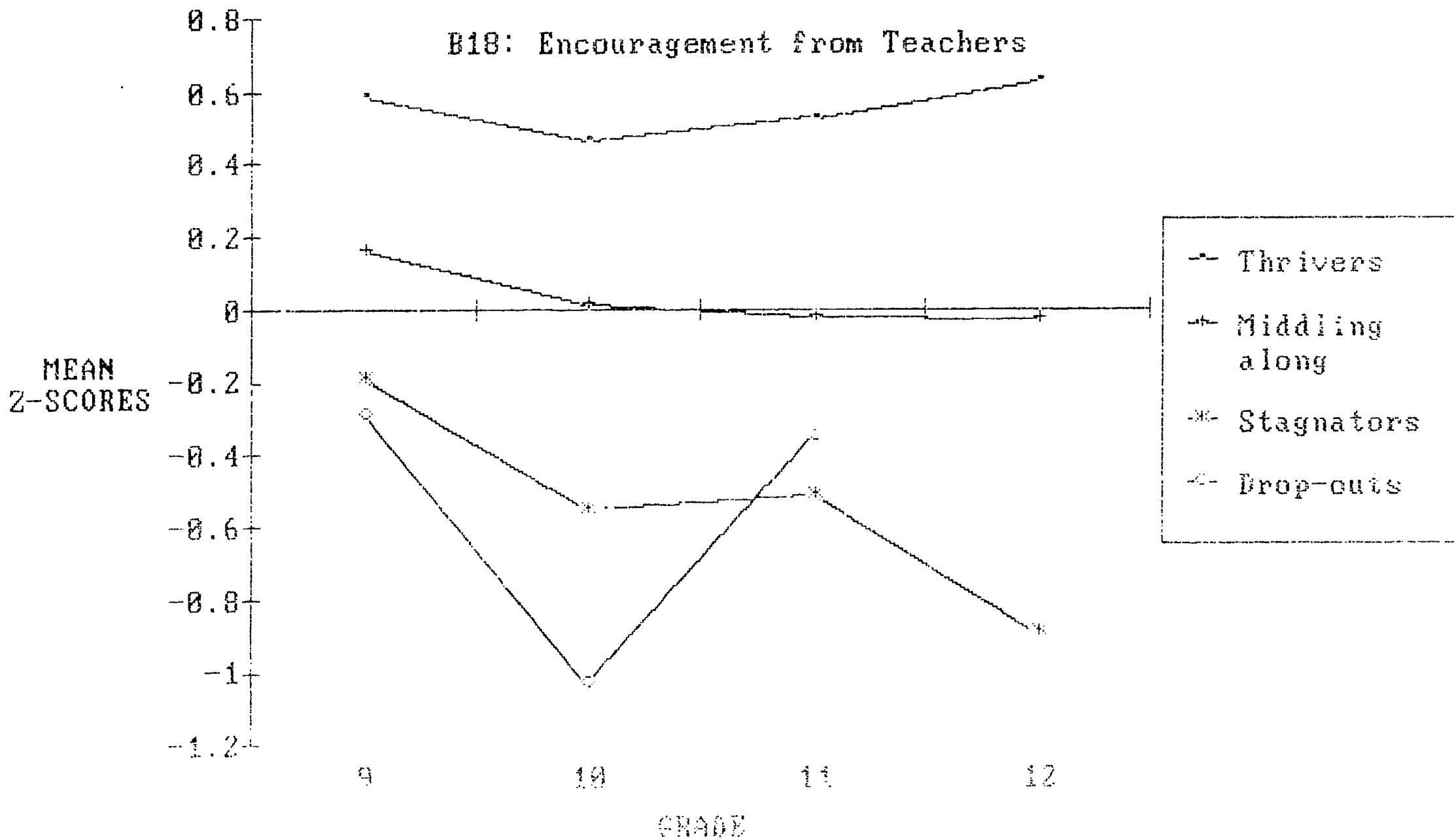
Perceived Support from teachers

Thrivers report the highest levels of support from teachers at all grade levels across the high school. They start with a significant advantage scoring +0.35 z scores above the overall mean. The other groups are at or below the sample mean. This group difference is just significant [f=2.74, p=.04] in the 9th grade.
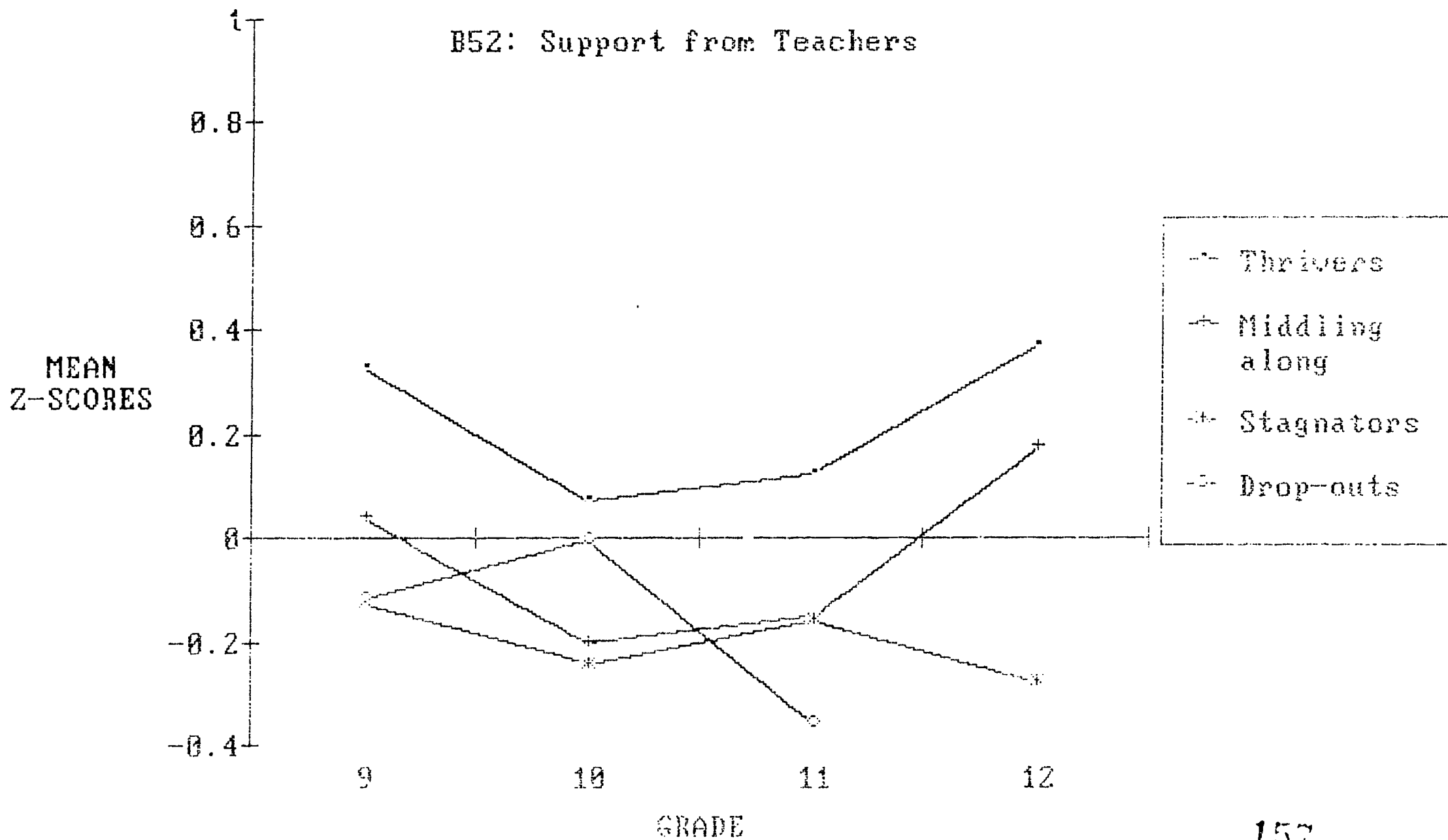
In the ensuing years the levels of perceived support drops

B32: School Punishment
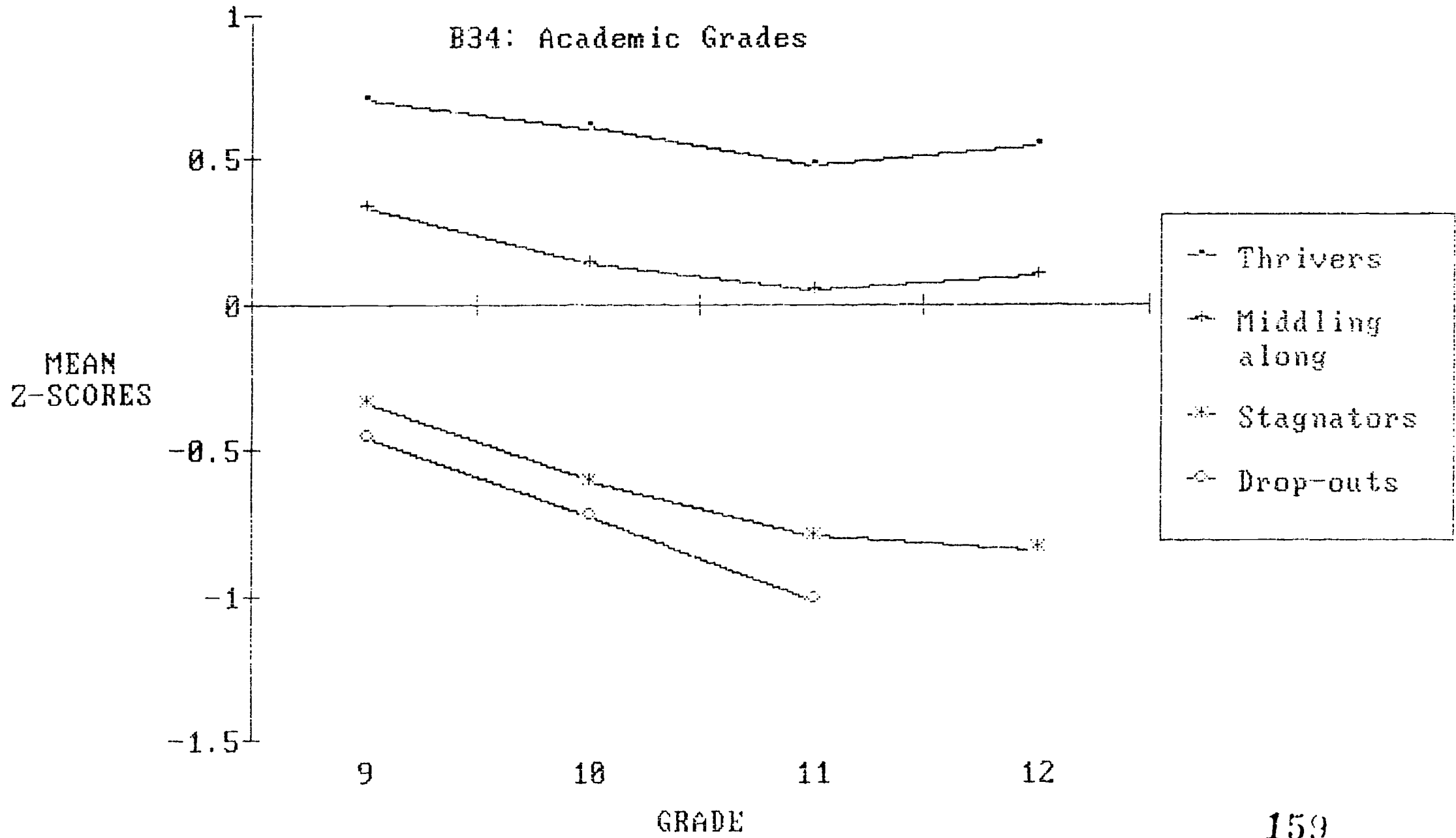
MEAN Z-SCORES

Legend:
- Thrivers
- Middling along
- Stagnators
- Drop outs

GRADE

152

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B18: Encouragement from Teachers

MEAN Z-SCORES

Legend:
- Thrivers
- Middling along
- Stagnators
- Drop-outs

GRADE

ERIC

B52: Support from Teachers

MEAN Z-SCORES

Legend:
- Thrivers
- Middling along
- Stagnators
- Drop-outs

GRADE

156

B34: Academic Grades

Legend:
- Thrivers
- Middling along
- Stagnators
- Drop-outs

MEAN Z-SCORES

GRADE

slightly for most groups in 10th grade and then slowly increases for all groups except stagnators for whom support from teachers gradually diminishes. By the spread of approximately 0.7 z score units in 12 grade has risen from 0.4 in 9th grade. The slight rise in the score for dropouts between 9th and 10th grades suggests that those dropouts receiving the least levels of support drop out. This results in the slight rise in mean score of the remaining dropouts. However, by 11th grade there is a very rapid continued decline in reports scores of support from teachers.

Academic grades

In 9th grade there is already a huge difference between thrivers, middlers, stagnators and dropouts. Thrivers receive significantly higher grades than the other groups. They report academic scores of around + 0.7 z scores above the overall mean. Middlers are about +0.25 above the mean, while stagnators and dropouts both score around -0.4 z scores i.e.,. below the overall mean. These differences are highly significant [F=39.6, p=.000].

The trend from 9th to 11th grade, is downwards for all four groups. The thrivers drop from about 0.7 to about 0.5 z scores above the mean; stagnators and dropouts show a steady decline with dropouts having the lowest academic grade levels. The dropouts decline from around -0.4 to -1.0 z scores below the mean. These initial differences in 9th grade are simply perpetuated for the rest of high school.
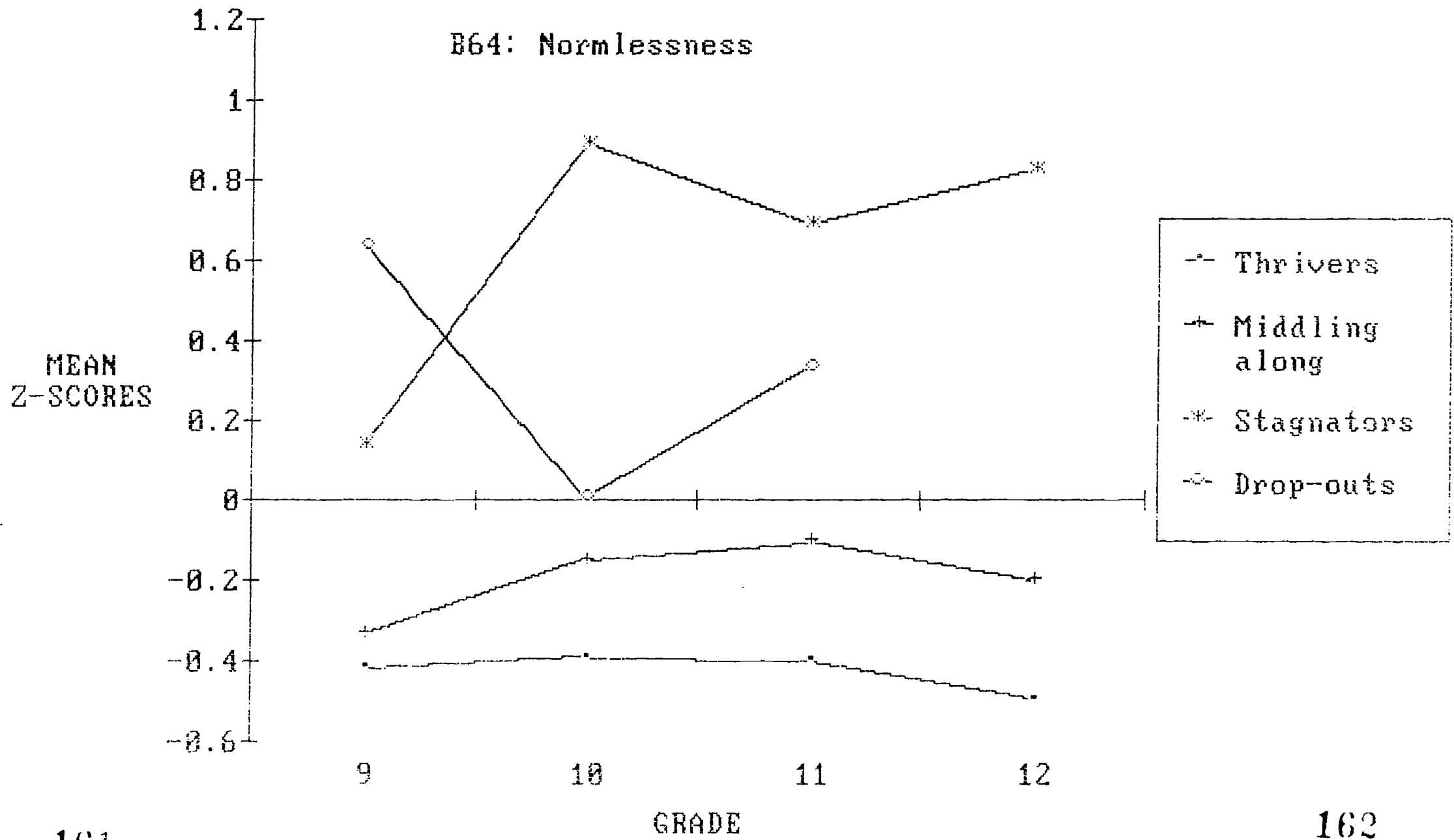
Both thrivers and middlers reverse their slight decline between 9th and 11th grades, with the decline flattening out by 12th grade. Both of these groups showing a slight increase by the 12th grade testing. We can conclude that differences in academic success were well established prior to high school.
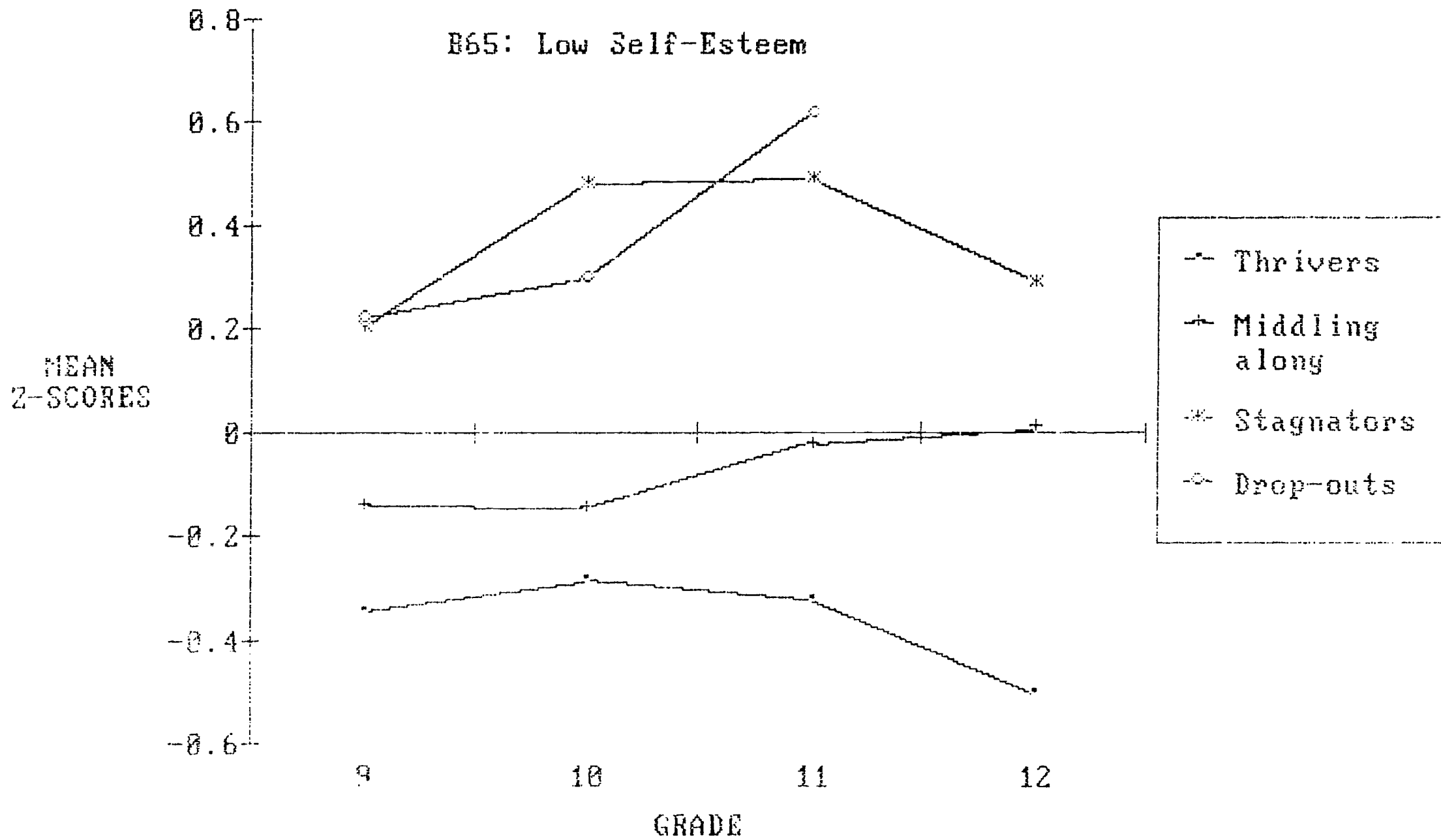
Development of selected personality characteristics across the high school years

As noted in the literature review, certain personality and character features are expected to be associated with the gradual loss of committment bonding, and loss of involvement in the high school. Several of these characteristics are described in this section.

Normlessness

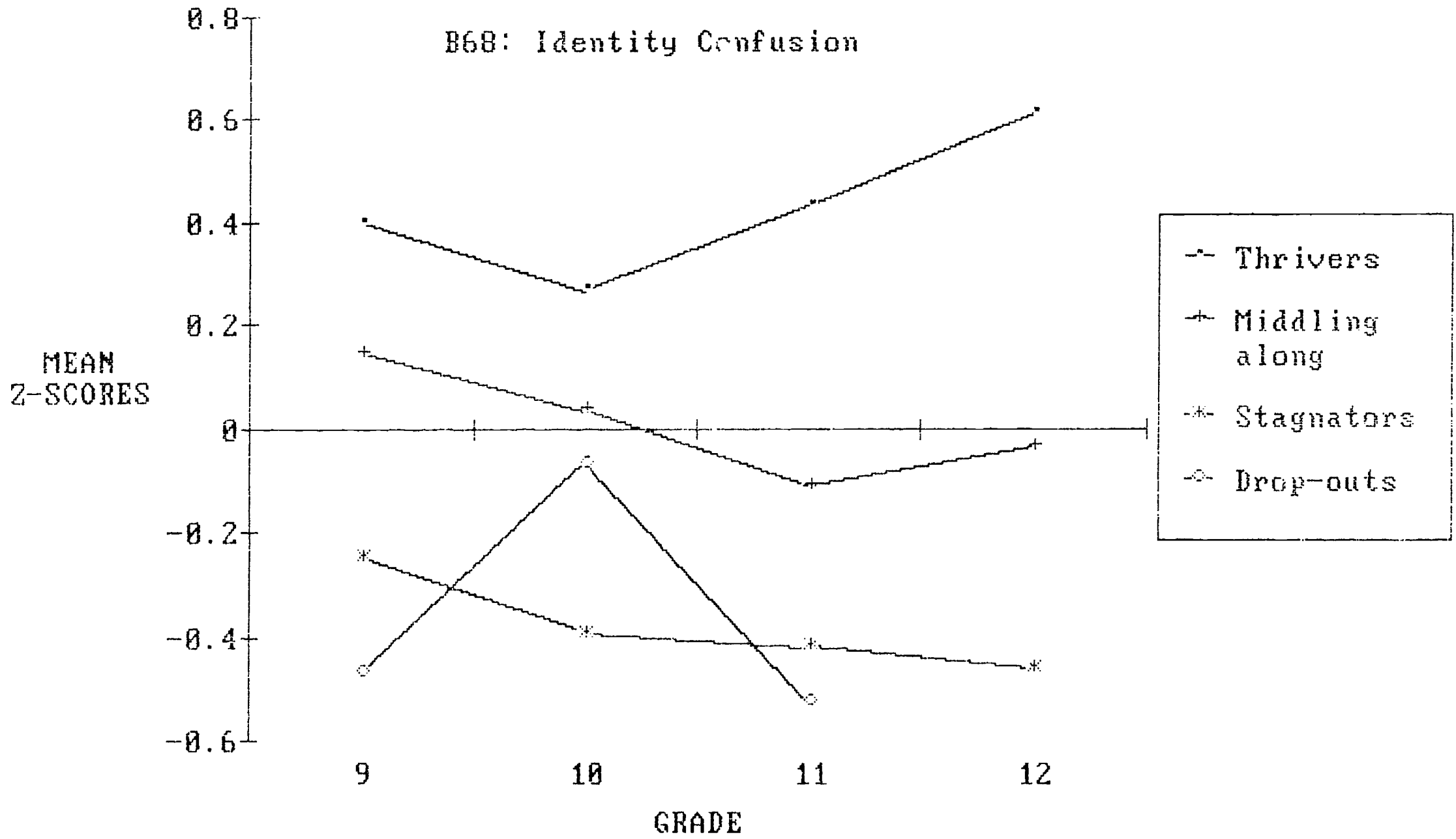By 9th grade the groups are already significantly well separated in normlessness [F=57.63, p=.000]. Dropouts are significantly higher than all other groups in the 9th grade (+.65 z scores) above the mean. Stagnators hover around +0.1 z scores above the mean. The middling and thriving groups are much less normless with scores of -0.3 and -0.4 respectively. The trends for these two positive groups across high school

B64: Normlessness

Legend:
- Thrivers
- Middling along
- Stagnators
- Drop-outs

MEAN Z-SCORES

GRADE

161

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B65: Low Self-Esteem

MEAN
Z-SCORES

Legend:
- Thrivers
- Middling along
- Stagnators
- Drop-outs

GRADE

B68: Identity Confusion

MEAN
Z-SCORES

Legend:
- Thrivers
- Middling along
- Stagnators
- Drop-outs

GRADE

are virtually flat indicating no major increase in normlessness.

Dropouts and stagnators however show clear increases in normlessness across high school. The most normless of the dropouts leave school before the 10th grade. This results in dramatic fall in the mean score of those dropouts remain into the 10th grade. This later dropout group then shows rapid increase in normlessness. Stagnators, like dropouts, show a dramatic rise between the 9th and 10th grade followed by a rather flat profile between 10th and 12th grades. By this point these youth are extremely normless scor'ng of +0.8, +0.7 and +0.75 z scores above the overall mean. This picture is similar to that of drug use in which the 2 conventional groups show no major erosion, while dropouts and stagnators exhibit evidence a very rapid rise in levels of normlessness between 9th and 10th grades. Normlessness among dropouts was already very high at the 9th grade. Thus, this development of normlessness appears to have occurred prior to high school for those who dropout.

Low self-esteem

By 9th grade the four groups are already significantly separated on self-esteem [F=20.56, p=.000]. Dropouts and stagnators are indistinguishable in 9th grade, both having lower self-esteem then middlers and thrivers. In 9th grade thrivers and dropout/stagnators are separated by almost .5 of z scores.

The reported self esteem of the two negative groups [dropouts and stagnators] then shows a further erosion so that by 11th grade these groups are fully 0.5 and 0.6 z scores below the population mean. While dropouts leave school the stagnators then show a very slight improvement in self esteem. By 12th grade they are only 0.3 z scores beyond the sample mean. The two positive groups show virtually no erosion of self-esteem across the high school years.

Thrivers initially show little change between 9th and 11th grade. However, by 12th grade their self-esteem has again improved. These trends in self-esteem seem to pre-date high school and simply represent a continuation of prior differences. High school, however, appears to provide an environment which maintains the self-esteem of thrivers, while doing little to prevent the continuing erosion in self-esteem of stagnators and dropouts.

Identity development

On identity development the groups are already profoundly different in the 9th grade. Thrivers are significantly above average while dropouts are -.5 z scores below the overall mean. This spread in 9th grade is highly significant [F=26.3, p=.000].

The trends across the high school years suggest that, for all

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groups, there is a mild decline during 9th and 10th grades. All groups show more identity confusion in 10th grade. However, this downward trend turns around for thrivers so that by 12th grade they have shown two successive and significant improvements in identity and are fully +0.6 z scores above the overall mean. Middlers have a slow gradual decline relative to thrivers and are close to the overall mean by 12th grade. Stagnators exhibit a slow decline across all the high school years. From -0.25 in 9th grade they fall to -0.45 by 12th grade. The poor score for dropouts suggests that identity confusion is rampant in the 9th grade. The most confused dropouts tend to leave school early. However, among the remaining "soon to be" dropouts the decline in identity continues so that by the 11th grade the remaining dropouts have the lowest identity score of all youth (-0.6 z scores). This identity data also suggests that these differences in identity pre-existed high school and that by entry into 9th grade, the groups were already significantly different in their sense of self, values and future. This is consistent with many of the findings regarding significant differences in the 9th grade.

Trends in parent-youth relationships pertinent to dropping out

Parent-youth relationships are critical in understanding the background to dropping out. Family socialization processes and Control theory have been discussed in the earlier literature review. This section examines the differences between the groups in several selected aspects of parent-youth relationships.

Parental achievement demands
In the earliest stages of high school there are already highly significant differences between the four groups in parental achievement demands (P = 0.000). These differences clearly pre-date entry into the high school. At all points across high school achievement demands of parents of thrivers is significantly above those of the other groups. However, the spread in 9th grade is small compared to the rapid divergence occurring by 10th grade. Dropouts and stagnators show dramatic falls by 10th grade, while parental achievement demands on thrivers further increases by 10th grade. All groups thereafter show slight parallel declines.

Parental pressure to continue schooling
As for parental achievement demands, parental pressure for continuation of schooling is highest on thrivers at all stages of high school. Middlers are also above average at all points across the high school career, although not quite so intense as those on the thriving group.

In 9th grade the two lower groups (dropouts and stagnators) are significantly below the two more positive groups [F=27.8, p=.000]. These two groups then show a dramatic fall in parental pressure to continue schooling. This is consistent with the erosion of parental achievement demands occurring between 9th and 10th grade. Stagnators exhibit a steady weakening of parental pressure to continue schooling. Thus, by 12th grade their score drops from -0.1 z scores to -0.8 z scores.

Dropouts provide a misleading pattern - again due to attrition between waves. Parental pressure on dropouts is lower than all groups in 9th grade and then plummets further in 10th grade. The rise between 10th and 11th grade follows from the fact that the more serious dropouts leave early. This creates a second dropout group who leave between 11th and 12th grades. This latter group shows an anomalous rise although this should be interpreted more as a result of the fact that the dropouts with the most apathetic parents leave earlier.
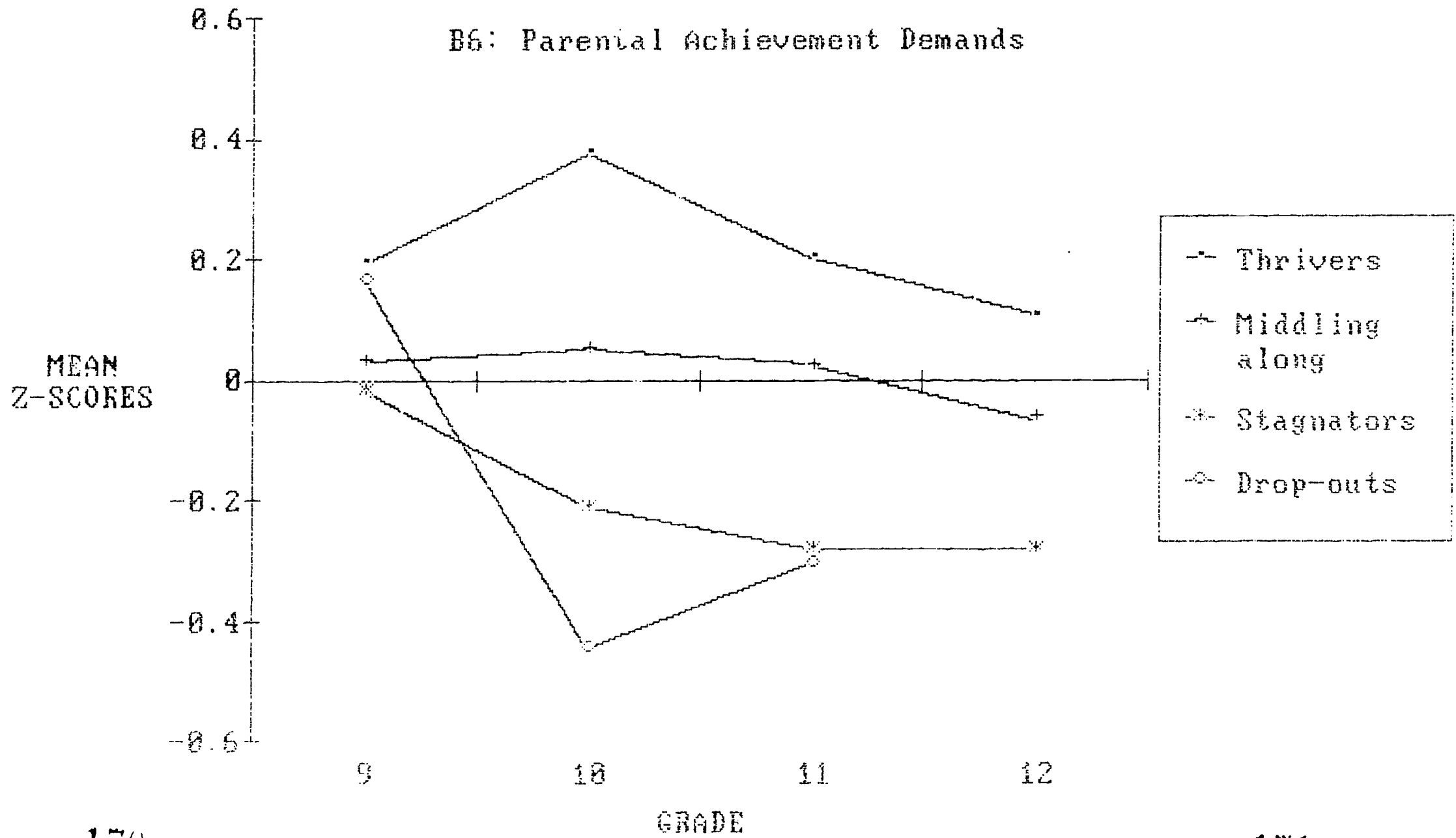
Involvement with parents.

The four groups in 9th grade already have clear and significant differences in involvement with parents, with thrivers having the highest score [F=15.93, p=.000]. This suggests that differences in parental pre-dated high school. This difference, however, then widens dramatically in the successive years of high school.
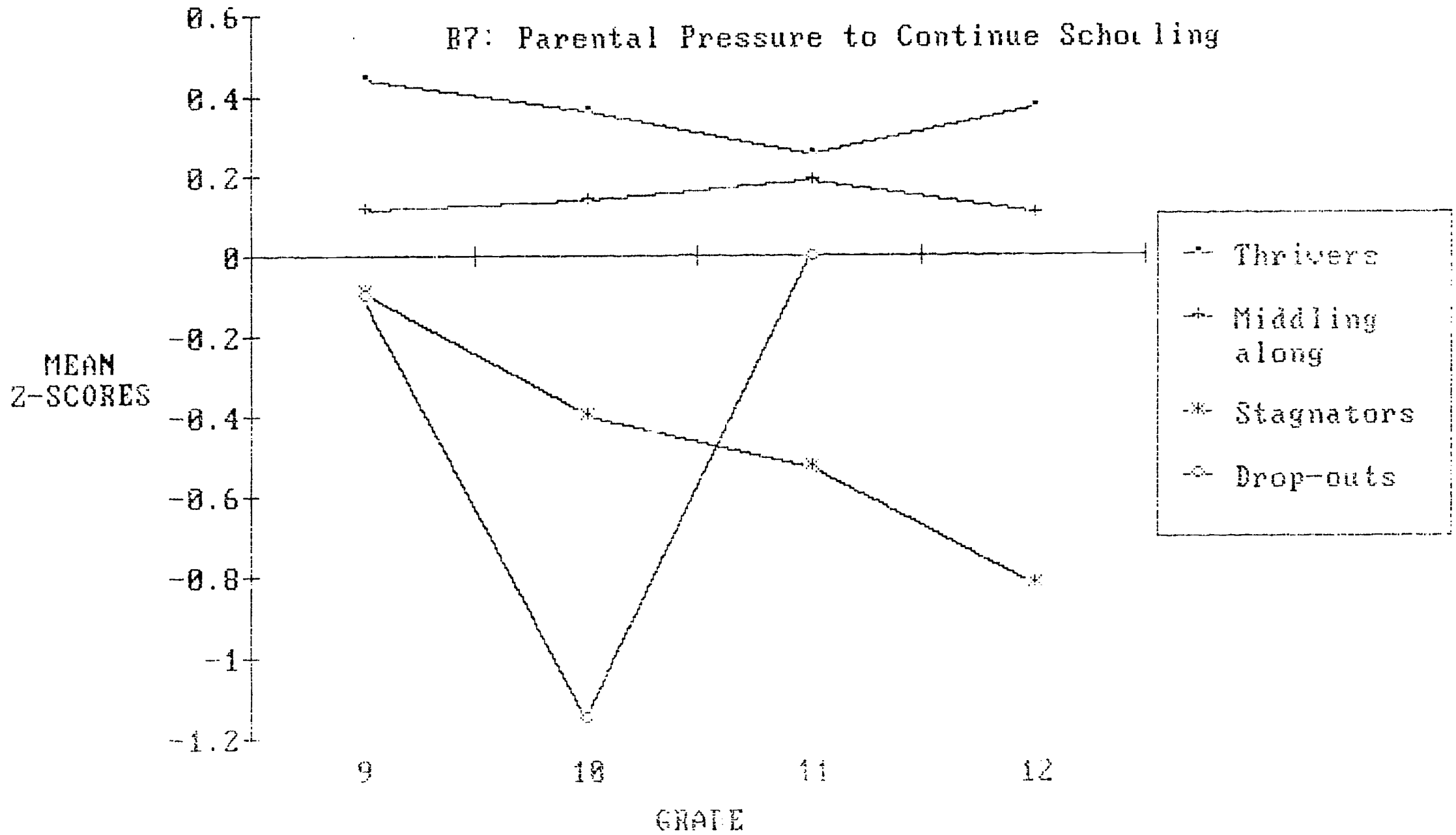
Middlers stays close to the overall sample mean during all the high school years. The most dramatic downward trend is shown by dropouts who fall precipitously by 10th and 11th grades. The rise between 9th and 10th grade for dropouts is again due to the early attrition of the most disinvolved dropouts. Similarly, stagnators show a slow steady decline from +0.2 z scores above the sample mean to -0.75 by 12th grade. In 9th grade the spread between the four groups of only 0.5 z scores increases to almost 2.0 z scores in the later stages of high school.

A noticeable trend is for all youth to show a gradual decline in involvement with parents 9th grade to 12th grade. However, this loss of involvement is more dramatic for the two lower achieving groups (Stagnators and Dropouts).

B6: Parental Achievement Demands

MEAN Z-SCORES

Thrivers
Middling along
Stagnators
Drop-outs

GRADE

170

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B7: Parental Pressure to Continue Schooling

MEAN
Z-SCORES

Legend:
-•- Thrivers
-+- Middling along
-*- Stagnators
-◇- Drop-outs

GRADE

B12: Involvement with Parents

MEAN
Z-SCORES

GRADE

Thrivers
Middling along
Stagnators
Drop-outs

174

175
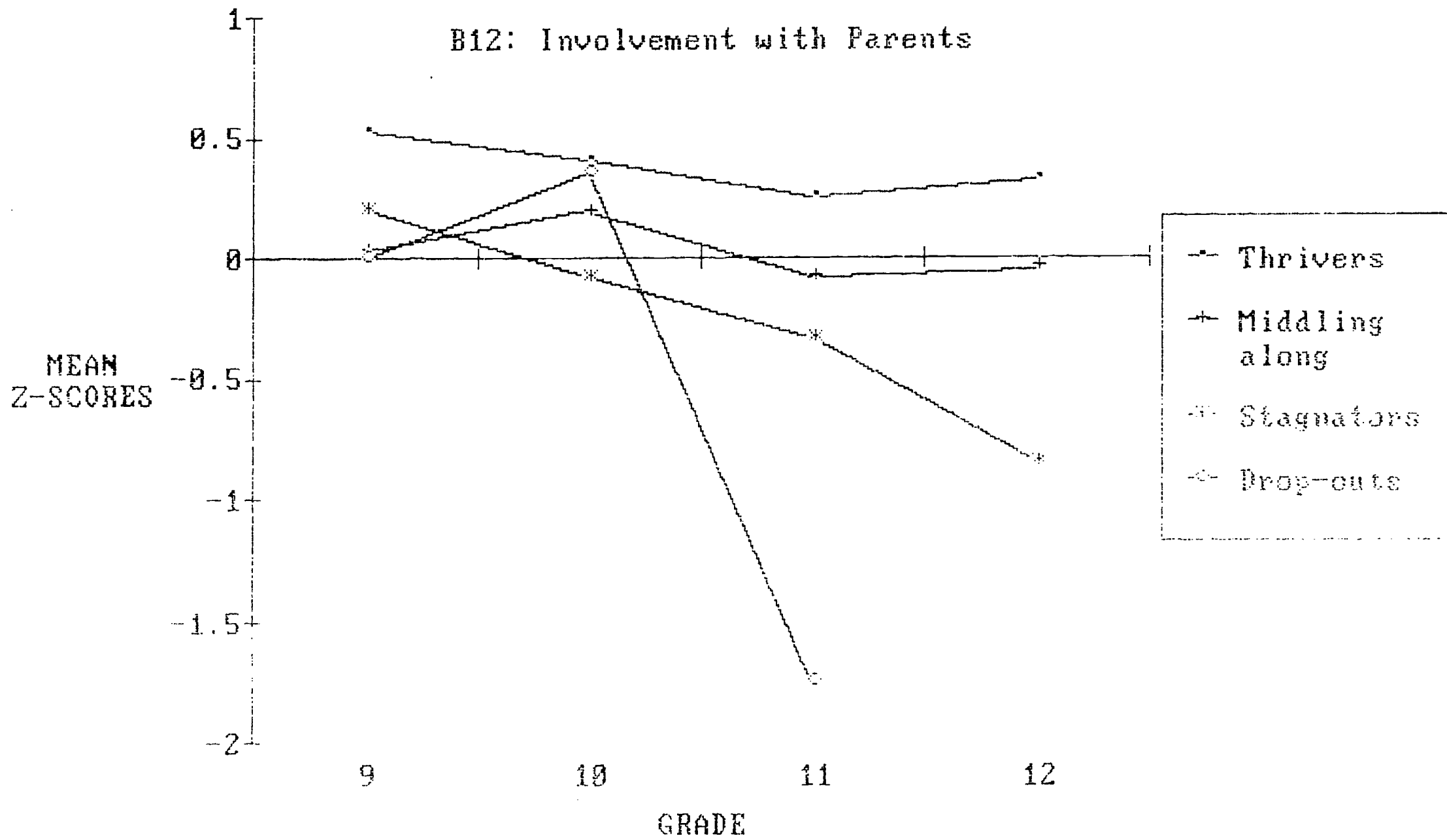
Trends in peer relationships during high school

Peer relationships are critical during the high school years and one major theory of delinquent and social deviance suggests that the presence of role models is one of the critical conditions which precipitates the youth into deviant behaviors. This section examines peer relations during the high school years.

Dropouts among friends

The divergence in this particular variable is very dramatic. In 9th grade the groups are separated by about 0.3 standard deviation units, which is highly significant [F=11.60, p=.000]. However, in successive grade levels this difference is becomes magnified, so that by 10th grade the difference reaches almost 1.2 z scores between groups with the highest (dropouts) and lowest exposure to dropout among friends (thrivers). Stagnators have relatively low exposure to dropout among friends in 9th grade. However, this rises steadily to almost +0.4 z scores above the mean in later years of high school.

Delinquent peer groups

In exposure to delinquent peer groups profound differences between these pre-exist high school. The 9th grade data indicates that dropouts have significantly higher exposure to delinquent peers than all other groups. The overall spread between groups is about 0.9 z scores in 9th grade. This is significant [F=17.22, p=.000].
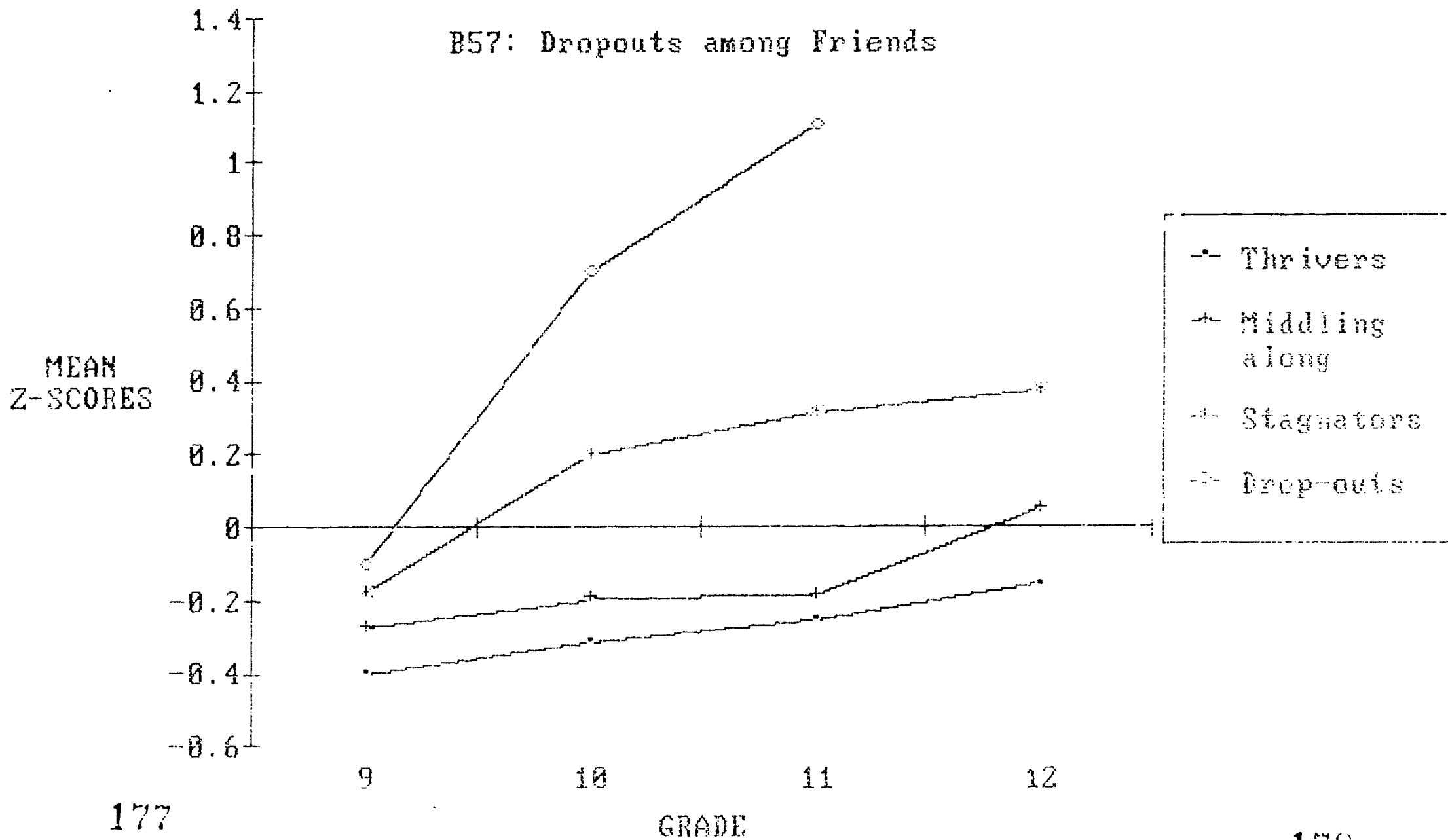
These initial differences escalate rapidly by 10th grade. All groups show rising exposure to delinquent peers, although the increase is fairly dramatic only in the case of dropouts and stagnators. The association with delinquent peers for dropouts and stagnators is consolidated by 10th grade. The affiliation then remains stable for the duration of the high school career.

Thrivers and middlers show no tendency to associate with delinquent peers during all the high school years. This data suggests that although differences in affiliation to delinquent peer groups pre-exist high school the escalation and consolidation occurs between 9th and 10th grades.

Social isolation

This graph indicates an interesting difference between dropouts and stagnators. At entry into high school in the 9th grade, dropouts are less socially isolated than most other groups, suggesting that their affiliation to a delinquent peer group is already strong. Stagnators by contrast are the most isolated group in 9th grade with a score of +0.2 z

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B57: Dropouts among Friends

MEAN Z-SCORES (y-axis, ranging from -0.6 to 1.4)

GRADE (x-axis: 9, 10, 11, 12)

Legend:
- Thrivers
- Middling along
- Stagnators
- Drop-outs

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B61: General Social Isolation

B59: Delinquent Peer Group

Legend:
- -- Thrivers
- -+- Middling along
- -*- Stagnators
- -◇- Drop-outs

MEAN Z-SCORES (y-axis, from -0.6 to 1.2)

GRADE (x-axis: 9, 10, 11, 12)

181   182
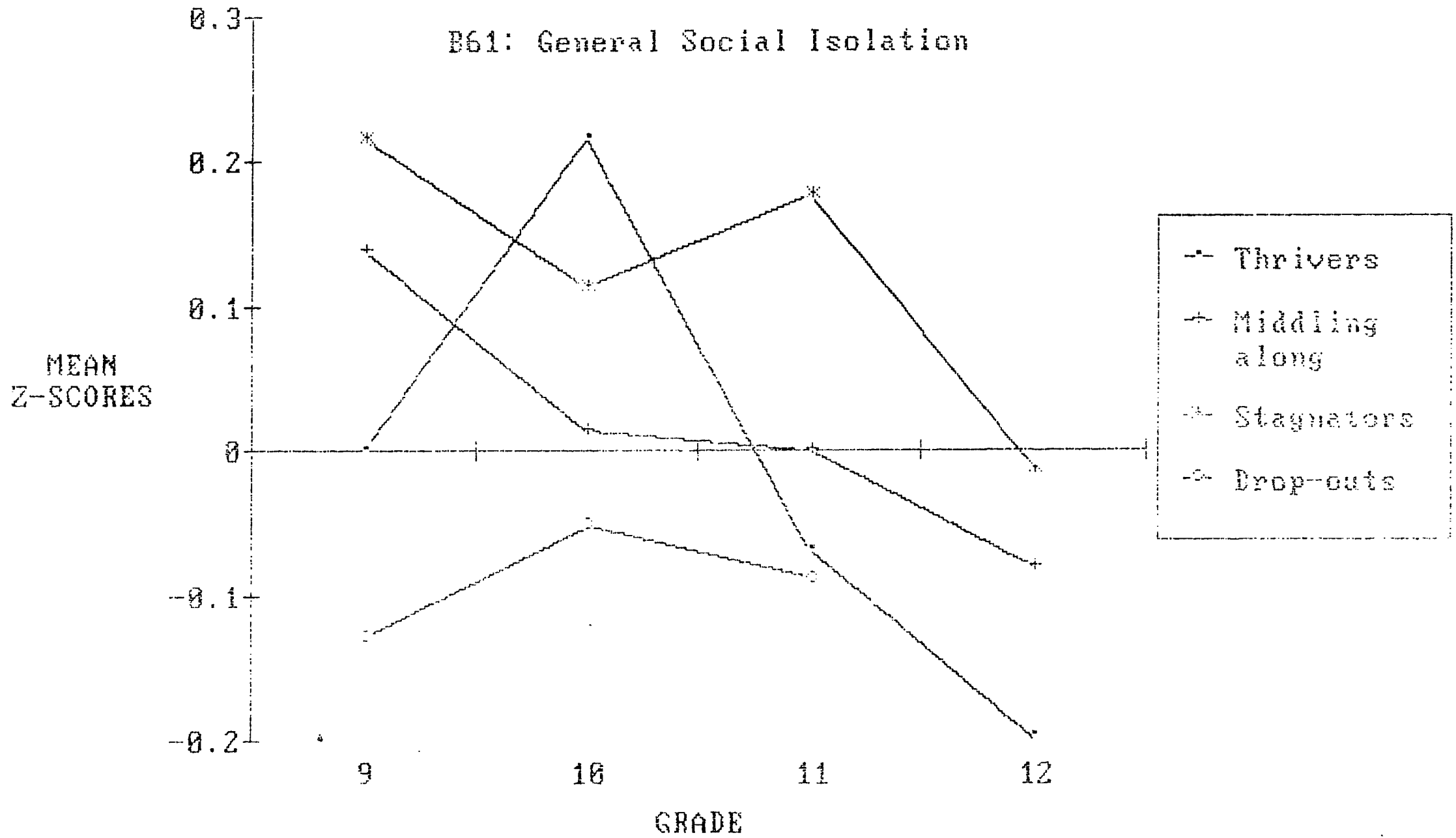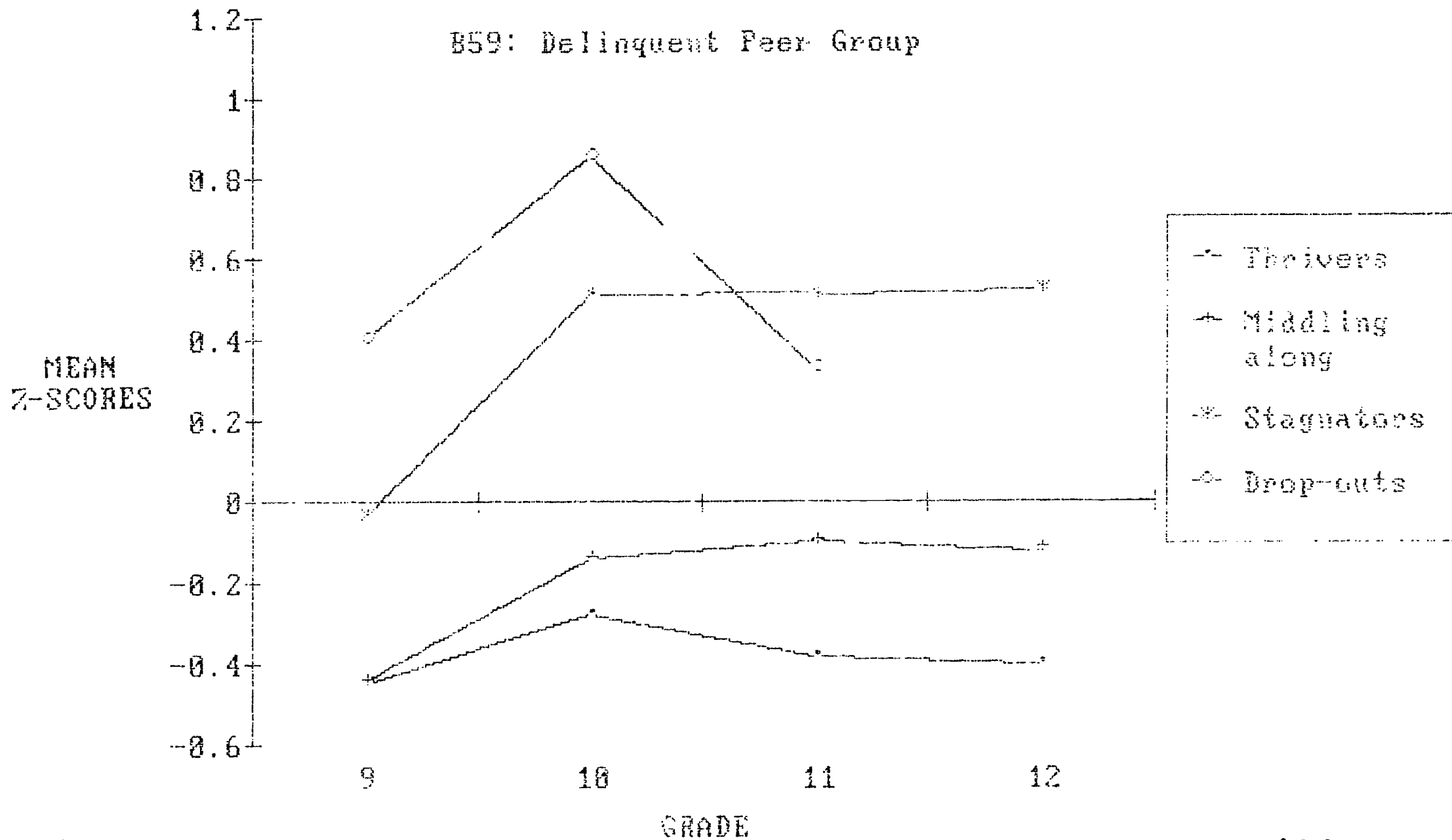
scores above the overall mean.

All groups show a general movement towards lower social isolation during the course of high school. These data suggest that in 9th grade most youth experience higher social isolation than they experience by the 12th grade. The most dramatic improvements are shown by thrivers - who are isolated in 10th grade - but who improve dramatically and are well socially integrated by 12th grade. Similarly, middlers and stagnators show steady improvements, although stagnators only manage to reach the sample average score by 12th grade.

CHAPTER 9

PREDICTING DROPOUT AND ESTABLISHING RELATED CORRELATES

PREDICTING DROPOUT AND FINDING IT'S CORRELATES

In this chapter we examine the correlates of withdrawal/dropout and the degree to which these can be predicted are examined. These are established for each separate domain of family, peer, school climate, personal traits and general school bonding and adjustment. Each analysis uses Wave 1 (9th grade) data initially, and then replicates this analysis using the final wave of data that is available for each student. These second analyses are more contemporaneous with the final status of withdrawal/dropout and are therefore more predictively accurate. However, it is useful to examine the degree of predictive accuracy that can be achieved using 9th grade predictors.

The criterion scale: School avoidance/dropout

In forming a dependent variable for this correlation/regression examination we desired a continuous rather than an oversimplified dichotomous variable. Thus, we formed a continuously scored scale using items from the school avoidance scale (frequency of lateness for class, frequency of skipping classes, frequency of truancy, etc.). The five items in this scale had provided a highly reliable scale with alpha levels of 0.77, 0.74 and 0.75 for the three waves of testing. Thus, this scale provides a useful foundation for extending the scale to include dropout behavior. We added dropout to this scale at the most extreme end of the scale. The scale-score ranged from 0 to 20 for all youth in the sample who had not dropped out. Thus, the dropouts were given the score of 21, placing dropout at the high extreme end of these withdrawal scores. All youth in the sample at wave 3 were then scored with this scale.
Multiple regression against school avoidance/drop out: family variables
This multiple regression examines the relationship between family variables and the scale of school avoidance/drop out. It uses wave 1 ie., 9th grade variables and 11th grade variables to examine this relationship.

Correlation and regression analysis: Methods

In the following analyses we use Pearson's correlation coefficient to establish the correlates of withdrawal/dropout. For the prediction studies we use stepwise multiple regression. Firstly, we examine the regression equations for each separate domain of variables i.e., family, peer, personal, school bonding, school climate, and so on. In each case we run separate regression equations for Wave 1 and Wave 3 testing phases. Secondly, we choose the statistically significant predictors from each separate domain and run a final combined regression analysis.

1. PREDICTING WITHDRAWAL/DROPOUT USING FAMILY CHARACTERISTICS

Wave 1 Family correlates and eventual witndrawal/dropout

The significant correlates of ultimate withdrawal/dropout at the end of the school career include the following:

- Family school transience: This correlates at +.26 indicating that high transience and school relocations are significantly related to dropout.

- Parental disatisfaction with school behavior is related to school avoidance and dropout [R=+.21].

- Negative labelling: The strongest of the family scales are the two labeling scales. Negative labeling by mother [r=+.32] and negative labeling by father [r=+.24] are both strongly related to school avoidance/drop out.

Multiple regression analysis: Wave 1 family variables.

Overall significance: The ANOVA table for the regression has an F-ratio of 11.17 which is significant at beyond p = .000.The overall multiple correlation of R = .44. The multiple regression equation using wave 1 (9th grade data) accounts for 19.4% of the variance in school avoidance/dropout. Thus, although dropout and withdrawal behavior occurs in the following two or three years, we conclude that 9th grade data has a strong and significant predictive validity.

Relative importance of the family predictors from Wave 1

Using the beta coefficients and the significance levels we have an assessment of the relative importance of the different predictors.

Negative labelling by mother: The first predictor in the stepwise process is negative labeling by mother, with a beta coefficient of .28 which is highly significant [p=.0001]. This indicstes that the youth feels negatively stigmatized by mother (e.g. as lazy, nonacademic, unsocialized and deviant). It is a general negative stigmatization process.

Family transience and school relocation: This enters at the second step (beta = .21) and is highly significant at beyond p=.000. This confirms the profile identified in the typological analysis where dropouts have the most extreme level of family/school disruptions and relocations.

Parental involvement in school: The third significant variable entering the stepwise process is parental involvement with school. This is again consistent with the typological work which indicated that parental involvement separated thrivers from stagnators and dropouts. In this instance it is significant at p=.012.

Parental satisfaction with school instrumental behaviors: The

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fourth variable entering the regression is parental satisfaction with school instrumental behaviors (p=.01). This clearly overlaps in information content with negative labeling by mother since both variables focus on the relationship between youth and parents and are highly correlated.

Correlational patterns using Family Characteristics: Final Wave

This second analysis uses more contemporaneous family status variables to predict final school avoidance/dropout status. Given the fact that this information is more current we expect higher predictive accuracy. The pattern of correlations is substantially higher - as might be expected. Variables positively correlated with school avoidance and dropout include the following:

- negative labeling by mother [r=.39].
- negative labeling by father [r=.36].
- conflict with parents [r=+.28]
- Parental disatisfaction with school behavior [r=+.20]

Factors negatively correlated with school avoidance/dropout include:

- parental support for education [r=-.32]
- parental satisfaction with the youth [r=-.23]
- parental pressure for school continuation [r=-.23]
- involvement with parents [r=-.22]
- attachment to parents [r=-.19]
- parental involvement with school [r=-.20]

This pattern of correlations indicates that parental involvement, attachment to parents, parental interest and encouragement to graduate and so forth, mitigate against school dropout and withdrawal. These confirm the findings from Wave 1 data indicating that negative labeling and a blaming/angry relationship between parent and child is associated with problems at school.

The relative importance of family factors: Final Wave data

The significant predictors from the regression analysis include the following:

Negative labelling by mother: The beta coefficient indicates that the most important verbal again is negative labeling by mother [beta =.19, p=.009].

Parental support for education again mitigates against school avoidance and dropout [beta =.-18, p=.0003].

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Conflict between youth and parents: A third factor which produces school avoidance/dropout is conflict between youth and parent [beta =.14, p=.001].

Parental involvement mitigates against dropout [beta = -.11, p=.013].

Parental disatisfaction with school instrumental behavior is clearly correlated and enters the equation at the fifth step [beta =.11, p=.012].

Parental pressure for school continuation mitigates against dropout [beta =-.09, p=.038].

These family associations are consistent with Wave 1 with essentially the same pattern emerging. This suggests a type of relationship where parents are uninvolved in schooling, do not provide much support to the youth for school continuation, or general support.

It might be noted that the overall level of explained variance using contemporaneous family information jumps from approximately 20% to 30% indicating a higher predictive power with the more recent data. However, as noted above the same basic pattern emerges from both analyses. We conclude that family variables are critically influential in governing the degree of youth disinvolvement and dropout.

PREDICTING WITHDRAWAL AND DROPOUT USING SCHOOL BONDING AND STUDENT BEHAVIOR

In this section the focus is the correlates of withdrawal/dropout among the committment bonding and school behavior of the youth.

Bonding and School behavior correlates of withdrawal: Wave 1 data

Virtually all of the commitment bond correlates indicate that bonding is negatively correlated with withdrawal and dropout. The following correlates may be noted:

- enjoyment of school [r=-.23]
- educational aspirations [r=-.23]
- educational expectations [r=-.23]
- belief in value of schooling [r=-.17]
- belief in the effectiveness of your school [r=-.25]
- belief in fairness [r=-.18]
- academic grade [r=-.34]
- respecting teachers [r=-.26]

The following indicators of weak or low committment bonding correlate positively and significantly (at beyond p = .05) with dropout:

- personal tolerance of dropout [r=+.18]
- boredom at school [r=+.25]
- school punishment [r=+.25]
- classroom withdrawal v. participation [r=+.24]
- aggression to teachers [r=+.23]
- distraction in classroom [r=+.22]
- disorganized study habits [r=+.28]
- normless school behavior [r=+.21]
- school avoidance in the 9th grade [r=+.44]

Predicting withdrawal/dropout using bonding: Multiple regression analysis with Wave 1 (9th grade data)

The multiple regression analysis indicates that school behaviors and school bonding at the 9th grade are highly predictive of withdrawal and dropout.

Overall significance of the regression equation: The overall multiple R is highly significant [F=18.77, p beyond 0.000]. The multiple R = +0.51 with the equation accounting for almost a quarter of the variance in ultimate withdrawal/dropout status(ie., 24.7%.)

Relative importance of the variables: Four significant steps are indicated in the regression analysis. The beta coefficients and significance levels indicate the relative importance of the different characteristics.

School avoidance at 9th grade: As expected school avoidance at the 9th grade is the main predictor of school avoidance/dropout later in high school. This enters the stepwise regression equation at the first step with beta = +.29 and p=.000.

Academic success/failure: The tendency for dropouts to have failing grades is underlined by the second step in the regression when academic grade enters [beta = -.12, p=.014].

Avoidance/withdrawal in classroom: The third step indicates that classroom behavior is a significant signal i.e.,. classroom withdrawal and the avoidance of active participation [beta = +.09, p=.04].

Social Isolation: This is a surprising independent contributor to

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predicting withdrawal and dropout [beta =-.11, p=.006]. The negative coefficient indicates that the youth is well integrated into a peer group of other (perhaps failing) students.

This suggests that low achieving students, who withdraw in classroom, but who are not socially isolated at school in the ninth grade are at high risk of further withdrawal and dropout.

PREDICTING WITHDRAWAL/DROPOUT FROM STUDENT EXPERIENCE OF SCHOOL CLIMATE

School climate correlates of withdrawal/dropout: Wave 1 data
The school climate variables at the 9th grade -in general - did not have strong correlations against ultimate withdrawal/dropout. The strongest correlates include the following:
- negative labeling by teachers [r=.27].
- victimization at school [r=+.10]
- feeling disrespected by teachers [r=+.13].
- feeling encouraged by teachers [r=-.20]

Although these correlations are small, all of the above reach statistical significance at beyond the $p = .05$ level.

Predicting withdrawal/dropout using regression using school climate variables: Wave 1 (9th grade data)
Overall significance of the regression equation: In this regression analysis, the overall multiple R [.30] is highly significant indicating that school climate experience contributes explanatory variance in predicting withdrawal/dropout. This is highly significant [F=9.74 , p= 0.000]. However, only 9.2% of the overall variance in withdrawal and dropout is explained.
Relative importance of the school climate variables
Only one school climate variable from the 9th grade has a significant beta coefficient. This is negative labeling by teachers which enters the equation at step one. The beta of 0.22 is highly significant

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[p=.000]. The feeling of "differential treatment" has a small significance [beta =.07 and p=.09]. However, this is marginal in comparison to the feeling of negative labeling by teachers. Negative labeling by teachers reflects a feeling of being stigmatized and blamed by teachers.

School climate: Correlations at the final wave

Using the more recent data produces stronger associations between school climate and student avoidance/dropout. Negative labeling by teachers is again critically important. The following are significantly correlated with avoidance/dropout at beyond the p=.05 level:

- negative labeling by teachers [r=+.31]
- feeling or racial tension in school [r=+.18]
- feeling of being treated differently from other students [r=.16]
- feeling disrespected by teachers [r=+.24]

The following variables appear to prevent avoidance/dropout and have negative correlations that all reach significance at beyond p=.05:

- feeling of having some influence at school [r=-.23]
- clarity in understanding school rules [r=-.22]
- having a feeling of individualized instruction [r=-.19]
- feeling support from teachers [r=-.16]
- experiencing encouragement from teachers [r=-.28]
- receiving support from counselors [r=-.23]

Predicting withdrawal and dropout from school climate: Wave 3

Overall significance of the regression equation: The overall multiple regression equation is highly significant [F=11.3, p=.000]. Overall multiple correlation of R =.43 is far higher than that found using 9th grade data. Approximately 19% of the variance in avoidance/dropout is explained by the youths' experience of school climate.

Relative importance of specific school climate variables: Wave 3

The regression equation indicates the relative importance of the different aspects of school climate. Relationship to teachers is again critical at the later stages of high school. This conclusion is supported by the following results:

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Negative labelling by teachers: The most important variable in the regression equation is negative labeling by teachers which enters at the first step of the regression process [beta =.20, p =.000].

Disrespect/respect from teachers: Relationship to teachers is underlined again by the second variable in the stepwise process ie., perceived respect vs. disrespect from teachers [beta =.11, p=.016].

Support from counsellors: Another feature of "support" is indicated by the third entry ie., support from counselors [beta=-.14, p=.002]. Thus, youth receiving encouragement from counselors are less likely to avoid school and dropout.

Encouragement vs. Discouragement from teachers: Relationship to teachers emerges once again at the fourth entry when encouragement from teachers enters the equation [beta =-.10, p=.058]. More encouragement implies less dropout.

Feeling of danger vs. safety in school: The final variable entering this regression equation perhaps implicates the community in which the school is located (ie., the degree of safety felt by youth in school). Safety in school is significant [beta =.09 , p=.05]. Youth who experience the school as a dangerous environment are more likely to withdraw and dropout. This is consistent with findings from other studies (Gottfredson 1983) and suggests that schools in more dangerous, perhaps inner city urban communities, have lower feelings of safety and more dropouts.

PREDICTING WITHDRAWAL/DROPOUT FROM
PEER RELATIONSHIPS OF STUDENTS

This section examines the manner in which peer relationships are associated with school avoidance/dropout.

Peer correlates of school avoidance/dropout: Wave 1 (9th grade) data

Peer variables are highly associated with withdrawal and dropout. All of the peer relationship characteristics - except attachment to peers - are significant at beyond the .05 level. The following associations may be noted.

- negative labeling by friends [r= .19]
- family role models for dropout [r= .11]
- dropout behavior amongst friends [r=. 16]
- delinquent peer groups [r= .28]
- emotional isolation [r= .11]

Peer relationship characteristics which negate dropout behavior and avoidance are:
- positive/conventional peer role models [r=-.13]
- social isolation [r= -.10]

The above relationships indicate a mild positive correlation between dropout and emotional isolation and negative correlation with social isolation. This apparent paradox suggests that while the dropout is socially integrated with a peer group, this group does not provide high levels of emotional support.

Multiple regression of peer relationship variables against school avoidance/dropout

Overall significance of the regression equation: The overall multiple regression equation reaches a high level of significance [F=9.34, p=.000]. The overall predictive power of this equation, however, is fairly modest [R =+.33] with an explained variance of only 11%.

Relative importance of specific peer relationship variables

The multiple regression equation has three significant predictors.

Delinquent peer group: This enters the equation at step one of the process [beta = .20, p =.0001].

Negative labelling by friends: At the second step negative labeling by friends enters [beta = .13, p=.005], indicating that the youth feels that he/she is perceived as a bad, failing, or socially deviant person by friends. This is consistent with being a member of a failing and

delinquent peer group. Presumably they share the same set of self perceptions.

Social Isolation: At step 3 in the stepwise regression social isolation enters [beta= -.10, p=.03]. This negative coefficient confirms that dropouts tend not to be socially isolated from peers but have a higher measure of social integration than most youth, although to a delinquent group.

Peer relationship Wave 3 as a predictor of school avoidance/dropout
Correlates of withdrawal and dropout

In this section we examine peer relationships that are more contemporaneous to the final withdrawal/dropout. Again the pattern of correlations are somewhat stronger than at Wave 1. The specific aspects of peer relations which correlate significantly at beyond the p=.05 level with school avoidance/dropout include:

- negative labeling by friends [r = +.28]
- dropout behavior among friends [r = +.26]
- delinquent peers [r = +.29]
- conventional peer role models [r=-.26]

Multiple regression analysis to predict withdrawal/dropout

Overall significance of the regression equation: The overall multiple regression analysis is highly significant [F =14.97, p =.000]. The multiple correlation of R = +0.436 indicates that 19% of the variance in the final withdrawal/dropout scale is explained by these predictor variables. This is almost double that predicted by Wave 1 peer variables [i.e.,. 11%].

Relative importance of the peer variables: Five of these variables reach highly significant levels at beyond p=.05 and enter the regression equation.

Delinquent peers: A powerful peer variable is affiliation with a delinquent peer group. This enters the regression process at step one [beta =+.16, p=.001].

Negative labeling by friends: This acts in conjunction with affiliation with delinquent peers. This is even more powerful (beta = .24, p=.000)

Dropout among friends: The importance of dropout behavior amongst friends emerges at step three. This characteristic reaches a highly significant level [beta =.17, p=.0009].

Positive role models for education: The final significant aspect is positive peer models for education [beta = -.11, p=.03]. This illustrates

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the importance of peers who retain concern and committment for education and attainment.

PREDICTING WITHDRAWAL AND DROPOUT FROM PERSONAL CHARACTERISTICS

This section examines the personal characteristics of youth that correlate with school avoidance and dropout.

Correlates using Wave 1 personal characteristics
The correlation coefficients of all personal characteristics reach significance levels at beyond the p=.05 level except for "value for independence". The following may be noted:

-normlessness [r=+.25].
-low self-esteem [r=+.12]
-interpersonal competence [r=.10]
-impulsiveness [r=+.13]
-self-reported drug use [r=+.33]

These indicate that normlessness - which assesses tolerance for social deviance, breaking social rules and failure to internalize - normative moral rules is highly correlated with school avoidance and dropout. This is consistent with the presence of drug abuse.

Personal factors mitigating against withdrawal/dropping out include:
- high learner self-esteem [r=-.18]
- identity developement [r=-.19]
- external locus of control/power [r=-.22]

Multiple regression using Wave 1 personal characteristics
Overall significance of the regression: The multiple regression equation using personal characteristics reaches an encouraging level of predictive accuracy. The multiple correlation of R =.43 indicates that 18.5% of the variance in final school avoidance and dropout is predicted by Wave 1 personal characteristics. The overall equation is highly significant [F = 15.50, p=.000].

Relative importance of personal characteristics: Five of the personal characteristics are significant in the regression equation.
Drug use: The most powerful predictor variable is self-reported

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substance abuse [beta =.28, p=.000] This is consistent with the correlation between substance abuse and school avoidance/dropout.

Internal locus of control: The second variable entering the equation is internal locus of control [beta =-.12, p=.01]. This indicates that powerlessness is associated with dropout, i.e.,. youth who have feelings of internal control tend to avoid dropout.

Learner self esteem: This third variable also mitigates against dropout. High learner self-esteem enters at step three [beta = -.12, p=.006] indicating that youth with a high self-esteem avoid dropout.

Normlessness: At step four normlessness enters the equation [beta = .12, p=.01]. This beta coefficient indicates that normlessness is associated with higher levels of avoidance and dropout.

Identity development vs. confusion: The final significant variable is identity development [beta = -.11, p=.03]. This indicates that youth who have higher identity development tend not to be dropouts.

Wave 3 personal characteristics and school avoidance/dropout

The above analysis was replicated using more recently available (Wave 3) data on personal characteristics.

Personal correlates Wave 3 against avoidance/dropout

The results for the final wave personal characteristics repeats the basic results of Wave 1. However, the correlations are generally stronger. All variables are significant at beyond p=.05 except for interpersonal competence and value for independence. Scales that significantly correlate with dropout include:

- normlessness [r=+.32]
- low self-esteeem [r=+.18]
- impulsiveness [r=+.37]
- self-reported substance abuse [r=+.48]

Thus, the strength of the correlations have increased. This is expected since these data are more contemporaneous to the final status of youth regarding dropout/school avoidance.

The following mitigate against school avoidance, at significant levels:

- learner self-esteem [r=-.12]
- identity development [r=-.16]
- power/internal locus of control [r=-.22]

Multiple regression analysis using final wave personal traits

Overall significance of the regression equation: This multiple
regression analysis is highly significant overall [F = 24.9, p=.000] The
multiple correlation, R= 0.56, indicates that 31.4% of the variance in the
avoidance/dropout outcome scale is predicted by personal variables. The
adjusted R square of 30.1% indicates that this predictive accuracy shrinks
little on cross validation.

Relative importance of the personal characteristics
Four of the personal characteristic variables reach high levels of
statistical significance at beyond the .05 in the regression equation.
Drug use: Again, self-reported drug abuse enters at step one [beta
= +.38, p=.000].
Impulsiveness: This enters at step two [beta =+.19, p=.000].
Internal locus of control:This mitigates against dropout at step
three [beta = -.09, p=.04].
Learner self esteem enters the equation [beta =-.09, p=.04].

Integrating the best predictors from different domains: Multiple regression using Wave 1 (9th grade) data

This regression analysis uses the significant predictors from
each of the separate domains as identified in the above analyses.
Overall significance of the regression equation: This analysis
produces highly significant results. The multiple R of +0.55 indicates that
30.3% of the overall variance in school avoidance/dropout is predicted by
9th grade data. The overall regression is highly significant [F= 17.6,
p=.000].
Relative importance of the predictors: This analysis may help
indicate the relative importance of the different domains i.e.,. family,
peer, personal, etc. The following variables enter the equation at the
different steps:
Past withdrawal/avoidance behavior: As expected at step one
school avoidance behavior at 9th grade emerges as the most powerful
predictor [beta =.24, p=.0000].
Family/School transience: The second most important predictor
reaches high levels of significance [beta =.17, p=.000]. This indicates the
high importance of family/s hool stability.
Parental achievement demands: The third significant variable is
parental achievement demands [beta = -.13, p=.001]. This indicates the
overriding importance of family dynamics and support for education.
Drug use: Finally, although drug use does not reach a high level of
significance it enters the equation at the fourth step [beta = .09, p=.08].

Thus, although the first three variables in the equation overlap in variance with drug use, this latter variable still contributes additional independent explanatory variance to dropout. However, it is far less important than the family structures and processes which clearly precede it in time and duration.

This analysis indicates that family and school variables account for virtually all of the variance included by the other predictor variables and that family processes are probably more important than school factors in predicting school avoidance/dropout. The earlier analysis indicate that factors from other specific domains have high independent predictive power in explaining school avoidance and dropout.

Integrating optimal predictors from different domains: multiple regression with final wave data

The above integrative analysis was repeated with Wave 3 variables.

Overall significance of the regression equation: This analysis produced the highest multiple R of any of the previous regressions(i.e., R = +.63). This accounts for 39.3% of the variance in withdrawal/dropout. The adjusted R square of 38.1% indicates little loss on cross validation and the overall equation is highly significant (F =30.81; p=.000).

Relative importance of different predictors: Examining the relative importance of the predictors the following emerge at various steps in the analysis.

Drug use: This is the highest predictor [beta = .30, p=.000].

Negative labeling by mother: This is the second most powerful predict_r [beta = +.14, p=.008].

Impulsiveness: The trait of impulsiveness emerges at the third step as highly significant [beta = .16, p=.003].

Parental support for education; Support from Counsellors: The next two significant factors tend to prevent school avoidance/dropout. Parental support for education is highly significant [beta =-.15, p=.0006] as is support from counselors [beta = -.11, p=.006].

Feeling disrespected by teachers: A feeling of being disrespected by teachers indicates the importance of youth-teacher relationships and school climate [beta =+ .09, p=.03].

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CHAPTER 10

AN EXAMINATION OF 177 COLORADO SCHOOL DISTRICTS:
DIFFERENCES BETWEEN HIGH AND LOW RISK DISTRICTS

Community structure and Dropout Rates across Colorado School Districts

Introduction

Dropout rate varies dramatically among cultural groups, communities and school districts. For example, dropout rates are higher for ethnic minorities, youth from poverty communities, low SES families, and inner cities. Although the national "average" is often reported as 25% of those entering high school, it may be as high as 50% or more in certain communities. Chicago has been reported as having a 43% dropout rate, with Boston reported as close to 50%. Ethnic and social class differences in dropout rates are dramatic. Rumberger (1987) using the1980 High School and Beyond data reports that dropout rates vary from 12.2 % for whites to 18.7% for hispanics; and from 8.9% for high SES youth to 22.3% for the lowest SES youth. Thus certain communities or neighbourhoods are at higher risk than others.

Community structure, contextual effects and educational behavior

Durkheim introduced the notion that community social structures influences individual behavior independently of individual characteristics. The influence of community structural variables is sometimes called the study of contextual or ecological effects. Contextual effects focus on numerous organizational and community variables e.g. school size, level of funding, student-teacher ratios, class and ethnic composition of neighbourhoods, social disorganization, and so on. It examines how neighbourhoods and school structural characteristics influence student behaviors, learning, aspirations, and ultimate outcomes such as achievement and dropout.

A classic paper by Wilson (1959) demonstrated the link between socio-economic composition of certain schools and educational aspirations of students. Blau (1960) also linked structural effects to educational outcomes. The basic argument is that educational outcome (e.g. dropout) is influenced not only by individual dispositions but also by social contextual factors.

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Studies of regional differences and high risk communities

Structural analysis is important in educational policy studies, e.g. resource allocation according to the educational needs of communities. Sherman (1986), for example, demonstrated that regional areas of the USA differ markedly in student populations in several critical respects which separate high and low risk communities with differing needs for educational and financial resources. Sherman using regression analysis on 1980 Census and School District Data illustrated the different importance of several social structural variables (student and school system characteristics, community characteristics) for student achievement outcomes. The following were critical:

- Poverty and low social class
- Parent educational attainment
- Family stability and transience
- Single parent families
- Proportions of handicapped children
- Levels of neighbourhood crime and drug abuse
- Non English language backgrounds, and so on

The last of these high risk features, is more prevalant in the southwest and south Florida areas, while many southeast areas were relatively high regarding poverty families but low in proportion of children from non-English language background. The Rocky Mountain Regions were low in incidence of children in poverty and single parent families but somewhat higher than average in proportions of handicapped and non-English language background. Sherman (1986) demonstrated that poverty had the largest negative impact on achievement and was more important than non-English language background. Low educational attainment of the mother was also an important predictor.

Community characteristics influencing educational outcomes

A large body of research has identified several critical community characteristics which influence the educational achievement levels of communities. The following are some of the major community structural influences:

1. Norms and values of Neighbourhood/Communities

The norms, values and beliefs which children and youth encounter in their communities are critical in socializing the youth for education and schooling. Values and beliefs are thought to derive from the social milieu of family and community (Wilson 1959). Communities, with

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concentrations of similar people holding similar standards and beliefs will encourage adherence to these norms and beliefs. For example, a middle class community provides a milieu in which children learn positive attitudes and values regarding education. Contextual analysis assumes that the causal link between social community context and individual outcome is provided by normative values and beliefs (Blau, 1960).

An example of this link between educational values and community differences is given by Thurston (1964) who examined aggression and problem behaviors in youth from different demographic and community types. Structural variables included the cultural milieu and the goals and standards prevailing in neighbourhoods. Third, sixth, and ninth grades were examined. Children were grouped as exhibiting acceptable or unacceptable aggressive behavior habitually in school. Classroom behavior was classified into neurotic, psychopathic and problem behaviors. These student behavioral groups were cross classified against demographic and community variables. Thurston concluded that unacceptable and aggressive behavior was correlated with children from disadvantaged families. These youth exhibited higher levels of argumentative behavior, low opinion of adults, rejection of parents, a non-classroom orientation and lower intelligence than children from middle class families. McLoud (1987) similarly documents problem behaviors among poor inner city minority youth and uses the concept of "cultural capital" to describe the beliefs, norms and aspirations which children from different cultural backgrounds bring into the school.

Social Disorganization of neighbourhoods

The level of social disorganization of a community is a second critical pattern in contextual analysis. Poverty, transience, crime, drugs, poor housing, low social cohesion, unemployment and cultural heterogeneity have been consistently linked to youth problem behavior and dropout (Fellin and Litwak 1968; Kornhouser 1978; Jonstone 1983). Communities characterized by poverty, transience, drugs, etc., are seen as enveloped in social forces and processes conducive to adolescent deviant behavior.

Inadequate Family Socialization in socially disorganised communities

Community disorganization (high mobility, crime, etc) and family crises (e.g. divorce, parental discord, death of parent, unemployment) have been consistently linked to inadequate socialization and consequently weak ties to societal goals, norms and values (Elliott, et. al.1985). Such disorganized communities seem to provide an inadequate milieu for the successful socialization of children and youth. The argument is that children and youth when surrounded by social disorganization and societal isolation may detach and become relatively unaffected by social controls against problem behavior such as dropout. Ekstrom et al (1988)

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identified isolation from parents as a correlate of school problems. Brooks, Nomura and Cohen (1988) found that certain neighborhoods were associated with nonconflicted and affectionate parent/adolescent relationship and supportive parental attitudes regarding education. Fellin and Litwak (1968) in examining urban neighborhoods argue that the community is critical in socializing youth with values, beliefs, and attitudes and that social isolation and disorganized families must become a focus of intervention efforts.

A high prevalence of single parent families, many of which are in poverty, is also a symptom of social disorganization and of an inadequate context for socialization of children and youth. Rumberger (1983) reports that dropping out is twice as likely in single parent than in two parent families. Numerous minority families are composed of female single parents and children. Thus, divorce, separation, and poverty are linked to the dropout problem.

Family transience also produces serious disruption in a youth's school career. This is shown by the high number of elementary, junior high and high schools attended by youth who eventually dropout. Many relocations appear to seriously disrupt school learning, school committment and attachment.

Differential community sanctions against dropping out

Nye (1982) arguing from choice and exchange theory suggests that dropout rates will vary across communities because of differing local community attitudes about cost and rewards of dropping out. In communities where dropping out seriously violates local norms, dropout behavior will incur more costs than in communities where dropout does not violate social norms. Clear differences have been found to exist in norms and attitudes of different communities regarding the relative value of education (McLoud 1987).

Family and community attitudes to education and dropout are critical in providing both sanctions and supports to youth (Jessor and Jessor 1977). Parental attitude to education and dropout varies enormously across different cultures and communities. Some parents are apathetic regarding education and provide little emotional support to the youth to finish high school. They may exhibit a relatively tolerant attitude to dropout, impose little pressure for achievement and hold low expectation for educational future of their children. This provides a setting with virtually no sanctions against dropping out.

Such norms of apathy and low expectation may be contrasted to communities where education is valued as a critical aspect of social advancement and where strong pressures are placed on children and youth to succeed. In these communities family support and involvement are focussed, continuous and strong. Parents in these communities are interested in school policies/practices, they monitor the in-school and

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out-school activities of the youth, help with homework, provide extra learning materials, and participate with the youth in making major educational decisions (e.g. choosing a high school curriculum, selecting a college, planning for future careers, etc). Youth in this latter type of environment receive multifaceted input and help from parents. This encourages attitudes and values which strongly support schooling, teachers and education, as well as supporting the youth's aspirations.

Differential exposure to dropout role models

Communities profoundly influence the peer group to which a youth affiliates, as well as the choice of best friends and peer activities (Wilson and Hernstein,1985). Some neighbourhoods have disproportionately high levels of school dropout, youth unemployment, drug trafficking, gangs, weak sanctions against dropout and drug use, and so on. Pressure for gang recruitment is a serious contextual problem (Johnstone 1983) and is strongly correlated with youth problem behavior. Jessor and Jessor (1977) use the concept of differential exposure to conventional vs. anti-social peer groups as a critical factor in their causal theory of youth problem behavior. Their theory implies that some pathways to dropout can be mainly due to peers, with neighborhoods providing an integrative social setting to create common behavioral patterns and shared attitudes and values among youthful peer groups.

In many poor neighbourhoods, youth experience powerful peer pressures to dropout, use drugs, join gangs, and to disregard the importance of school (McLoud 1987; Fine 1986). Many youth in such settings are vulnerable to these pressures. Teenagers have a strong natural desire for peer acceptance, popularity, and a sense of belongingness to their peer culture. Yet, the prevailing norms of their community culture, and especially of same-age peers, may be profoundly anti-educational.

Conversely "good neighbourhood" are characterized by low dropout, low deviant behaviors, low drug use, peers who value school, who have high aspirations and plans for vocational or college education (Wilson and Hernstein 1985). Such neighborhood settings provide conditions for conventional and socially supportive peer groups. Youth living in such neighborhoods have been found more likely to be non-deviant, non-drug using, successful in school, able to get along with peers and to affiliate with friends with conventional attributes.

Learning from peers is an essential component of sub-cultural and social learning theories of deviance. Role models of educational success or failure are provided by peers and family. Different kinds of role models are prevalent in different communities. Youth with intense involvement with dropout peers, whose best friends or siblings have already left school, are continually exposed to survival skills of the

dropout, as well as attitudes regarding education and work which dropouts may used to support their decisions. Such a context seldom values education or school.

School as a microcosm of the neighbourhood; School Climate

The school milieu and educational climate may be directly influenced by social conditions surrounding the school. Brook, Nomura and Cohen (1988) found that neighborhoods with good living conditions, family cohesion and stability and good social supports, were linked to schools which evidenced little conflict and which emphasize student independence, achievement and positive learning. Neighborhoods with strong social networks, containing adults with high values for education have schools with higher educational effectiveness. They conclude that the school environment is microcosm of the neighborhood environment.

It is well known that in small rural towns - as opposed to larger urban areas - social ties are usually stronger and the school operates as a stronger socializing agent. Smaller and less crowded schools, smaller class sizes, and smaller teacher/student ratios, may all combine with the more stable family social milieu to produce a school climate that positively influences educational outcomes. Rural dropout rates, not surprisingly, are substantially lower than in most urban areas (Rumberger 1983).

Goals of the present chapter

We note that dropout rates and educational success indicators vary dramatically across the 177 school districts of Colorado. Some districts have almost 5 times the dropout rate of other districts. Standardized test scores vary significantly. This chapter attempts to examine and explain the reasons for such dramatic differences between high and low achieving communities. The chapter examines this problem using community a social structural perspective and data as reviewed above. We will develop community profiles of high and low risk districts, explore differences between urban and rural areas, and between high and low socioeconomic communities. A typology of Colorado School Districts is developed to clarify differences between high and low risk school districts. Some specific Purposes of community analyses include the following:

1. Identify Community influences on dropout across Colorado School Districts?
2. What School District/educational characteristics influence differential dropout rates?
3. Clarify the relative importance of Community vs School District factors?
4. Identifying and describe types of "high-risk" communities

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5. Estimate and describe the "service needs" of these communities, and provide data for policy interventions
6. Provide explanatory models for educational failure based on ecological structural variables
7. Prediction of dropout from community characteristics

The above uses of structural analysis are important in policy forecasting related to sociodemographic changes, resource shortages, and planning. In a forecasting study of socio-demographic changes for educational planning Neal (1979) surveyed 1,400 members of the American Association of School Administrators (AASA) regarding community and school district factors influencing school retention. Demographic and economic projections were critical in producing more informed educational planning and resource allocation decisions.

A further policy use is the estimation of differential needs in different types of school districts. Structural factors such as community and neighbourhood characteristics force attention on comparative performance in both achievement and dropout rates. This forces educational policy makers to consider community differences and the consequences of these differences for educational outcomes. This has profound implications for funding categorical programs in target communities.

The U.S Department of Education has produced a document entitled "Indicators of Status and Trends" (1985) utilizing structural analysis to clarify regions with high concentrations of children with "high risk" characteristics which predict low achievement, high dropout and high service requirements. Statistical indices were developed to quantify educational and resource requirements using the mix of children with various characteristics, and relative weighting of the high risk characteristics (e.g.: poverty, limited English proficiency (LEP), children from single parent families, children whose parents have not completed a high school education, and so forth).

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Sources of Data for Colorado
School District Analysis

This structural analysis of 177 school district communities in Colorado is based on data obtained from the annual reports of the Colorado Department of Education, and the U.S. Department of the Census. The information for school districts covers social, economic and demographic data, as well as educational, student and teacher characteristics. The main data sources were as follows:

1. Educational information on Teachers salaries, qualifications, pupil/teacher ratios and so forth was obtained from: "Certificated Personnel, Pupil Membership and Related Information, Fall 1985", prepared by the planning and evaluation unit of the Colorado Department of Education (March 1986).

2. A second source of educational information was: "Revenues and Expenditures, Calendar Year 1985" (June 1986), prepared by the Colorado Department of Education . This document primarily provided financial expenditures.

3. Standardized achievement tests for Mathematics and Reading (ITBS scores) were obtained as averages for all 177 school districts. These scores were also made available from the 2+2 Project of the Colorado Department of Education.

4. Census data, covering social, ethnic, demographic, educational, employment, and economic data was obtained from the National Center for Educational Statistics, and the State of Colorado Department of Local Affairs. This data covered all school districts of Colorado and was adapted from 1980 Census data and recalculated to exactly fit the 177 school districts.

Factor analysis to create composite variables
The first step, given the complexity of this data a series of factor analyses were used to produce "composite" variables to summarize and organize many specific variables into "indices" with minimal loss of information. The following are the results of the factor analyses:

1. Factor analysis to summarize School District Dimensions

The first factor analysis aimed to simplify the set of school district variables. A principal components analysis was conducted, followed by Varimax rotation. Kaiser's rule for selecting the number of factors was used i.e. eigenvalues greater than 1. Three major factors summarized these variables.

Factor 1: District Size-F This represented a composite of variables indicating the overall population size of a school district. This serves to separate high population urban areas from low density rural areas. It is defined by the following, loadings are indicated in parenthesis:
- total number of teachers in a district (.96),
- total number of boys in a district (.88),
- total district population obtained from census data (.95),
- the total number of youth remaining in school between the ages of 16-19 years (.95).

Factor 2: $Student-F This factor integrates variables indicating dollars spent on students. It is defined by:

- the dollars spent for instructional purposes (.95)
- the pupil-teacher ratio (-.74).
- the overall dollars spent per pupil (.81).

This factor separates districts with larger financial resources and expenditures vs districts with fewer resources spent on each student. The negative loading on pupil/teacher ratio indicates that areas with high dollars expenditures per pupil have smaller pupil/teacher ratios and smaller classes. The emergence of this factor and the size of the loadings indicates that it is a meaningful single composite representing financial resources spent on students.

Factor 3: Teacher qual-F This factor integrates variables indicating teacher qualifications and experience. It is defined by:
- total years of experience (.98)
- number of years in this particular district (.93)
- proportion of teachers with a Master's level degree (.55),
- salary level of the teacher (.46).

This factor summarizes the variables representing teacher experience, qualifications, and salary. The separation of "years experience"

from the salary and economic variables suggests that there may be some wisdom in maintaining these as separate scales. Teacher salary and educational qualifications, in fact loaded on factor 1 (urban/size factor) suggesting that urban teachers make higher salaries and have higher educational level (generally) than in rural districts.

Relative Importance of the School District Factors

The three factors account for a substantial proportion (80%) of the information contained in these school district variables.

Specifically, factor 1 accounts for 47% of the overall variance in these eleven variables. Factor two (dollars spent per student) accounts for about 20% of the variance while factor 3 (teacher qualification), accounts for about 13% of the variance. Cumulatively, the three factors account for nearly 80% of the information included in eleven school district variables.

Correlations between the factors

Factor 1, District size (Urban) correlates with Factor 2 (higher teacher qualifications) at $r = +.35$. This correlation suggests that in the larger urban school districts, teachers tend to accumulate longer years of experience and have higher salaries. Another explanation may be that there may be a higher turn-over rate and therefore, less experienced teachers in rural areas.

2. Factor analysis to clarify socio-economic dimensions

A factor analysis using principal components and varimax rotation was conducted on the socio-economic variables of the school districts. These variables included financial, educational, and occupational characteristics of the districts. The variables involved were:

- rent level,
- percent adult drop outs,
- percent adult college graduates,
- percent adults in managerial occupations,
- poverty ratio of the districts.

The basic correlation matrix indicates that all these variables have fairly strong relationships to each other. The "variable sampling adequacy" shows that the total matrix sampling index was .755 indicating strong coverage of relevant variables. Two factors emerged:

Factor 1   Socioeconomic financial Status-A (SES-$)
This is a financial factor and is defined by:

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- rent level (-.80)
- poverty ratio (.72).

These loading indicate that this factor distinguishes between school districts with high poverty ratios/low rent versus high rent/low poverty ratios. This factor has been named SES-$. The scoring direction is such that a high score indicates low financial status.

Factor 2 Socioeconomic (Educational) Status- B (SES-OCC)

This socio-economic factor does not emphasize financial variables since rent level and poverty ratio have zero loadings on the factor. It is defined by:

- the percent of adults in managerial occupations (.88)
- the percent of adults who are college graduates (.62).
- the proportion of adults who are drop outs (-.50).

A high score indicates high educational and occupational status. This factor, therefore, represents an aspect of social class emphasizing education and high status occupations. The name given to this factor is SES-OCC.

Sizes of the Socio-economic Factors

The two main factors from this set of correlations account for almost 70% of the variance. The first factor accounts for 51% of the variance, and the second 17% of the variance. Thus, almost 68% of the information is retained by the two factors. The factors were rotated to an oblique solution reference structure.

Correlations between the social class factors

These two oblique social class factors have a sizable negative correlation with each other. A high score in factor 1 (Poverty) indicates a low score on factor 2 (occupational and educational status). This indicates that the scoring direction of factor 1 is reversed from the intuitive direction; i.e., a high score on factor 1 indicates poverty. A high score on factor 2 indicates high levels of education and occupation.

Factor Analysis to create an ethnicity index for each district

Factor Analysis of the various ethnicity and community variables (%Anglo boys, %black boys, %Hispanic boys, % urban areas, and % foreign born) produced only one major factor. This factor distinguishes

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districts with high versus low levels of minorities, particularly Hispanics. It might be defined as an Anglo vs Hispanic factor and is defined by
- Hispanic boys (.96),
- Anglo boys (-.93).

It might be noted that the zero order correlation between these two variables is r=-.82. Thus, they almost represent bipolar opposites of one another and consequently fall into a single bipolar factor.

The proportion of black boys in each neighborhood has no clearly defining loading on the factor. The proportion of black boys seems strictly limited to highly urban areas in Colorado. The correlation between percent urban and percent black boys is r=.55. Hispanic youth on the other hand live equally in both urban and rural districts.

Factor analysis to develop educational attainment indices

A factor analysis was also conducted on the State Department standardized achievement scores (reading and mathematics) as well as the Census variables indicating school retention (%16-19 still in school; and Census Dropout Percentage). The correlation matrix between these four variables are instructive.

1. The two achievement levels correlate together at a very high levels (i.e., reading and mathematics standardized tests have a positive Pearson correlation of r=.75).

2. The retention score from the census data (%16-19) correlates at -.33 with the census drop out ratio. This is a significant score in the expected negative direction; i.e., higher retention levels imply lower drop out rates and thus supports the validity of both measures by indicating a significant relationship between them (beyond p = .01). When these variables are factor analyzed two basic factors emerge:

Standardized Test Factor

This standardized test factor is defined by high loadings on the two achievement scores, and clearly represents a composite of the achievement tests i.e.,
- reading (.91)
- mathematics (.93).

Census Drop Out Factor (Hitorical Retention power of districts)

This is defined by a high loadings on the following:
- Retention of youth in school (.82)
- Census drop out ratio variable (-.77).

Thus, the scoring direction of this factor is such that it should be named a retention factor. A high score for a district represents low drop out rates and high retention ratios.

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The diversity in dropout rates
across Colorado communities?

We now describe variation of dropout rates across 177 school districts in Colorado. The graphs and tables below indicate the statistical distributions. These demonstrate great variation in both levels of achievement and dropout rates. Separate statistics are presented for:

1) <u>Special Education and Handicapped</u> rates (H-SE DO%)

2) <u>General Dropout</u> rate for mainstream youth.

Special Education Dropout Distribution

The table below indicates that the annual dropout rate for special education and handicapped youth in this state was 1.96% <u>annually</u> (1986 reports) averaged across all districts. However, this average is misleading since there was such great reported variation between districts. The variance of this distribution is almost as large as the mean (1.24).

The maximum district reported an annual rate of 5.1% , while the minimum was close to zero (.2%). The distribution is skewed with many districts clustering in the 0-2% range, and a long tail moving towards the more severe end of the distribution. The percentile figures indicate that 50% of all the districts have a mean special education dropout rate of 1.6% or less.

X_2: H/SE drop%

Mean:	Std. Dev.:	Std. Error:	Variance:	Coef. Var.:	Count:
1.957	1.116	.084	1.245	57.005	177

Minimum:	Maximum:	Range:	Sum:	Sum Squared:	# Missing:
.2	5.1	4.9	346.4	896.98	0

# < 10th %:	10th %:	25th %:	50th %:	75th %:	90th %:
6	.8	1.1	1.6	2.5	3.8

# > 90th %:					
15					

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Mainstream dropout rates across School Districts

Turning to mainstream dropout rates, the distribution and means across the 177 school districts are presented below. The mean annual percentage dropout across the districts is 4.4% and is thus substantially higher than that of Special Education and Handicappped youth. This contradicts some of the national literature which asserts that the dropout rate among special education youth is higher than mainstreamed youth.

Again, the distribution is very skewed with 50% of the districts reporting annual dropout rates of less than 3.9%. However, at the other extreme 10% of these districts report an annual dropout rate of greater than 9.5%.

X_1: D/O rate9

Mean:	Std. Dev.:	Std. Error:	Variance:	Coef. Var.:	Count:
4.398	3.726	.28	13.884	84.728	177

Minimum:	Maximum:	Range:	Sum:	Sum Squared:	# Missing:
0	20.8	20.8	778.4	5866.78	0

# < 10th %:	10th %:	25th %:	50th %:	75th %:	90th %:
0	0	1.675	3.9	6.25	9.5

# > 90th %:					
17					

The same data for normal and for special education annual dropout rate is shown below using percentile plots.

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Percentiles Plot for columns: $X_1 \ldots X_2$
○ D/O rate9   □ H/SE drop%
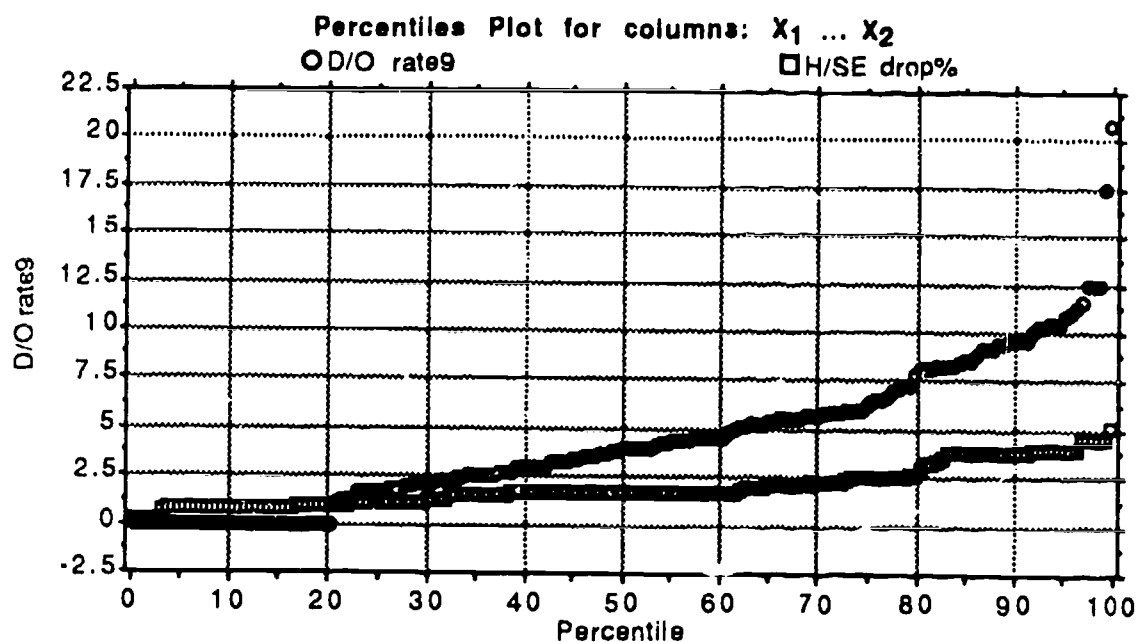
The plots indicate rates of General and Special Education dropout across all 177 school districts. As can be seen there is a great diversity of dropout rates across districts. Some districts have multiple the dropout rates of other districts. The general rate is substantially higher than the rate for Special Education Dropout.

Correlations between dropout rates of different groups of students

This section examines how the special education dropout rate correlates with the rates for mainstream youth of different sex and ethnic breakdowns. A major finding is that the correlations of dropout rates in various ethnic and sex stratifications using State Education Data and rates from the Census have significant correlations with each other, and reinforce each other. However, dropout rates for special education and handicapped youth has only a moderate correlation with these group rates for other stratifications. Differences depend on the specific strata used to compute the correlations.

Special Education vs. Overall Dropout rate:
The special education dropout rate is substantially lower than the general dropout rate although is has a similar pattern across the districts.

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It correlates at $r = +0.34$ with the overall mainstream dropout rate. This is encouragingly high given the different geographical aggregates used to compute special education dropout rates (i.e., Special Education dropout rate is reported only for Administrative Units, while mainstream rates are reported using separate School Districts as the unit).

Overall Dropout Rate vs. various sex/ethnic groups:

The overall aggregate rate (across all ethnic and sex groups) correlates with dropout rates from specific ethnic and sex strata, across the school districts, as follows:

- Anglo Dropout rate (r=.90),
- Hispanic dropout rate (r=.72)
- Black dropout rate (.35)
- Male dropouts (r=.91)
- Female dropouts, r=.88).

The lower correlation for Black dropout rate reflects the fact that in Colorado Black youth are concentrated in larger urban areas, and that in many rural districts there may be very few or no Black students. This reduces the general covariation between the overall dropout rate and the Black student dropout rate.

Hispanic youth are represented quite well in both urban and rural districts, and there is a high similarity in the pattern of correlations across the districts. The total dropout rate also has high correlations with the overall dropout rates for male and female dropouts.

Factor analysis based on intercorrelation between all dropout rates:

These high mutual intercorrelations suggest that the different dropout rates may be summarized by one factor. Thus, a factor analysis was conducted to integrate these separate scores. This again demonstrated the mutual intercorrelation of dropout rates from all different ethnic and sex stratifications.

When this group of dropout rates is factor analyzed they all enter one large "dropout" factor. The factor loadings confirm the conclusions of the bivariate patterns. The loadings for the specific stratifications are as follows:

- Total dropout rate (.95),
- Anglo dropout rate (.94),
- Hispanic dropout rate (.60),
- Black dropout rate (.69).

The strength of these loadings suggests that the correlations of separate ethnic and sex dropout rates is captured by the single pattern of correlations of the large dropout factor, and that not much will be gained by examining the specific correlates of different ethnic and sex groups.

Comparing dropout rates from 1980 Census against 1986 State Department of Education rates

Using 1980 Census data we examined the link between 1980 census dropout indicators with 1986 School District rates as supplied by the State Department of Education. Since there are profound differences between these two measures one would not necessarily expect high correlations. The two sources are separated by 6 years, they use different data collection procedures, and different aggregation procedures, etc. However, since they assess an overlapping phenomenon (i.e., youth leaving school before graduating) we examined their correlations to each other. A high correlation would indicate that good and bad districts tend to be stable over time, and that the patterns of low and high dropout rates are the same for the two approaches. The following questions were addressed by this analysis:

- What is the consistency between these two data sources?
- What is the relation between community demographics and school district dropout rates?
- What can we learn about the consistency of District Performance across a 6 year time span?

The results of correlating the two data sources were encouraging. School district 1986 rates and Census Data 1980 dropout indicators had generally positive and significantly positive correlations with each other. The school districts general dropout rate (1986) correlated against the Census dropout percentage (1980) at $r= +0.45$ and against the census dropout "factor score" at $r= +0.27$. These correlations, although moderate,

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indicate a significant statistical relationship between 1980 census dropout rate and 1986 School District dropout rates.

If these two rates had been, in fact, based on the same year, the same geographical aggregation, and used the same operational measure to assess dropout levels, these correlations would undoubtedly be very strong. This finding supports the validity of these two institutional approaches to measuring dropout rates, and is encouraging given the disparaging remarks in the educational literature regarding the low reliability of official school district dropout rates. Two conclusions may be drawn:

1. Although there may be specific distortions in specific districts, the general pattern of high and low rates across all Colorado School districts appears to have a reasonable degree of validity.

2. The pattern of District scores (i.e. low/high rates) in 1980 were approximately repeated in 1986 - although comments about specific districts are hazardous since several districts moved higher and others lower in the rankings).

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What kinds of communities have high dropout rates?

We now examine the social demographic and school district qualities which produce low and high dropout rates.

Special Education dropout rates and Community/District Characteristics

First we focus on social and demographic correlates of Special Education and Handicapped dropout rates. As expected, given the aggregation into Administrative Units as opposed to specific School Districts, some of the variance on the special education dropout rate is lost. Thus, correlations between community, social and school district variables against Special Education Dropout rates are expected to be lower than those for overall dropout rates, which were based on School Districts. The following findings may be noted:

Socio-Demographic characteristics of School Districts with high special education dropout rates

Although the correlations between social conditions and special education dropout rate are moderate, they underline the link between low social class and and high dropout rate among special education dropout rate. The correlations are as follows:

- Low Social Class districts (Education factor) have higher 1986 special education dropout rates (r = - .15)
- Districts with more manual workers have higher special education dropout rates (r = +. 22)
- Districts with larger numbers of adult dropouts (1980 Census) have higher 1986 special education dropout rates (r = + .14)
- Districts which had a high dropout rate in the 1980 census have a high 1986 special education dropout rate (r = +.26)
- Districts with more college graduates in the adult population (1980) have lower rates of special education dropouts (r = -.13)
- Family Disorganization: Districts with a high rate of single mother heads of household (1980) have a higher 1986 special education dropout rate (r = +. 22)

These correlations indicate that low socio-economic districts, with a low "educational factor", and high family disorganization have higher special education dropout rates.

There was no relation between urban-rural differences and special education dropout rates (r = . 009), nor between district ethnicity and special education dropout (r = .05). Furthermore and surprisingly, both the poverty ratio (r = .03) and the financial dimension of social class (SES-$, r = -.07) fail to correlate with special education dropout rate.

1980 census measures of both adult and teenage dropout rates correlate with 1986 special education dropout rates. These correlates suggest that districts with a historical record of poor performance generally perpetuate this low performance over time. Thus, a major factor influencing special education dropout is the general educational level of a district.

Special Education Dropout and School District (1986) Characteristics

Using the second data set from the school districts, a consistent pattern links school district educational variables to special education dropout rates for 1986. The following are of interest:

- Low Funding Levels: Districts which spend less money on youth have higher special education dropout rates. This is true for both dollars spent on instruction (r = -.19) and overall dollars spent per pupil (r = -.17). As noted, these correlations are moderate.

- Achievement tests: Districts with low scores on standardized achievement tests have higher levels of special education dropouts. This is true for ITBS-Math (r = -. 24) and ITBS-Reading (r = -. 16).
- High General Dropout Rates: Districts with high general dropout rates also have high special education dropout rates (r=. 34;

The above correlations indicate some general conclusions i.e. that special education dropout is associated with socially disorganized, low social class districts, with a history of poor educational performance, and lower than average financial resources available per youth.

It is worth noting that this profile predicts not only special education dropout but also high dropout rates in general. We turn now to the more general correlates of dropout rates.

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General Dropout and socio-educational profiles of School Districts

We now explore social, demographic and school district characteristics correlated with general dropout rates across districts.

Again, we examine firstly the community characteristics of school districts, and then school district resources (e.g. pupil/teacher ratios, qualifications and experience of teachers, average expenditures on pupils, and so on.

Community social characteristics and dropout rates (1980 Census)

The 1980 Census Data and 1986 State Department of Education data is used to clarify the social and community correlates of dropout rates (both overall and for various ethnic/sex stratifications).

1. Urban-Rural Differences:

Dropout rates are higher in urban areas. Urban districts have the following correlates which help to understand their higher dropout rate:

Minority concentrations

- Black populations are concentrated in urban areas (r= +.52)
- Foreign born are concentrated in urban areas (r = + .49)

Family Disorganization

- Single female heads of households are higher in urban settings (r = + .34).

Higher social class in urban areas (generally)

Off-setting the above tendencies is the finding that the social class "educational factor" is generally higher in urban areas - with more highly educated persons, fewer adult dropouts, and more persons in managerial jobs:

- Social class factor (educational component) (r=.+26);
- More college graduates (r= +.29)
- Fewer people below the poverty ratio (r = -.33)
- Fewer adult dropouts (-.37)
- More persons in managerial jobs (r = +.31).

Given these profound differerces between urban and rural distiicts, correlations based on the overall sample are frequently misleading since they do not separate urban and rural differences, and are therefore confounded with this major ecological difference. These urban-rural differences mediate all global (sample-wide) relationships and introduce interaction effects which modifies the meaning of all samplewide correlations.

The influence of this urban/rural distinction is clarified by regression analysis, where Urbanicity <u>alone</u> accounts for nearly 13% of the variance in dropout rates. Furthermore, the influence of urbanicity is not limited to direct effects. Other variables (e.g. those measuring poverty ratios, rent levels and teacher salaries for instance) are so heavily mediated by whether a district is urban or rural that it is difficult to evaluate the true effect of these variables when relying only on "statewide" correlations.

These mediating effects provide a warning against simplistic interpretation of bivariate correlations based on "statewide" samples of school districts without investigating the interaction effects linked to urban-rural differences. These interaction effects are examined later using cluster analytic analysis of school district typologies.

2. Social Class and Dropout Rates

Social class is represented by two factors which emerged from the factor analysis of census data: 1) The SES-financial factor brings together community financial descriptors e.g. salary levels, rent levels, and other indicators of financial success. 2) The SES-education factor integrates community indices suggesting high educational levels in a district

Overall there is a weak negative correlation between social class and dropout. Both financial and educational social class factors correlate negatively with dropout rate. This negative correlation recurs for both male and female dropout rates.

Higher social class districts spend slightly more money on average than lower social class districts. However, these differences are moderate. Higher social class correlates moderately with higher dollar expenditures per pupil for the educational factor ($r= +.16$) and for the financial factor ($r=+.11$).

Interactions between Social Class, Ethnicity, Urbanicity and Dropout Rates

The correlational patterns, present a complex set of interactions between social class, ethnicity, urbanicity and dropout rate.

Patterns in rural areas: Specifically, many rural (low urbanicity) areas have jointly a high poverty ratio, low social class, fewer adult role models with higher education, and a higher percentage of Hispanics (r = .33).

Patterns in High social class areas: The higher social class areas in general have fewer minority youth and more anglo youth. Thus ethnicity and social class are also linked by several mediating variables. For instance, the percentage of adult college graduates in a district has a negative correlation with the proportions of Hispanics in it's school population (r=-.35) i.e., "well educated" areas have fewer Hispanic youth and more Anglo youth. Additionally, areas with higher adult socio-economic status have higher student achievement scores. This is true for both the education and economic factors of social class. Thus, higher social class areas have the following characteristics

- higher proportions of Anglo
- higher percentages of college educated adults,
- higher achievement scores and lower dropout rates
- fewer minorities.

Thus, urban areas must be distinguished into higher and lower social class levels. These correlations demonstrate interactions between social class, dropout rates, ethnicity and urbanicity.

4. Family disorganization, Urban-rural differences and Dropout

This critical variable is also implicated in the urban-rural and social class differences. Family disorganization in the 1980 census data is partially reflected by the number of single female headed families divided the number of two parent families; i.e., a ratio of broken homes divided by intact homes.

The literature suggests that broken homes is one of the correlates of dropout. The correlations in the present data supports this conjecture. Family disorganization correlates strongly with 1986 State District dropout rates as follows:

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- Overall dropout rate (r=+.30),
- Handicap and Special Ed dropout rate (r=+.22)
- Male dropout rate (r=+.37).
- Family disorganization also correlates negatively with achievement scores and standardized tests.
- Family disorganization correlate with percentage of minority youth (r=+.32).

Thus, we can conclude that school districts with high family disorganization have high dropout rates, lower achievement scores, higher minority populations, and higher poverty ratio.

However, the strength of this variable as a predictor of dropout varies widely across the categories of dropout, and there is an interaction with the sex of the student. Specifically, although the number of female heads of households in mildly positively related the overall dropout rate (r = .11), and is unrelated to Hispanic dropout rates, or with female dropout rate. However, for male dropout rates this variable accounted for 10% of the variance.

5. School District Ethnic structure and dropout rate

In this section, we examine correlations between schools' reported dropout rates and ethnic structure of the student population of a district.

High anglo proportions implies lower dropout rate: A first finding is a negative correlation between the proportion of Anglos and overall dropout rate (r=-.21). This holds for male and female dropout rates (r= -.22 and -.17, respectively). These are not overwhelming correlations. Their modest size indicates that ethnicity alone - although significant - is not a powerful predictor of a district's dropout rate, and that other explanatory features must be sought.

Higher minority proportions implies higher dropout rate: Turning to the minority proportions of the school district student population, as expected, a mild positive correlation exists between minority status and dropout rate. Specifically, the %'s of Black and Hispanic boys correlates at r=.28 and r=.10, with dropout rates for these two ethnic proportions. These figures again indicate a weak positive correlation between the proportion of minority students and dropout rates.

This mild connection between minority proportions and dropout reappears in factor analytic studies, where the Hispanic/Anglo factor correlates at $r= +.17$ with overall dropout rate and at $r= +.15$ and $r= +.12$ for separate male and female dropout rates. We can assert that dropout rates are slightly higher in areas with larger %'s of Hispanic and, more particularly, Black youth.

The Hispanic/Anglo factor is by far the weakest of the variables in the regression analyses against dropout rates for all ethnic and sex categories. In no instance did the factor reach the $p = .10$ level of significance. This simply reaffirms the moderate size of the above correlation coefficients.

Complexities and interaction effects with ethnicity:

Caution must be exercised with such total sample correlations since the data indicate interactions between ethnicity, social class, urbanicity and dropout rates.

The slightly higher correlation between Black youth and dropout rates underlines the fact that Black youth in Colorado are usually located in urban districts with larger and more crowded schools. The confirmation of this is shown by the high correlation between % of Black boys in a school and urbanicity ($r=.+52$) and size of the school district. When certain rural districts, with few or no black youth, are excluded from the analysis, the correlation between the % of Black boys and total dropout rates jumps to $r=.33$. This suggests that inner city areas (urbanicity) with higher proportions of black youth, higher poverty and higher family disorganizaation have substantially higher dropout rates. The overall sample wide correlation does not reflect this interaction.

The data suggest that Colorado Hispanic youth reside more evenly in urban and rural districts. This is shown by the mild negative correlation between urbanicity and the proportion of Hispanic boys ($r= -.20$). It is likely that just as there is a differential dropout rate between urban and rural districts, the dropout rate for urban Hispanics is higher than for rural Hispanics. This is confirmed by the small but significant zero order correlation between urbanicity and Hispanic dropout rate ($r= +.19$).

Ethnic Compatibility between teacher/student and Dropout rates

Several statements in the literature have argued that cultural incompatibility between teacher and student may be a profound cause of minority dropout. Much of this is based on qualitative research (e.g. Fine 1986; McLoud 1987). There is a dearth of studies examining this issue

with objective statistical indicators. Thus, we use the present data to provide a brief examination of the issue.

Firstly, the correlations indicate that dropout rate has a very weak no relationship with the teacher ethnicity e.g. the overall dropout rate correlates with percentage of Anglo teachers at r= -.11, and with percentage of Hispanic teachers at r=.06.

Secondly, on examining the Hispanic dropout rate we find virtually no relationship beteween Hispanic dropout rate and percentage of Hispanic teachers (r= -.03).

Thirdly, the hypothesis of cultural incompatibility was then examined more directly by forming a new variable to assess the disparity between % of Hispanic teachers and % of Hispanic youth. This ratio was correlated against the Hispanic dropout rate. If cultural incompatibility is a powerful cause of Hispanic dropout the correlation should be strongly related to Hispanic dropout rate and explain a large percentage of the variance. However, across these districts this correlation was only marginally positive (r= + .20). This explains only 4% of the variance in Hispanic dropout and indicates that cultural incompatibility explains a small proportion of the cause of Hispanic dropout. Thus, other factors are operating.

Finally, the regression analysis failed to support the hypothesis of cultural incompatibility as a major cause of dropout. The incompatibility factor had no significant impact in the regressions against dropout rates, including that for Hispanics.

However, we acknowledge that this issue might be approached in other ways and with other data. Thus, the present finding - suggesting that the connection is weak - must be regarded as provisional in subjecting this argument to more rigorous testing.

6. Influence of Teacher Characteristics

Teacher qualifications and dropout have no overall correlation e.g dropout rates correlate with % of teachers with Masters Degrees at only r = -.01). When, examining separate male and female dropout rates against the % with Masters Degrees, the correlations are again low (i.e. r =. 03 and r = -.04 respectively for male and female dropout rates). These findings suggest that teacher qualifications have no impact on overall dropout rates.

However, these correlations fail to take urban/rural differences into account. The significant entry of the teacher qualification factor in

the regression analysis indicates this factor has an influence on the overall dropout rate. Teachers in urban areas, i.e. districts with higher dropout rates, generally have better credentials, higher salaries, and more experience than their rural counterparts. The correlational pattern involves an interaction with several variables correlating simultaneously (e.g. better credentials, urban/rural settings, salary levels, years of experience, class sizes, average expenditures, and dropout rates).

Urban teachers, higher salaries, and dropout: Teachers' salaries provide further insights. There is a mild positive correlation between teachers' salaries and dropout rates (r = + .16) i.e. districts with higher teachers salaries have slightly higher dropout rates. For boys and girls, these correlations are r = +.18 and r = +.10 respectively.

However, these findings actually again reflect urban/rural differences since teachers' salaries are higher in the urban areas, where dropout rates are higher. For example, total dropout rates correlates positively with urbanicity (r= +.23). Thus, the correlation linking high dropout to higher teachers' salaries is an artefact of higher dropout rates and teachers' salaries in urban areas.

7. Pupil/Teacher Ratio

Many writers have claimed that crowded classrooms produce higher rates of dropout (e.g. Fine 1986). However, pupil/teacher ratio correlates only mildly with overall district dropout rates (r= +.14) and also with the 1980 census dropout rate (r= +.20).

Thus, at face value one initially conclude that the relation between crowded classrooms and dropout, although positive, is slight. However, again, this correlation is confounded by urban-rural differences.

The urban-rural difference mediates this finding since large classes and more qualified teachers are strongly associated with urban districts. Urbanicity correlates with pupil/teacher ratio (r = +.49), with % of Masters Degree Teachers (r= +.33) and with Salary levels (r= +.37) indicating that urban districts have larger class sizes, more qualified and higher salaried teachers. These all influence dropout rates in different ways. Thus, care must be taken interpreting the simple correlation between pupil-teacher ratio and dropout rate given the presence of these mediating interactions.

8. Financial Resources Allocated to Eduction

We now examine correlations between school district financial resources and dropout rates. The overall conclusion is that districts with more money have lower dropout rates. Initially the data indicates, simplistically, that overall dropout rate, has no direct relationship to expenditures. The overall dropout rate correlation with "overall dollars spent/per youth" is r = -.03; while <u>dollars spent on instruction</u> correlates at r = -.14 with dropout rates.

However, this mild negative relationship is profoundly increased when a small number of district "outliers" are excluded from the computation. The overall dropout rate then correlates with dollars per pupil at r= -.31 and with Instructional dollars at r = -.33 suggesting that high expenditure districts are significantly associated with lower dropout rates.

A second correction to further clarify the link between expenditures and dropout rate is to take account of interactions with Urban/Rural and Social Class differences. Rural Districts have smaller expenditures and less qualified teachers; but these are <u>counterbalanced</u> by smaller class sizes, smaller schools, and less family disorganizaton; all of which are associated with lower dropout rates. Similarly, higher socio-economic districts have higher expenditures, more qualified teachers and higher parental educational levels; but are usually in urban districts with larger schools and larger class sizes.

The factor analysis of these mutually correlated financial variables had already indicated that expenditures per pupil, pupil/teacher ratio, teachers salaries, and teacher qualifications are ail mutually intercorrelated and produces a <u>school district financial resources factor</u>.

This factor, when regressed against overall dropout rate for the districts, explained about 10% of the variance in dropout. Since the financial factor is only mildly correlated with urbanicity (r=.02), one can safely say a significant relationship exists between higher expenditures and lower dropout rates.

9. Student achievement and dropout rates

Districts with higher test scores have lower dropout rates. Thus, in both dropout and achievement school districts covary together. The overall dropout rates correlates at the following levels with school district achievement scores:

r = -.21 with ITBS reading,
r = -.34 with ITBS mathematics

These correlations recur for both male and female dropout rates. Mathematics test scores correlate with male and female dropout rates at r = -.26 and r = -.38 respectively. Reading tests have a slightly lower relationship to dropout rates i.e. r = -.17 and r = -.24 for boys and girls respectively. We note that these achievement tests are more strongly related to female dropout rates than male dropout rates, and that the mathematics test is a better discriminator than the reading test.

Similar findings emerge when correlating these tests against ethnic dropout rates. For instance, the overall Hispanic dropout rate against the mathematic score is r= -.20 and against the reading score (r= -.14).

The factor correlations indicate that the standardized achievement factor correlates at -.25 with overall dropout rates and at -.20 and -.24 for boys and girls respectively, again suggesting stronger predictability for girl dropout rates.

The overall achievement test <u>factor</u> (which incorporates both reading and math scores) had relatively low multiple correlation in the regression analyses. The amount of variance accounted for by this factor hovered near 4 - 5 % for handicapped, female and male dropout rates. No clear relationship existed between standardized test scores and Hispanic dropout rates, indicating that factors other academic achievement are operating among Hispanic youth.

10. Crowded classrooms, high Pupil/Teacher ratios and Dropout
Crowding is highest in urban schools; pupil/teacher ratio and urbanicity correlate highly (r = +.49). Crowding suggests that dropout rate should be higher in urban areas - and in general it is much higher in the urban areas. However, as noted above, the various negative urban district characteristics are partially offset, by the following:

- Higher teacher qualifications (r = +.51)
- Higher pay levels for teachers (r = +.54)
- More experienced teachers (r = +.47)
- More stable teachers/more years in this area (r= +. 46)

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Examining the relative importance of Community Demographics vs. School District Bureacratic variables

Several multiple regression analyses were conducted to examine the relative power of the different blocks of variables to predict dropout rates. These results are briefly reported.

Predicting dropout rates from Community Characteristics: Multiple Regression analysis (R = 0.58)

Six major community characteristics were employed in these regressions: the factors SES$ and SES-Ed/OccF and the variables %Anglo-Boys, Fem/2Par, %Foreign and Urbanicity. When regressed against total dropout rate, 31% of the variance was accounted by these community characteristics. The multiple correlation (R) between dropout rates and those estimated by the equation was R=.579.

Predicting dropout from School Bureacratic Characteristics

School characteristics, Student$, TeachQualF, %Anglo-Teach and Standardized Test Factor, had less of an impact on the total dropout rate explaining only 19.3% of the variance in dropout rates, with a multiple correlation of R=0.46.

Combined Community and School Characteristics

The adjusted multiple correlation squared, when the combined school and community characteristics were used, increased to 36.1% of the variance of the dropout rates across the districts. This represents an increase of approximately 5% when the school district financial and teachers data are added. In conducting several analyses against different dropout rates (ethnic by sex breakdowns) the amount of variance captured by both the school and community variables was generally only slightly above that captured by community variables alone. Thus we conclude that socio-demographic characteristics are more important than school bureacratic data in predicting dropout rates.

These findings are consistent with the general literature which suggests that community factors have a greater impact on dropout rates than school characteristics. The policy implication is that school districts, although they can influence dropout rates to some degree, are critically constrained by the social demographic environment. Family disintegration, poverty, ethnicity, and the general socio-economic composition of communities are generally seen as non-manipulable, yet they influence dropout rates far more than factors which are in the control of a district.

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Clarifying complex interaction effects using Typological analysis

Using cluster analysis methods we identified a typology of Colorado school districts to help further clarify the complexity of the above correlations. This analysis goes beyond correlations and regressions to identify fairly clear multivariate patterns of socio-demographic, ethnic and educational influences on dropout rates. The types of school district found in this analysis were as follows:

1. Poor inner-city school districts: High Dropout rates

These poor urban districts have the highest dropout rates of all community types (9.8%), the highest Hispanic dropout rate (12.5%), and the highest special education dropout rate (2.7%). They are also signifantly below average in achievement, with the second lowes scores for standardized achievement tests in both Math and Reading.

These districts have the following pattern of socio-demographic characteristics compared to other districts:
- high levels of minority youth (both Black and Hispanic)
- lower social class scores
- higher rates of adult dropouts
- fewer persons in managerial positions
- fewer adult college graduates
- more broken and single parent families.
- large and crowded class sizes
- lowest scores of all districts for overall expenditures and instructional expenditures on youth (By contrast the high social class urban areas have the second highest average expenditures.

These above features are mitigated by the following features which also emerged from the correlational analysis:
- teachers salaries are larger
- teachers are generally more experienced and stable.

2. High Education Urban School Districts

This type of community has the lowest dropout rates of all community district types, the lowest anglo dropout rate, and the lowest special education dropout rates. The Hispanic dropout rate in these communities is virtually half (6.8%) what it is in the poor urban school districts (12.5%). These communities also have the highest achievement scores for both standardized reading and math tests of the five community types.

These type of urban community has the following socio-demographic profile:

- Anglos are dominant
- Social class scores for both occupation and educational factors are the highest of all community types
  lore adult college graduates, more adult managerial types
- Fewer manual workers and outdoor laborers, fewer adult high school dropouts.
- Fewer Single parent families
- Fewer Persons below poverty
- Class sizes in these more affluent urban districts remain large
- Teachers have high salaries, are experienced, and show relatively low transience.
- Average Expenditures on youth is substantially higher than in the poor urban areas, and approaches that of the highest rural expenditures (where class sizes are much smaller).

3. Lo : Social class, small rural minority communities

This small set of 8 school districts accounts for only about 5% of the school districts in Colorado. It is, however, a very extreme type and brings together several characteristics which combine to produce an atypical community pattern

Educational and dropout performance: The most pronounced feature of this community is the exceptionally low scores on standardized achievement tests. These school districts fall significantly lower than all others for both reading and math standardized tests. They fall even lower than the poor urban minority type - described above. Their general dropout rate is the highest of the three rural communities (5.5%), and highest for Hispanic youth (8.1%) and Handicapped youth (2.5%).

Social demographic and ethnic structures: These districts are rural and poor. They have the lowest financial factor score of all community types, the highest poverty ratio, and the highest % of adult dropouts. This type of community has a larger proportion of Hispanic youth than any other. It appears that almost half (50%) of the school population is composed of Hispanic youth, the other half being Anglo.

School District characteristics: These districts are very small in population size, and have a small pupil/teacher ratio. They have the highest proportion of non-Anglo teachers than any other type of community, and these teachers although not as well qualified (on average) as those in urban areas, are clearly higher in qualifications than the other two rural community types. Teachers salaries are lower than the urban communities but are clearly higher than in the poor anglo rural communitie. Financial expenditures per student is low, and it about the same as that in the poor urban minority community (see above)

4. Small poor rural anglo communities

This type of community is far more frequent than those described in rural type 3. Specifically 27 different rural communities fall into this pattern.

Educational and dropout performance: Dropout rate is very low (3.3%) and approaches that of the educated high achieving urban area. It has the lowest dropout rate of all three rural community types, and a low dropout rate for hispanic youth (although few hispanics live in these communities). In the standardized achievement tests these communities are above average.

Social demographics and ethnicity: These are predominantly anglo communities. There are virtually no Black and very few Hispanic youth. Virtually all the teachers are Anglo.

These districts are poor. They have essentially the same scores for poverty ratio, low adult education, numbers of adult dropout, and so forth, as the small poor minority districts (type 3).

School district characteristics: Teachers qualifications and salaries are the lowest of all community types. They have the lowest % of teachers with Masters degrees, the highest teacher transience, the least experienced teachers, and the lowest teacher salaries.

However, these features are offset by the fact that these districts are very small, with small schools, and have the smallest pupil-teacher ratio of all community types (11.5). Perhaps as a result of this small ratio

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they also have the highest expenditures per pupil. This holds for both pupil and instructional expenditures - as calculated by the State.

5. Rural, small middle class anglo/mixed communities

These small rural communities are the most frequent community types in Colorado. Fully 30 school districts fall into this pattern.

Academic and dropout performance: On standardized tests these communities are average or above. They are below the affluent urban districts but ahead of both minority urban and hispanic rural area (type 3). They have standardized scores similar to the rural anglo type 4's, and a similar dropout rate (4.5%). However, Hispanic dropout rate is high in this type of district (9.3%)

Social demographics and ethnicity: These communities are Anglo dominated, although they have a substantial proportion of minorities (12%). The majority of teachers are Anglo (98%).

These districts are relatively affluent. They have a high score for the financial social class factor, and a low score for poverty ratio. However, they have only average scores on the educational social class factor. This is underscored by a higher than average score for the 1980 Census dropout rate, and an adult dropout rate that is closer to the poor minority areas than the affluent urban communities. These districts appear almost transitional with some evidence suggesting high poverty and poor education, while other indicators suggest affluence and middle class tendencies.

School district and educational data: Regarding teachers qualifications, this district has a similar profile to other rural districts i.e. low teachers salaries, low percentage of teachers with masters degrees, less experienced teachers, and more transience among teachers. Money spent on instructional purposes is lower than average, and in fact is close to that of the lowest type of district i.e. the poor minority urban districts.

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SCALES AND MEASURES
USED IN COLORADO DROPOUT STUDY

November, 1988, Version 3

THEORIES GUIDING SELECTION OF VARIABLES
IN THIS STUDY

In constructing this questionnaire and in deciding which variables would most appropriately help us understand the social, psychological, and institutional factors which produce drop out behavior, we were guided by certain theoretical ideas. The most immediate theoretical precursors to the present study are the integrative theories offered by Jessor and Jessor (1977), Brennan, Huizinga and Elliott (1978) and Elliott, Huizinga and Ageton (1985). Each of these studies gives an integrative perspective on why some youth adopt certain deviant and problem behaviors. They are all built on combinations of the following processes:
- strain theory (which examines the erosion of social bonding)
- control theory (which examines the inadequate development of social bonding)
- labelling theory (which examines the role and impact of institutional labelling and categorizations
- Peer influences (which enters the model as a component of social learning theory and differential association theory).

Brennan, Huizinga and Elliott (1978) probably provide the most pertinent theory since it examines a similar "separation" process i.e., the separation processes of the adolescent who runs away from home. Dropout behavior is also a separation process, and the dynamics of separating from home and school may have some parallels. These parallels will be more fully elaborated in a related project report dealing with the theoretical issues involved in dropping out of school. However, in the present instance we will briefly review some the major arguments in these theories which have guided our selection of assessment instruments.

1. THE IMPORTANCE OF SOCIAL BONDING
Wehlage (1983) suggests that "social bonding" is a prerequisite to committment and successful participation in school. Social bonding implies a feeling of connectedness, belongingness and engagement in the main activities of the school. Wehlage indicates that the problem of effective acculturation to school emerges from the broader issue of child and adolescent social and psychological development. Wehlage believes that such socio-psychological development processes are linked to the emergence of certain "fundamental personal and social characteristics required for long term success".

Bonding is critical in keeping youth involved and committed to the

school. The major question is how best to assess and operationalize this critical concept. We now briefly review some major approaches to defining and operationalizing different aspects of social bonding.

Hirschi's Elements of Bonding

Bonding is a major element in "Control Theories" of social deviance. This approach emphasizes conditions and processes which enhance the development of bonds which tie a person to society and it's social institutions, i.e.,. bonds which might tie the youth to the school. Hirschi (1969) saw four elements to this bond.

1. Attachment Bonds

These are seen as moral, emotional, or value orientated attitudes to school and society. They overlap with the concept of superego forces, and are developed via socialization processes which promote the internalization of social norms and values. Attachment bonds are based on the youth's perception that something good or worthwhile will result from maintaining a good standing in ...::'mate roles, and from complying with conventional social norms and behaviors (e.g., the role of the student). The youth will also believe and that the loss of such standing would incur losses which would outweigh anything gained from breaking the rules.

Another component of attachment bonds are feelings or attitudes to other persons in the youth's environment; e.g., persons whose approval the youth would like to achieve (Parents, Teachers, Friends). Behaviors which jeapordize these relationships will therefore be avoided. However, if the youth is unconcern about the opinion of such persons then violation of normal prosocial behavior would be more likely; thus, attachment bonds imply that the youth is concerned to maintain a good standing of approval from other respected persons; e.g., teachers, parents, policeman, etc. Aspirations for school success, going to college, having a high paying future job, etc. are another component of attachment bonds. Watt et al (1987) report that aspirations are strongly correlated with educational success in secondary school.

2. Commitment Bonds

These are the rational elements of social bonding. A rational element is present since investing in conventional actions such as educational careers has a high future payoff. The youth is interested in receiving such payoffs and does not wish to jeapordize these long term rewards. This is similar to having a "stake in conformity" (Good 1960; Becker, 1960).

If committment bonds are strong the student will see classroom teaching as relevant and useful to his or her future goals, hopes and aspirations. The classroom behavior of such youth will more likely conform to an enthusiastic motivated style. Theoretically, there should be a strong relationship between committment bonds and positive prosocial

attitude and behaviors in the classroom content. Weaknesses in this aspect of bonding may create a state that is similar to the stages of "Identity Diffusion" and "Moratorium in the adolescen* psychosocial development theory of Marcia (1966; 1970). In these stages the adolescent has not yet adopted clear goals in regard to education or vocational futures. This "uncommitted" phase is expected to be more strongly correlated to adclescent problem behaviors such as dropping out, running away, drug use, etc.

3. Involvement bonds

This is seen as more behavioral element of bonding. It is assessed by the time and energy that is invested in the social institution or value. This refers to the youth's allocation of time to prosocial, conventional activities. It is a broader concept than simply being so busy that there is no time for problem behaviors. Passive activities (e.g., recreation, leisure, etc.,) do not necessarily serve to bond persons to the normative social order. Active, productive involvement in various educational experiences are more representative of the concept of involvement. Involvement bonds, thus have a variety of positive payoffs. Such behaviors can be rewarded by the teacher and may provide the student with oportunities to devote energy, creativity, and time to such activities with the additional payoffs of mastery and sense of educational progress, self development, and so forth. There is evidence that high involvement is related to a variety of indicators of educational success. Hinojasa and Miller (1984) have demonstrated that among Hispanic migrant children that greater extra-curricular participation was related to higher levels of academic attainment

4. Beliefs

This final form of bonding covers a variety of different dimensions. Erosion of certain major beliefs will inevitably damage the general level of the above forms of bonding to the school and may allow anti-social behaviors such as dropout to occur. The following issues fall under this general category of bonding:

a) Belief in the fairness/equity of school rules: Belief in the moral validity of social institutional and normative order is the foundation for this aspect of bonding. In terms of schools and classrooms, this concept implies that the rules governing classroom and school behavior are equitable, fair and necessary, and that they are applied equally to all students. Thus, they warrant being obeyed. Thus, if a youth acknowledge that the rules are unfair, unclear, and inequitable, there may be a profound erosion of this element of bonding. Fundamentally this refers to the degree of the students acceptance of the moral validity of the social norms, as they are manifested in educational institutions. This psychological element is effective as long as the youth accepts the validity of the rules. When validity is denied or deprecated this source of control and of bonding

is neutralized.

b) Respect for authority: This is obviously an aspect of the belief component of bonding. The youth's attitude towards authority figures who represent the school system is a manifestation of such bonds. Disrespect for teachers or principals indicates a weakening of belief in the moral validity of the school. Thus, a task for the society is to create a milieux in which teachers, principals, school staff, and school rules as perceived as worthy of respect, admiration, and as being morally invulnerable. Societies differ enormously in the respect given to teachers. Contrasts between Japan and the USA reveal enormous differences in general public honor that is accorded to teachers. Loss of respect for the authority of teachers and for the moral validity of educational institutions theoretically should be expected to correlate to withdrawal from school.

c) Belief in the value and efficacy of schooling: The Achievement Ideology

This is the belief that success in this society can be achieved by a good education. It rests on a belief in the connection between school achievement and future vocational success. The assumptions are that hard work eventually pays off, that it will produce a good future, and that hard work and a good education will produce a good job. Most youth and particularly middle class students with well educated and successful parents usually buy into these assumptions. They are surrounded by role models exemplifying the connection between education and vocational and financial success.

A second component of the ideology of education is that an equality of opportunity exists in regard to achieving a good education (McLoud 1987). A related belief is that education is a remedy for social inequality. Underprivileged minority youth represent the most likely group to lose belief in these assumptions. Specifically, they are often aquainted with other minority youth who have a high school diploma but who nevertheless remain unemployed, and who may have far less financial success that other aquaintances who may be dropouts but who have adopted unconventional approaches to achieving financial success. Thus for many minority and poor youth the connection between education, social equality, and job success is clearly severed. Many commentators have argued that the current system seems to produce skepticism, rejection and cynicism among large segments of the student population. There is an emerging belief among many youth that the institution simply has no legitimacy.

Training in the "achievement ideology" is frequently provided by middle class parents and teachers. Socialization pressures toward long term extrinsic payoffs reflect a common approach to maintaining discipline and control, and to motivating the students. Teachers try to bolster classroom discipline and student motivation by stressing an

achievement ideology e.g., work hard and you will make money, earn good grades, have a bright future, and so forth. Hard work is strongly and repeatedly linked to good jobs, money, and a good future. Students are warned that they must work hard and not fool around if they want to have a good job in the future. These controlling and discipline strategies produce numerous assertions reinforcing the job-schooling connection.

When youth lose faith in this belief, much of the motivation regarding an education is lost. McLoud (1987) provides graphic case studies of poor minority youth who have completely lost faith in the job-schooling connection, as well as in the belief in the equality of educational opportunity. Dropout reaches epidemic proportions among such youth.

A two-dimensional approach: External and Internal Bonding

Other control theorists (Reis, 1951; Nye, 1958; Reckless 1967) simply categorize bonds as internal (personal) and external (social). Elliott et. al. (1985) used the term integration bonds to denote external social bonds thus underlining the importance of factors which "integrate" the youth into the various social institutions in which they may have levels of membership.

1. External (Integration) Bonding

External bonding essentially assesses social and behavioral occupancy of social roles. This kind of involvement implies being strongly socially and behaviorally integrated to a conventional group or institution. It focusses on the level of occupancy of conventional social roles, participation in conventional activities, and the presence of effective sanctioning networks in the youth's immediate social context. This conceptualization subsumes Hirschi's involvement and commitment aspects of bonding.

a) Social integration: This may be indicated by levels of extracurricular participation at school e.g.,. social participation in school functions, hobbies, clubs, sports, band etc. Popularity and social integration vs. Isolation at school is also important. This may be indicated by social popularity, number of friends, and scales assessing loneliness at school.

b) Academic Involvement: This aspect of integration bonding is indicated by time spent doing school work, number of classes taken, effort expended in homework etc.

2. Internal (Committment or Attachment) Bonds

For the second kind of bond i.e., the internal or personal Elliott et al (1985) use the term committment bonds. This term subsumes Hirschi's

two concepts of attachment and belief. However, as noted above various sub-dimensions can be delineated within internal bonds. Commitment bonds may be fragmented into such theoretical variables as: normlessness, social estrangement, attachment to parent's beliefs, beliefs in conventional goals and values, and low tolerance of deviance, and other forms of social alienation. The following sub-dimensions are particularly relevant for understanding and predicting dropout behavior.

a) Aspirations and Values regarding education: The students educational aspirations, goals, and plans are an important component of committment bonds. Prior research has indicated that students with no clear future plans drop out at higher rate. Jessor and Jessor (1977) have developed a scale assessing value for academic achievement, and this forms an important theoretical building block in their model of adolescent problem behavior.

b) Expectations for academic achievement: This forms an additional important component of committment bonds. Prior research has indicated that drop outs have lower expectations than those who graduate from high school.

c) Perceived relevence of education to life values/goals: Attitudes to education are strongly linked to the perceived relevence of education to the life aspirations and goals of the youth. If the student believes that they require education to achieve their various goals (e.g.,. having money, a good job, making something of their future, being respected, pleasing their parents or teachers, gaining entry into a preferred profession, etc.) then schoolwork becomes critically important to the youth. Thus occupational aspirations provide a useful avenue to assessing the importance of committment bonds. Where educational success is important in achieving these aspirations, the youth's attitude to school is positive, and there will generally be negative attitudes to dropping out. This idea is similar to the concept of "immunization" against dropout, which appears in the Janis and Mann (1977) model of decision making where certain committments fundamentally serve to absolutely prevent certain kinds of negative decisions.

d) perceived rewards/satisfactions at school: The balance of perceived rewards and costs of school also falls into the general concept of committment bonds. Satisfaction with school has been found to separate dropouts from non-dropouts. For example, most data indicate escalating levels of unhappiness over schooling, particularly amongst the soon to be dropout (Welhage,1986 p 383). Student dissatisfaction with educational progress, and the feeling of stagnation is school is often reported by dropout. Educational progress is clearly a benefit of schooling and a majority of dropouts indicate disatisfaction and are thus not receiving this particular benefit.

The intrinsic nature of the schoolwork itself also enters the picture here as a potential reward if the work is fun, interesting and provides a sense of competence. However, if the work is boring, unchallenging, or quite beyond the capacities of the student, then anxiety, failure and a sense of incompetence are produces. Disinterest in school work, apathy and boredom, are reported by many dropout youth. Questions focussing on enjoyment of the work e.g.,. do you like to read? is the schoolwork too difficult? etc., are geared to assess this aspect of committment bonding. Many dropcut youth perceive the schoolwork as too difficult, that standards are set too high, and that the school is designed to defeat them. This indicates a loss of trust in the schools and an impairment of the belief in schooling as a vehicle for achieving equality cf opportunity. This latter set of beliefs is widespread among minority youth (McLoud 1987).

2. STRAIN THEORY AND SCHOOL DROPOUT

This theory examines conflicts in social processes and particularly conflicts and problems associated with conventional social roles e.g., the role of high school student. A major assumption is that all youth in American culture are socialized within the various social institutions to accept certain aspirations e.g.,. for success and achievement in a variety of domains, economic, romantic, athletics, etc. The basic problem examined by strain theory is whether such goals are equitably distributed throughout the population. Although, everyone is socialized to desire and expect such goals; e.g., successful education, successful career, expensive home, etc., the means for achieving such aspirations may be systematically denied to many people and made easily available to others.

Thus inequality of access to usual means of success may render large sections of the population unable to legitimately achieve such goals. Consequently, frustration and alienation arise, and many of these persons may turn illegitimate means, or may give up on these goals and adopt a normless stance. Thus, there may be an iilegitimate deviant attempt to achieve these goals or a retreatist adaptation via alcohol, drugs and other avoidance behaviors. The following variables are critical in Strain theory:

a) Teacher rejection, failure and cumulative discouragement: The role of the school and teachers in this process of discouragement is examined by this questionnaire. For example, the initial process of attenuation and strain may be connected to informal styles adopted by teachers e.g.,. lack of interest of teachers in the student, explicit messages of discouragement, disapproval, and a over-readiness to impose the school discipline system against certain children. The child's perception of unfairness in the discipline system, and of being made the brunt of this, together with failing grades may produce frustration, loss of

commitment, and ultimately drop out.

The dynamics of this process consist of a sequence of discouraging signals about failure, inadequacy and rejection. Wehlage (1986) suggests that "this process is probably cumulative for most youth". It usually begins with negative messages regarding both academic and behavioral problems. These general messages gradually focus on more specific problems e.g.,. insufficient credits for graduation, formation of a negative self-esteem as a learner, etc. Wehlage suggests that this cumulative process eventually produces alienation and a gradual loss of commitment to the goals of graduating from high school or even pursuing more education.

A related theme is the emergence of a belief that the institution has rejected the person. The youth, in this scenario, starts feeling rejected and unwanted. For example, Watt et al (1987) found that children from disadvantage families with language handicaps fail early and repeatedly in school until they become alienated, start acting out and then quit at the earliest legal opportunity. Thus their school career is characterized by disappointments, frustrations, confrontations, remedial attempts, and ultimately disillusionment. This conforms to the classic idea of strain theory where the person is fundamentally blocked in their educational aspirations and adopts a retreatist or rebellious adaptation to the school. The task of the questionnaire instrument in this theory is to adequately identify the various school factors which are the source of the unfairness, blocked aspirations, and alienation.

b) The importance of Labeling Theory in the Erosion Process: When a youth has been defined as a failure, outsider or a deviant, they may adopt the deviant role almost as a self-fulfilling prophecy to their lowered status. Hawkins and Lishner (1986) for example, point out that in schools "labels are attached early on the basis of achievement and behavior and such labels may influence the subsequent treatment of youth almost irrespective of their actions". Thus, youth labeled as behavioral problems, slow learners, or aggressive at an early stage may be continually labelled and tracked in ways which inevitably impose deviant peer affiliations, apathetic teaching, inadequate curricula and negative expectations on the part of their teachers. Such labelling and tracking processes thus contribute to the identity, attitudes and behavior of the labeled youth.

c) Evidence of loss of aspirations: A critical finding in the research data is that few dropouts actually anticipate their dropout. In the available longitudinal studies only small proportion of students do not believe they will complete high school. Even amongst those who eventually drop out 50% of hispanics, 31% of blacks and 45% whites, believed they would graduate. These figures are similar to the responses of those who actually graduate. A further finding reported by Wehlage (1986 p. 384) is that substantial proportions of dropouts projected their formal education

beyond the high school. These data were collected in the sophomore year of high school. Thus, something happens to dissuade these adolescents from attaining their expectations. The implication is that expectations are somehow eroded, undermined, discouraged, or blocked. Again, such findings are consistent with the general arguments of strain theory.

3. CONTROL THEORY

Whereas strain theory examines the erosion of previously strong bonds, control theory takes a historical step backward and examines early impairments or problems in the initial socialization processes and development of bonds to conventional norms and values. If early bonding to school values and aspirations has not occurred, then school problem behaviors, drop-out and delinquency are more likely to result according to control theory. The relative weakness of internalized controls would allow deviant behavior to be easily and repeatedly adopted by the youth.

The dropout may be theoretically viewed as:
I) A consequence of weakly developed internalized normative values or goals (Control theory)
2) Caused by frustration, and consequent breakdown or erosion of previously established goals and values (Strain)
3) Conflict or inconsistency in rules or social controls (control theory).

Strain theories focus on the second of these processes and thoroughly implicates the school, and it's various operations, structures, procedures, and staff. In various ways the institution is thwarting, undermining, and blocking the aspirations of the youth. Control theory on the other hand examines the first and third conditions, i.e.,. it examines variables forms of inadequate socialization, and the subsequent failure to internalize conventional norms, beliefs and values in regard to school and education. This will result in youth who are inadequately socially integrated into the school, and other conventional groups and institutions.

4. SOCIAL LEARNING THEORY AND DROPOUT BEHAVIOR

Social Learning Theory has an important role in our research and is included as a complement to Strain/Control Theories. We have introduced a number of variables which map the manner in which the potential dropout is influenced by peers, or other family members who may have dropped out of school. The peer group is particularly important within the social learning context.

a) Social learning in the context of peer groups

An early statement on social learning and differential association is given by Sutherland (1947) who argued that a pattern of social and peer relationships is required to provide a learning crucible in which the youth would learn motives, rationalizations, techniques, and various rewards of anti-social behaviors (Burgess and Akers, 1966, Bandura, 1969, Mischel, 1968).

Critical issues involve what kind of peer group provides this context for the social and psychological development of the youth, by what mechanisms, and how powerful is this process. By adolescence most youth have been thoroughly exposed to all forms to anti-social behavior (TV, radio, and peers) and have learned about the nature and techniques required for such acts. However, regarding dropout in particular, the peer group may provide immediate role models, companions and information about dropping out.

Extending Sutherland's (1947) work, Cloward and Ohlin argued that following on from the experience of frustration and anomie (Normlessness) specific types of problem behavior are then acquired through learning processes largely originating within peer networks. The act of searching for alternatives within peer group settings will allow specific forms of problem behavior to be acquired and reinforced. This, in essence, is the social learning argument.

The exact time of the first serious exposure to dropout behavior, or other forms of adolescent problem behavior is probably variable for many youth. It may predate the emergence of normlessness, or it may be the result of the youth seeking a social context and an alternative peer network within which he can experience some "successes". This may be a deviant peer group or it may simply be leaving to take some conventional, low level job.

b) Moving from "social learning" to actual dropout behavior

The next issue is the move from simply learning about dropout into it's actual commission for some youth but not others. This introduces a distinction between learning and performance (Bandura and Walters, 1963, Mischel, 1968, Bandura, 1969). Mischel (1968) distinguishes between the learning and acquisition of the behavior vs. the performance. Mischel maintains that performance is regulated by both sensory, situational and cognitive processes and that both direct and vicarious reinforcements are important determinants of response selection.

In the case of the dropout these "direct and vicarious reinforcements" may be tentatively specified and incorporated into this research. These are behaviors (e.g.,. cutting classes, truancy for various time durations, part-time jobs, etc.) which although not constituting a fully-fledged dropout, may provide the learning structures and vicarious

rewards to reinforce and eventually produce the full act of dropping out. These fit the concept of a "learning structure" since they predate dropout, and provide many learning skills and rewards to motivate and train the youth in dropout related behaviors - even although the full dropout may occur only once.

In general virtually all youth have learned about dropping out, and have many of the skills to drop out. Most will also have experienced the direct reinforcement from these preliminary or "partial" dropout behaviors. Thus the temporal reinforcement argument of Bandura can be invoked in this situation. It is likely that the peer group provides a supportive setting for reinforcement, performance, and learning of such behaviors.

5. Labelling theory

A final theoretical component of the present work is labelling theory. This is critically important in the school setting due to the importance and pervasiveness of labels, tracking procedures, and the sensitivity of youth towards such practices. It nas become well established that attaching negative descriptions to persons may affect their situation, their self-esteem, and their future behavior. It may also influence the way other people respond to the person, even when the ascribed label is incorrect. Thus, the label may evoke a self-fullfilling prophesy. The criminal justice system, for instance, imposes negative, irreversible and ultimately damaging labels to youth. Recent research also shows that when negative labels are introduced in any institutional situation, then access to opportunities in that institution will eventually become restricted.

Youth who fall into certain ethnic, social class, or who have prior low academic ratings, are especially susceptible to stigmatizing labels in schools. Firstly, a frequent consequence is that such youth are usually categorized with others who have similar labels. Secondly, they are reacted to in certain (usually negative) ways by teachers. The teachers often unthinkingly adopt rather negative expectations. Thirdly, opportunities for bonding to prosocial youth become diminished. This restricts the number of positive role models available to such youth, and probably increases the number of deviant anti-social role models. Thus, the likelihood of problem behavior and antisocial behavior should increase.
The present study includes a large coverage of labelling variables.

Reliability of the present scales

The table below indicates the Cronbach's alpha level for all of the scales in this study. Two broad categories of scales are given 1) The scales as reported in the Gottfredson Johns Hopkins studies, and 2) A set

of new scales that have been developed specifically for the present study.

a) Gottfredson scales (G scales)

The majority of these scales show acceptable reliabilities. The item content of each scale was identical to that reported in the original studies. This has the advantage that we can compare the scores in the Colorado study to those norms reported by Gottfredson in a variety of school settings around the country.

b) Original Colorado study scales (B scales)

These represent a set of new scales developed to explain and predict dropout using the above set of theoretical positions. A detailed description of each scale is given in the following text. Modifications were made on only a handful of scales between the various waves of this study. Some minor modifications were made at Wave 2 to strengthen certain scales. No modifications were made between Waves 2 and 3. Although the questionnaire was shortened by dropping a number of items that were either redundant, or which did not enter into any of the scales as finalized by the item analysis.

B1 - FAMILY/SCHOOL TRANSIENCE

Disruptions in schooling and in socialization environments or processes may have a negative impact on the youth's adjustment to school. The present three item scale attempts to measure the level of dislocation within the family and school due to transience. The scale reaches an Alpha level of .52 and is thus reasonably satisfactory for a three item scale.

1. How long have you lived in the house or apartment where you live now?

2. How many times has your family moved in the last 5 years?

3. How many different schools have you gone to?

ALPHA 1 = .5219 STANDARDIZED ITEM ALPHA = .5674
ALPHA 2 = .47   STANDARDIZED ITEM ALPHA = .55
ALPHA 3 = .5769

B2 - PARENT SATISFACTION WITH SCHOOL BEHAVIORS

This five item scale is an adaptation of the Farber and Jenne scale of parental satisfaction with instrumental behaviors. The present scale has been modified to focus expressly on school and educational issues. It is quite reliable with an Alpha of .59. This scale fits well with the control and socialization theories of adolescent deviance; it assesses the youths perception of the level of concern their parents have regarding school behaviors.

1. My parents appreciate it when I try hard, even if I don't succeed all the time.

2. My parents want me to take things seriously.

3. My parents want me to listen to my teacher.

4. My parents want me to try to be successful.

5. My parents want me to think about schoolwork.

ALPHA 1 = .5939 STANDARDIZED ITEM ALPHA = .5202
ALPHA 2 = .74

ALPHA 3 = .7511

Conducting reliability analysis in year two, the item Q350 tended to damage the scale and reduce its reliability, therefore in forming the scale for the second year, item 350 ie., my parents appreciate it when I try hard, was eliminated. This increased the Alpha to .74 for this scale.

B3 - PARENTAL SATISFACTION

These items provide a short assessment of the youths perception of parental satisfaction. This present scale is not focused on school issues but simply gives a general measure of parental satisfaction. The short scale reaches a high reliability level with an Alpha of .61.

1. My father is pretty satisfied with me.

2. My mother is pretty satisfied with me.

ALPHA = .6103   STANDARDIZED ITEM ALPHA = .6220
ALPHA = .70
ALPHA = .6153

B4 - PARENT SUPPORT FOR EDUCATION

Parental involvement and attention to schooling is often regarded as an important variable in developing the values and aspirations of the youth. Parental involvement with education constitutes a form of support and encouragement in taking education seriously. Parental involvement might be hypothesized to relate to lower levels of dropout.

1. If you fail at something, how do your parents (guardians) usually respond?

2. My parent(s) keep close track of how well I am doing in school.

3. My father (or guardian) helps me with my homework.

4. My mother (or guardian) helps me with my homework.

ALPHA = .5291   STANDARDIZED ITEM ALPHA = .5829
ALPHA = .45   STANDARDIZED ITEM ALPHA = .53
ALPHA = .5280

B5 - PARENTAL INVOLVEMENT WITH SCHOOL PROGRAMS.

Some parents show high levels of concern or become actively involved in school programs, e.g. parent/teacher conferences, etc. This scale assesses this level of parental involvement. The scale is adapted from Dennis et al. (1979). The four item scale achieves an Alpha level of 57 and is reasonably reliable.

1. How many parent-student-teacher conferences did you participate in last year?

2. My parents' opinions are valued by the school.

3. My parents are involved in the school program.

4. My parents share joint responsibility with the school for my education.

ALPHA = .5695   STANDARDIZED ITEM ALPHA = .5882
ALPHA = .51   STANDARDIZED ITEM ALPHA = .53
ALPHA = .5363

B6 - PARENT ACHIEVEMENT DEMANDS

Parental interest is often shown by the parents' imposition of achievement demands on their children. In some instances this might be oppressive and the youth may react negatively by running away or dropping out of school (see Brennan et al. 1978). The present scale is part of the Bronfenbrenner parent/child relationship inventory. The present scale has good reliability with an Alpha of .65.

1. My parents insist that I make a special effort in everything that I do.

2. My parents demand that I do better than other students.

3. My parents insist that I get particularly high marks in school.

ALPHA = .6481   STANDARDIZED ITEM ALPHA = .6420
ALPHA = .70
ALPHA = .6997

B7 - PARENTAL PRESSURE FOR SCHOOL CONTINUATION

The two items in this scale assess parental emphasis on the

continuation of education. The two item scale was not successful, reaching an Alpha of only 0.3.

1. My parents would be disappointed if I dropped out of school.

2. Do your parents want you to go to college someday?

For the second wave of the study the scale was bolstered by the addition of three new items. These included:

3. My parents encouraged me to graduate from high school.

4. My parents believe that a high school diploma is important

5. It would be o.k. with my parents for me to dropout of high school and get a job (negatively scored).

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ALPHA =  .0321        STANDARDIZED ITEM ALPHA =  .1318
ALPHA =  .42
ALPHA =  .2767        STANDARDIZED ITEM ALPHA =  .5042
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The addition of the three new items to this scale have strengthened it, particularly in the standardized form. Thus a second version of this scale has been formed including these three new items. This did not strongly improve the scale. The new scale has an Alpha reliability now of .51 although the standardized Alpha reaches .42.

B8 - PARENTAL TOLERANCE FOR SCHOOL DEVIANCE

This scale of parental tolerance or intolerance of school deviance emerges from Jessor and Jessor's theory of youth problem behavior. In essence it is the reversal of parental satisfaction with instrumental behaviors. The scale focuses on negative behaviors such as cutting class, not doing homework, dropping out, goofing around, breaking school rules and nonattendance. A higher level of parental intolerance would be expected to be negatively correlated to dropout. Howevf an excessively extreme level of parental intolerance may be dysfunctional and may produce rebellious behavior. Both of these hypothesis will be examined. The reliability of the present six item scale is reasonably high with an Alpha of .63.

1. To your parents, how wrong is cutting class?

2. To your parents, how wrong is dropping out of school?

3. To your parents, how wrong is it for you not doing your homework?

4. How wrong do your parents think it is for you to goof off at school?

5. I would be punished at nome if my parents or guardians knew I broke a school rule.

6. My parents (or guardians) would be disappointed if I did not attend school regularly.

ALPHA = .6308   STANDARDIZED ITEM ALPHA = .5992
ALPHA = .66
ALPHA = .6632

B9 - PARENTAL INTOLERANCE FOR GENERAL DEVIANCE

This short three item scale again assesses parental tolerance for deviant behavior. The first wave scale was not sufficiently reliable, with an Alpha of .38. Thus it was augmented with an additional item in the second wave data. All of the original items had relatively high correlations with the overall scale, so these items were retained. We will examine any augmentation of reliability produced by this new item.

1. My parents or guardian would be angry if I disobeyed thee.

2. My parents would be very angry if I lied to them.

3. My parents would be disappointed if I stole something from a store.

The additional item added in the second wave data is:
4. It is upsetting to my parents if I hang around with kids who get into trouble.

ALPHA = .3846   STANDARDIZED ITEM ALPHA = .3936
ALPHA = .51

B10 - INDEPENDENCE FROM PARENTS

During adolescence many youth move rapidly towards a state of emotional and practical independence. This scale assesses this particular dimension. There is an argument from exchange theory which suggests when a youth has other options for survival, they may more readily move out of the parental home. This readiness to assume independence might be expected to correlate with dropout in the case of certain failing youth. The original three item scale reached a marginal reliability of .50. All three items had fairly high correlation with the overall scale.

1. I am going to need my parents' or guardians' help for some time to come.

2. All in all, I am pretty much able to take care of myself without help from my parents.

3. If I wanted to, I could make enough money to get along on my own.

An additional item was added in the second wave in order to allow some augmentation of the reliability:
4. I feel that I have the resources to survive well on my own.

ALPHA = .4993   STANDARDIZED ITEM ALPHA = .4978
ALPHA = .50
ALPHA = .5308

B11 - ATTACHMENT TO PARENTS

High levels of attachment to parents especially (conventional parents) would be expected to mitigate against dropout and other adolescent problem behaviors (Jessor and Jessor 1977). The present five item scale which analyzes attachment reaches a satisfactory level of reliability, Alpha = .73.

1. I have lots of respect for my parents or guardians.

2. How much do you want to be like the kind of person your Mom is?

3. How much do you want to be like the kind of person your Dad is?

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4. How close do you feel to your mother or guardian?

5. How close do you feel to your father or guardian?

ALPHA = .7252   STANDARDIZED ITEM ALPHA = .7307
ALPHA = .71
ALPHA = .6953

B12 - INVOLVEMENT WITH PARENTS

Again, within the context of control theory, involvement with parents represents a conventional activity that would provide a bonding between the youth and conventional activities. Such bonding would theoretically mitigate against adolescent problem behaviors e.g. school dropout. The present two item scale reaches a satisfactory level of reliability with an Alpha of .56.

1. I do lots of things with my parents.

2. My parents (guardians) like to spend time with me.

ALPHA = .5631   STANDARDIZED ITEM ALPHA = .5847
ALPHA = .51
ALPHA = .5019

B13 - PARENTAL SUPERVISION

This six item scale assesses the degree of parental supervision, which would decline as the youth get older. Extreme scores of either high or low levels of this variable might be expected to correlate with the youth problem behaviors. Inadequate supervision might impair socialization processes while excessively severe supervision might create rebellion.

1. My parents almost always know where I am and what I am doing.

2. As far as my parents are concerned, I can come and go as I please.

3. My parents insist I get permission before I go to a movie, or some other entertainment.

4. My parents insist on knowing exactly how I spend my money.

5. My parents tell me exactly when I should come home.

6. My parents (guardians) tell me who I can and can't have as friends.

ALPHA = .6153   STANDARDIZED ITEM ALPHA = .6151
ALPHA = .44
ALPHA = .4481

B14 - PARENT/CHILD CONFLICT

This scale attemp, s to test the level of explicit conflictbetween youth and parent. It is linked to the entry into a "moratorium" phase where the youth may psychologically begin detaching from their relationships with their parents. Essentially in the moratorium phase, the youth moves away from strict parental control. A general indicator of entry into this phase is explicit conflict between parent and child. This scale may be strongly related to autonomy and independence from parents. The present four item scale reaches an Alpha reliability of only .46 and thus needs to be strengthened. All of the items have fairly strong correlation to the overall scale, thus the items reflect a relatively homogeneous scale.

1. Have you defied your parents authority to their face?

2. I have often gone against my parents wishes.

3. If your friends want to go out and your parents wanted you to stay home for an evening, what do you think you would do?

4. I would not care if my parents or guardians were a little disappointed in me.

Given the weakness in reliability and the need for new items in the second wave of this research certain items were added in order to bolster the scale. These items are as follows:

5. Do you avoid conflict with your parents?
6. Do you "talk back" to your parents?
7. Do you argue with your parents?

ALPHA = .4607   STANDARDIZED ITEM ALPHA = .4837
ALPHA = .56
ALPHA = .64

The final version of this scale involved item analysis with several new questions. Tnese included:

35G. Have you defied your parent's authority to their face?
35H. My parents (or guardians) would be disappointed if I did not attend school regularly.
36A. Do you avoid conflict with your parents?
36B. Do you talk back" to your parents?
36C. Do you argue with your parents?
44A. I would not care if my parents or guardians were a little disappointed in me.
62. If your friends wanted to go out and your parents wanted you to stay home for an evening, what do you think you would do?

With these items included in this scale it reaches an Alpha reliability of .64.

B15 - LABELING AS A TROUBLEMAKER

This scale assesses the degree to which the youth feels that he or she is labeled as a troublemaker by various sources (mother, father, teachers and friends). Normally the labeling variables are focused on the source of the labeling i.e. the specific person doing the labeling. In the present instance we have experimented, with a focus on the form of labeling, and aggregated this across the different sources. Thus the present form focuses on labeling as a troublemaker or a delinquent. The present scale has a very satisfactory Alpha reliability of .78, and thus indicates a homogeneous scale. We expect that this scale will be highly linked to general problem behavior including dropout.

1. How do you think your mother (guardian) sees you, as a troublemaker?

2. How do you think your father (guardian) sees you, as a troublemaker?

3. How do you think most of your classroom teachers see you, as a troublemaker?

4. How do you think your friends see you, as a troublemaker?

ALPHA = .7821   STANDARDIZED ITEM ALPHA = .7821

ALPHA = .80
ALPHA = .8346

B16 - LABELING AS ACADEMIC

This labeling scale brings together all of the various indicators which suggest that the youth feels he or she is labeled either as a good student or as an inadequate, poor student. The labeling, sources again include mother, father, teacher, friends. The present Alpha is very high at .82. All of the items have very high correlations with the overall scale ranging from .42 to .62.

1. How do you think your mother (guardian) sees you, as a good student?

2. How do you think your father (guardian) sees you, as a good student?

3. How do you think most of your classroom teachers see you, as a good student?

4. How do you think your friends see you, as a good student?

5. How do you think most of your classroom teachers see you, as needing help with school work?

6. How do you think your mother (guardian) sees you, as needing help with school?

7. How do you think your father (guardian) sees you, as needing help with school?

8. What kind of learner do your teachers think you are?

9. My teachers think that I am a slow learner.

ALPHA = .8201   STANDARDIZED ITEM ALPHA = .8271
ALPHA = .82
ALPHA = .8170

B17 - LABELING AS SOCIALLY POPULAR

We had only two items which indicated labeling by teachers and friends on popularity. The two item scale reaches a high reliability of .72. Both items correlate .56 with the overall scale.

1. How do you think most of your classroom teachers see you, as very popular?

2. How do you think your friends see you, as very popular?

   ALPHA = .7238   STANDARDIZED ITEM ALPHA = .7240
   ALPHA = .78
   ALPHA = .7681

B18 - LABELING AS INDEPENDENT
This two item scale focuses on whether the youth feel that they are perceived as independent. The sources of labeling are teachers and friends. The two item scale reaches a satisfactory reliability level with an Alpha of .64. The theoretical expectation is that high levels of independence may be linked to a move into the moratorium state or perhaps a readiness to assume independence and exercise options. We expect that the present scale may interact with other influences to produce a certain type of dropout.

1. How do you think most of your classroom teachers see you, as being independent?

2. How do you think your friends see you, as being independent?

   ALPHA = .6380   STANDARDIZED ITEM ALPHA = .6384
   ALPHA = .60
   ALPHA = .6386

B19 - LABELING BY MOTHER
This scale represents the more conventional approach to labeling by focusing strictly on the source of the labeling. In this instance we examine labeling by mothe for the general positive vs. negative dimension. The Alpha reliability of .53 is only modest. We expect that high levels of negative labeling from any source, including the mother, may indicate a potential deterioration of that relationship. In the present instance deterioration of the relationship to parents may be expected to correlate with the problem behavior.

1. How do you think your mother (guardian) sees you, as a troublemaker?

2. How do you think your mother (guardian) sees you, as a good student?

3. How do you think your mother (guardian) sees you, as needing help with school work?

   ALPHA = .5314   STANDARDIZED ITEM ALPHA = .5386
   ALPHA = .41
   ALPHA = .4775

B20 - LABELING BY FATHER

This labeling scale focuses on positive vs. negative labeling by father. The Alpha of .53 again is modest but workable. All three items have a fairly high overall correlation to the scale. We expect that this scale may also indicate a potential deterioration of the relationship with the father.

1. How do you think your father (guardian) sees you, as a troublemaker?

2. How do you think your father (guardian) sees you, as a good student?

3. How do you think your father (guardian) sees you, as needing help with school work?

   ALPHA = .5324   STANDARDIZED ITEM ALPHA = .5352
   ALPHA = .54
   ALPHA = .4357

B21 - LABELING BY TEACHER

This labeling scale focuses on labeling by teacher and agglomerates the various kinds of labeling dimensions (popularity, independence, competence as a learner, trouble- maker). The scale reliability of .60 is adequate and the item to overall scale correlations indicate that all the items contribute meaningfully to this scale. We expect that negative labeling by teachers may be correlated to various other negative aspects of schooling including dropout.

1. How do you think most of your classroom teacher see you, as a troublemaker?

2. How do you think most of your classroom teachers see you, as a good student?

3. How do you think most of your classroom teachers see you, as needing help with school work?

4. How do you think most of your classroom teachers see you, as very popular?

5. How do you think most of your classroom teachers see you, as being independent?

6. What kind of a learner do your teachers think you are?

7. My teachers think that I am a slow learner.

ALPHA = .6045   STANDARDIZED ITEM ALPHA = .6088
ALPHA = .60
ALPHA = .5708

B22 - LABELING BY FRIENDS

This scale does not reach an acceptable level of reliability with an Alpha of .33. However, the four items all contribute positively to the scale indicating that a meaningful dimension exists. A way of strengthening this scale would be to add additional items regarding labeling by friends. Again, the various dimensions of labeling are aggregated (troublemaker, good or bad student, independent, and popularity).

1. How do you think your friends see you, as a troublemaker?

2. How do you think your friends see you, as a good student?

3. How do you think your friends see you, as being independent?

4. How do you think your friends see you, as very popular?

ALPHA = .3298   STANDARDIZED ITEM ALPHA = .3318
ALPHA = .37
ALPHA = .4310

B23 - ENJOYMENT OF SCHOOL

The seven items in this scale focus on whether the youth enjoys school, likes studying, likes his or her classes and so forth. The Alpha of ... is only moderate, however, all items correlate reasonably well with this scale. The enjoyment of reading is the only item which if removed would produce a significantly higher alpha of .60. However, in the present instance we believed that the improvement in Alpha did not warrant the removal of this particular item.

1. When I'm late for class I feel very anxious.

2. Do you enjoy studying?

3. This school makes me like to learn.

4. Is there some class that you really enjoy going to each day?

5. How do you feel about this school, like or don't like?

6. How do you feel about the classes you are taking, like or don't like?

7. How well do you like to read?

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ALPHA =  .5373     STANDARDIZED ITEM ALPHA =  .6048
ALPHA =  .48       STANDARDIZED ITEM ALPHA =  .53
ALPHA =  .5247
```

B24 - EDUCATIONAL ASPIRATIONS

Aspirations are critical within the terms of both strain and control theories (Hirschi 1969, Elliott et al. 1985). High aspirations would be expected to keep a youth in school while conversely, the erosion of aspirations would be expected to correlate with various problem behaviors including dropout. The present two item scale does not reach a sufficiently high level of reliability (.31).

1. As things stand now, how far in school do you want to go?

2. How important is it to you personally to get good grades?

Due to the low initial level of reliability, in the present

research we added several items to the second wave of the study. The youth is asked to rate the level of importance of the following goals:

3. to graduate from high school
4. to go to college
5. to graduate from college.

We also strengthened the Alpha reliability for Wave 1 of the study by coding the open ended question on job aspiration and adding this to the present short two item scale. We note that both items have a fairly high correlation to each other (.27) and correlate positively with the overall scale, and thus the Alpha of .31 was significantly improved.

ALPHA =   .3138   STANDARDIZED ITEM ALPHA =   .4276
ALPHA =   .77
ALPHA =   .7815

When the above items are added to this scale the Alpha reliability strengthened considerably and the unstandardized Alpha =.78, standardized item Alpha =.78.

B25 - EDUCATIONAL EXPECTATIONS

Expectations are important because if the youth does not expect to graduate from school there is a higher likelihood of dropping out. The present two item scale did not reach a high level of reliability because it mixes expectations regarding educational goals and expectations regarding occupational goals.   However, the two items correlate at .33 with each other to produce an Alpha of .37 for the short two item scale.

1. Realistically, how far in school do you expect to go?

2. What do you think are your chances of getting ahead and
        being successful in your goals?

To strengthen the scale in the second wave of the study we added the following items. The youth was asked how optimistic he or she felt about achieving the following goals:

3. graduating from high school as reported in the Gottfredson
4. going to college
5. graduating from college

These three items will be assessed regarding their contribution to an increased reliability level for this scale.

ALPHA = .3679   STANDARDIZED ITEM ALPHA = .4913
ALPHA = .34   STANDARDIZED ITEM ALPHA = .44
ALPHA = .3384

B26 - BELIEF IN THE VALUE OF SCHOOLING (IDEOLOGY OF EDUCATION)

McCloud (1987) stresses the critical importance of this variable from the various theories of social mobility point of view. To the degree that education is seen as a key ingredient of upward mobility and a pathway is accessible to the youth, the youth may persevere with their schooling effort. If such a belief is lost and the youth believes that upward mobility through education is a myth, or is impossible, than we might expect theoretically, to see higher rates of alienation and withdrawal from school. Thus, the present scale is constructed to assess McCloud's concept. The scale reaches a satisfactory level of reliability with an Alpha =.67. All of the items have very high correlations with the overall scale indicating a homogeneous scale.

1. Do you agree that having a high school diploma is the only way to get ahead?

2. Do you agree that all people should have at least a high school education?

3. I am learning things in school that will help me get a good job in the future.

4. Do you believe that what you are learning in school will help you achieve your career goals?

5. I can learn more from a good job than I can at school.

6. Is what you learn in school useful outside of school?

7. Do you agree that an education will help you to be a mature adult?

8. Do you think that most people who drop out of school before graduation will be sorry someday?

9. Do you sometimes feel that you'd like to quit school?

10. Is it worthwhile to drop out of school and get a job?

ALPHA = .6728   STANDARDIZED ITEM ALPHA = .6790
ALPHA = .70
ALPHA = .7647

B27 - BELIEF IN EFFECTIVENESS OF YOUR SCHOOL

This six item scale assesses whether the youth are satisfied with the present school they are in and whether the youth believe that they are making good progress and learning useful materials in this school. To the extent that youth believe that their present school is useful and effective and that they are making progress the youth will be experiencing benefits from being in school. Low scores on this scale might be expected to produce a more negative feeling about the school and a greater readiness on the part of the youth to behaviorally and emotionally withdraw from the school. The present scale reaches a satisfactory reliability level (Alpha = .77). All of the items have a high correlation with the overall scale indicating a very homogeneous scale.

1. How satisfied are you with your academic progress in school?

2. In school I learn about things I want to know.

3. When I am in school I feel I'm doing something that is really worthwhile.

4. In school I am improving my ability to think and solve problems.

5. In school I am learning things I will need to know to be a good citizen.

6. Is most of the school day a waste of time?

ALPHA = .7675   STANDARDIZED ITEM ALPHA = .7658
ALPHA = .75
ALPHA = .7813

B28 - BELIEF IN FAIRNESS

This three item scale assesses whether the youth believes that their school rules are fair. The present scale fits well with Hirschi's theory of social bonding. To the degree that a youth does not accept the

validity of an institution, there may be a weakening of social bonding to that institution. The Alpha reliability of this scale is acceptable at .58.

1. The school rules are fair.

2. The punishment for breaking school rules is the same no matter who you are.

3. The principal is fair.

    ALPHA = .5796   STANDARDIZED ITEM ALPHA = .5866
    ALPHA = .51
    ALPHA = .5624

B29 - SCHOOL EFFORT

This six item scale examines the amount of effort that the youth puts forth in school work. It examines how hard the student works, the neatness and tidiness of their school work, and their tendency to be responsible. The Alpha reliability of this scale is .68. All items have high and significant item to scale correlations. This scale is expected to represent an integration bonding to the school and to education. Therefore, a high score on this aspect of bonding would be expected to correlate negatively with problem behaviors such as dropping out.

1. Compared to other students, how hard do you work (study) in school?

2. I turn my homework in on time.

3. My school work is messy.

4. I don't bother with homework or class assignments.

5. If a teacher gives a lot of homework, I try to finish all of it.

6. How much time, on the average, do you spend doing homework outside school?

    ALPHA = .6817   STANDARDIZED ITEM ALPHA = .6934
    ALPHA = .67
    ALPHA = .6691

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B30 - ATTITUDE TO DROPOUT

The intent of this scale is to assess the student's attitude towards dropout. It assesses the cost of dropping out i.e. when a dropout will eventually feel regret. It assesses when a student occasionally feels like quitting school and whether or not the student can see any benefit of dropping out i.e. the benefit of getting a job. Thus the more positive attitudes might be expected to facilitate the move towards dropping out. This scale was not successful, the Alpha of .23 is quite unsatisfactory even for a three item scale. This scale was bolstered with additional items.

1. Do you think that most people who drop out of school before graduation will be sorry someday?

2. Do you sometimes feel that you would like to quit school?

3. It is worthwhile to drop out of school and get a job.

For the second wave of the study we attempted to improve this scale by adding the following items which again focus on the costs of dropping out and any potential benefits. The present scale is theoretically overlapping with belief in the ideology of schooling. We examined the relationships between these two concepts with factor analytic methods following the scale development.

4. Dropping out would really hurt my personal chances for future success.

5. I don't think I have much to lose by dropping out.

6. Dropping out would cause more problems than it would solve.

ALPHA =	.2328	STANDARDIZED ITEM ALPHA =	.2608
ALPHA =	.39	STANDARDIZED ITEM ALPHA =	.54
ALPHA =	.4901	STANDARDIZED ITEM ALPHA =	.6049

B31 - BOREDOM AT SCHOOL

Boredom has frequently been found to be widespread amongst adolescent school age youth and is an indicator that the student has not become involved in school or finds the work at school relatively

uninteresting or meaningless. Therefore, we constructed a short three item scale to assess school boredom The scale examines whether the student finds school interesting or uninteresting and includes a self-report measure of school boredom. The reliability of the scale is satisfactory. We expect this scale may correlate positively with most school problems including disengagement and dropout.

1. School gives me a chance to learn many interesting things.

2. I am bored by school.

3. Are most of your classes interesting?

ALPHA = .6544   STANDARDIZED ITEM ALPHA = .6587
ALPHA = .64
ALPHA = .6506

B32 - SCHOOL PUNISHMENT

High levels of punishment might be expected to proceed school withdrawal and dropout. From an exchange theory point of view if the level of punishment exceeds the level of rewards there may be an erosion of bonding to the school. The five item scale of school punishment examines various formal disciplinary punishments, e.g. suspension, being sent to the principal, being given extra assignments, and so forth. The reliability of this scale is satisfactory (Alpha = .64).

1. In the last month, were you sent out of class for punishment?

2. In the last month, did you have to stay after school as a punishment?

3. In the last month, did you get an extra assignment as punishment?

4. During the last semester and also this semester in school, have you ever been sent to the principal for acting up?

5. During the last semester and also this semester in school, have you ever been suspended?

ALPHA = .6399   STANDARDIZED ITEM ALPHA = .6319
ALPHA = .53
ALPHA = .7122

B33 - SChOOL REWARDS

This short scale of two items reaches an Alpha reliability of .39 and therefore needs to be bolstered with new items. In the second wave of the study a number of acknowledgement items were added.

1. Did you help win an award or prize for your group or class because of your work in school?

2. Did you win an award or prize for something that you did other than schoolwork?

These items assume that recognition or acknowledgement of a youth is a reward. Thus the following items were added.

3. Did you participate in any athletics or sports teams at school?

4. Have you been a member of any athletic or sports teams?

5. Have you been a member of any clubs or societies at school?

When these items were added, the Alpha level improved somewhat. The new Alpha levels for ordinary Alpha was .40 and for standardized Alpha .40. Since these Alpha levels still did not reach satisfactory levels, we experimented by adding memberships of various teams and membership of debating societies or school clubs. The addition of these nonacademic rewards finally improved the Alpha to .53 and .52 for the standardized version.

$$ALPHA = .3863 \qquad STANDARDIZED\ ITEM\ ALPHA = .3903$$
$$ALPHA = .67$$
$$ALPHA = .3823$$

B34 - ACADEMIC ATTAINMENT

Academic attainment grades are often seen as a major reward or punishment in the school. If the youth is labeled as high achieving and successful, this will constitute a reward. The converse is also true. This short two item scale focuses on grades given to the youth. This scale reaches a high reliability of .75.

1. At the end of the last school term, were you grades mostly: A's, B's, C's, D's, or F's?

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2. What was your grade in English in your last (most recent) gradings?

ALPHA = .7483   STANDARDIZED ITEM ALPHA = .7489
ALPHA = .69
ALPHA = .6752

B35 - WITHDRAWAL VS. PARTICIPATION IN CLASS

The four items of this scale assess whether the student participates actively in the class or whether the student is passive and withdrawn in classroom. This scale is part of the general examination of classroom behavior styles, and reaches a h' `h Alpha of .70.

1. Do you answer if the teacher asks a q, ;stion?

2. Do you raise your hand if a teacher asks a question?

3. Do you ask the teacher questions?

4. If you can't do the work, do you ask the teacher for help?

ALPHA = .6974   STANDARDIZED ITEM ALPHA = .6961
ALPHA = .67
ALPHA = .68

B36 - AGGRESSION TOWARD TEACHERS

The items in this scale examine the degree to which the student exhibits various forms of assertiveness and aggression e.g. arguing, answering back, and doing things to make the teacher angry. We expect that this scale will be useful in identifying those youth who have adopted a rebellious extrapunitive style in school. One form of dropout has been designated the extrapunitive rebellious dropout (Fine 1986).

1. Do you answer back if a teacher gets angry with you?

2. Do you argue with your teachers?

3. Do you do things that you know will make the teacher angry?

ALPHA = .7041   STANDARDIZED ITEM ALPHA = .7131
ALPHA = .68
ALPHA = .7328

B37 - CLASSROOM DISRUPTION

This scale differs from the above aggression towards teachers scale in that it is more focused on general disruption versus quietness in the class. The disruption items do not specifically focus on student-teacher relationships but examine student-student relationships and general excitement and disruptive behavior. The Alpha of .73 indicates a highly reliable scale and the item-scale correlations are all above .30 indicating a relatively homogeneous scale with each item contributing to the scale.

1. Are you quiet in class?

2. Are you disruptive in class?

3. Do you "goof off" in class so that other students can't work?

4. Do you shout out answers before you are asked?

5. Do you get into fights or arguments with other students?

ALPHA = .7263   STANDARDIZED ITEM ALPHA = .7339
ALPHA = .70
ALPHA = .7806

B38 - DISTRACTION IN CLASSROOM

Distraction indicates an inability to focus on school work and on the teacher's instruction. This scale includes items such as day dreaming, the inability to pay attention, and looking out the classroom window. The present four item scale does not reach a satisfactory level of reliability (Alpha =.48). However, we may note that all of the items have high correlation to the scale and are all quite positively correlated to each other.

1. Do you look out of the classroom window?

2. Do you daydream in class?

3. When your teacher is talking, do you pay attention?

4. Can you keep on working for a long time?

In the second wave of the study we added the following items in an attempt to improve the Alpha of this scale.

5. Do you fall asleep in class?

6. Does your mind wander in class?

7. Do you tune into the teacher's lessons?

These additional items might be expected to bring an increment in reliability beyond the point .50 level and even higher for the standardized alpha.

ALPHA = .4823   STANDARDIZED ITEM ALPHA = .4840
ALPHA = .55
ALPHA = .7297

When these new items were added the Alpha reliability of this scale improved substantially. The unstandardized Alpha was .73 and the standardized Alpha also = .73. All three of the new items made a substantial contribution to the scale.

B39 - DISORGANIZED STUDY HABITS

This short three item scale was constructed to examine the students approach to school, organized vs. unplanned. The scale did not reach a satisfactory level of reliability, with an Alpha of .25. All of the items had positive correlations with the scale and correlated positively with each other.

1. Do you have all the books and other things you need for lessons?

2. Do you leave work unfinished?

3. Do you work on your own without needing any help?

We added the following items for the second wave of the present study to strenthen the scale.

4. Do you forget your homework assignments?

5. Do you make plans to get your school work done?

6 Do you become confused about what you need to do next at school?

7. Do you set schedules for your school assignments?

These items might be expected to improve the measurement of the concept of disorganized study habits.

ALPHA = .2501   STANDARDIZED ITEM ALPHA =   .2516
ALPHA = .58
ALPHA = .6652

With the new items included in this scale, the Alpha reliability became acceptable. The unstandardized reliability was .58 and standardized Alpha .59. The third year alpha reached a high of 0.66

B40 - NORMLESSNESS AT SCHOOL

This scale is an adaptation of items from the more general normlessness scale. This variant focuses explicitly on the concept of normless or deviant behavior at school. This two item scale reaches a very satisfactory level of reliability (Alpha =.77).

1. Have you copied someone else's assignments?

2. Have you cheated on tests?

ALPHA = .7687   STANDARDIZED ITEM ALPHA =   .7688
ALPHA = .63
ALPHA = .7704

B41 - SCHOOL AVOIDANCE

The concept of "avoiding school" is often found to be a major predictor of ultimate dropping out. Therefore, we constructed a scale of school avoidance. The scale focuses on cutting classes, truancy, and lateness to classes and school. We expect that this scale will emerge as a major predictor of dropping out. The reliability of this scale is quite satisfactory for a short five item scale.

1. In the last four weeks, how many days did you cut school
        all day?

2. In the last four weeks, how often did you cut one or more
        of your classes?

3. I have skipped school without a legitimate excuse.

4. Do you come to class late?

5. Do you come to school late?

ALPHA =   .7669   STANDARDIZED ITEM ALPHA =   .7878
ALPHA =   .73
ALPHA =   .7516

B42 -   VICTIMIZATION IN SCHOOL

This scale assesses the degree to which youth experience
various forms of victimization in school.   This victimization scale is
partly a measure of school environment in that it assesses the amount of
crime experienced by a youth in that environment.   When aggregated across
youth in a school it may provide an approximation to the amount of
violence in each school as noted by Gottfredson et al., (1983).   The
reliability of the present scale is reasonable, Alpha = .54; but falls below
that achieved in Gottfredson's original study, Alpha = .69. This scale has
been found to correlate with self-reported delinquency.   This suggests
that those persons with high victimization scores tend to be fairly high in
self-reported delinquency.   It has also been found to have negative
relationships with self-esteem, school attachment, and other positive
pro-social measures. Gottfredson (1983) reports that it also has a high
relationship to punishment i.e., those students who have high levels of
victimization also experience higher levels of punishment by school staff
(Gottfredson et al., 1982).

1. Did anyone steal something worth less than $1 from your
       desk, locker, or other place at school?

2. Did anyone steal something worth more than $1 from your
       desk, locker, or other place at school?

3. Did anyone physically attack or hurt you?

4. Did anyone force you to hand over money or things worth $1
       or more directly from you by force, weapons or threats?

5. Did anyone threaten you with a knife or gun?

6. During the last semester and also this semester in school,
       have you ever had to fight to protect yourself?

ALPHA =   .5446   STANDARDIZED ITEM ALPHA =   .5770
ALPHA =   .55   STANDARDIZED ITEM ALPHA =   .61
ALPHA =   .6043

B43 - SAFETY IN SCHOOL

This short three item scale aims to assess the degree to which students feel safe and secure within the school. It focuses largely on feelings of safety within the school building as well as in travel to and from school. Again, this is a measure of the immediate feelings of particular school students, although, when aggregated across the students in a school it may provide an approximation to the environment of that school. The alpha reliability for this scale is surprisingly high (Alpha =.59).

1. How often do you feel safe while in your school building?

2. How often are you afraid that someone will hurt you or bother you at school?

3. How often are you afraid that someone will hurt or bother you on the way to and from school?

ALPHA = .5891   STANDARDIZED ITEM ALPHA = .5879
ALPHA = .71
ALPHA = .7012

B44 - GANGS IN SCHOOL

This short four item scale assesses each youth for their perception of the level of gang activity in his or her school. The four item scale reaches a reasonable reliability (Alpha=.55). The scale assesses whether the youth perceives that there are gangs in school, whether the gangs cause trouble in the school, whether the gangs try to get the youth to join as a member of the gang, and so forth. The scale can be seen as a measure of school climate when aggregated across the population of youth in this school. A final item in the scale assesses whether there are gangs in the neighborhood where the youth lives. It can be noted that all of the four items have very high scale to item correlations. The item assessing gangs in the neighborhood has a high correlation (R =.33) with the overall scale. Thus indicating that this item is closely and homogeneously linked to the scale.

1. Are there any gangs at your school?

2. Do gangs cause a lot of trouble in your school?

3. Do gang members try to get you to join their gangs?

4. Are there any gangs in the neighborhood where you live?

ALPHA = .5552   STANDARDIZED ITEM ALPHA = .5606
ALPHA = .41   STANDARDIZED ITEM ALPHA = .44
ALPHA = .5608

B45 - VIOLENCE BETWEEN TEACHER AND STUDENT

This short scale (3 items) examines the youth's perception of the level of violence from teacher to student and student to teacher. It might be perceived as a measure of disorderliness and disruption between teachers and students. The reliability of this scale is high given the fact that only three items are used (Alpha = .62). When aggregated across students within particular schools this can be a useful indicator of school climate.

1. During the last semester and also this semester in school, have you ever seen a teacher threatened by a student?

2. During the last semester and also this semester in school, have you ever seen a teacher hit or attacked by a student?

3. During the last semester and also this semester in school, have you ever seen a student hit or attacked by a teacher?

ALPHA = .6197   STANDARDIZED ITEM ALPHA = .6368
ALPHA = .56   STANDARDIZED ITEM ALPHA = .60

B46 - RACIAL TENSION

The six items in this scale examine the student's perception of relationships between different races. A related element of this scale is whether students of different races are segregated into different classes and whether the overall program is appropriate for all ethnic groups. The Alpha reliability of .63 indicates that this scale is reliably measured, and the item to scale correlations indicate that all items are highly and homogeneously correlated with the scale. The scale would lose reliability if any single item was deleted thus suggesting that all items are appropriately grouped together and that the scale is unidimensional.

1. Students of different races get on very well in this school.

2. Students of different races usually end up in different classes.

3. In this school, the color of your skin doesn't mean much, we are all friends.

4. The school program is appropriate for ethnic and minority groups.

5. Students of different races and backgrounds get along well with each other.

6. It is better if students of different races go to different schools.

ALPHA = .6306   STANDARDIZED ITEM ALPHA = .6213

A' PHA = .6039

B47 - STUDENT INFLUENCE

This scale assesses the degree of student participation in decision making in their school. This is a major component of alternative education programs. Theoretically when such participation is denied to youth there may be an increase in alienation or powerlessness. The present scale is an adaptation of the scale reported by Dennis (1979) and the scale reported by Gottfredson et al., (1983). The scale has a reasonable reliability of alpha = .62.

1. Students can get an unfair school rule changed.

2. Students have little say in how this school is run.

3. Teachers sometimes change their lesson plans because of student suggestions.

4. This school hardly ever tries anything new.

5. Students are seldom asked to help solve a problem the school is having.

6. It is hard to change the way things are done in this school.

7. Students have helped to make the school rules.

   ALPHA = .6158   STANDARDIZED ITEM ALPHA = .6286
   ALPHA = .70
   ALPHA = .6499

B48 - CLARITY OF SCHOOL RULES

This scale assesses whether the youth understands and is knowledgeable about school rules. The six item scale has an alpha reliability of .54.

1. Everyone knows what the school rules are.

2. The principal runs the school with a firm hand.

3. Most of my teachers run their classrooms with a firm hand.

4. In most of my classes, if a rule is broken, students know
   what kind of punishment will follow.

5. The teachers let the students know what they expect from
   them.

6. The principal lets the students know what he or she expects
   of them.

   ALPHA = .5391   STANDARDIZED ITEM ALPHA = .5569
   ALPHA = .58   STANDARDIZED ITEM ALPHA = .60
   ALPHA = .5863

B49 - INDIVIDUALIZED INSTRUCTION

The reliability of the original Gottfredson scale was relatively low (Alpha = .42), therefore, in the present instance we attempted to improve the scale by incorporating certain additional items. The present ten item scale has substantially bolstered this concept. The reliability of the present scale is high (Alpha = .72).

Individualized instruction is seen as a benefit to youth, particularly youth in special education programs and other youth who might require special help. The scale involves questions about individual learning goals and rewards based on personal improvement over past performance, as well as other features such as a pace of classroom work fitted to particular individuals.

1. This school has special classes for slow learners.

2. I have a learning plan that was made just for me.

3. I can work at my own speed in class.

4. Students at my school can choose harder or easier courses,
   as best fits their needs.
5. When a student has problems, the school works out a plan
   to help that student.

6. Students are able to proceed at their own rate in most
   courses.

7. I can determine what I study.

8. I can change my school program if it is not right for me.

9. In school I can make some decisions about what and how I
   learn.

10. I have enough opportunities to choose subjects that I like.

   ALPHA = .7205   STANDARDIZED ITEM ALPHA = .7070
   ALPHA = .6716

B50 - DIFFERENTIAL TREATMENT
   This short scale attempts to assess student perception of
unfairness and of being treated differently from other, perhaps more
privileged, youth. The scale was not a success. If the reliability does not
reach satisfactory levels, this scale will be dropped.

1. This school has special classes for slow learners.

2. Students in alternative courses in this school feel put
   down.

3. Some students in this school are favored more than others.

Given that this scale in its present form was unsuccessful we developed a
number of additional items for the second wave of the study in an attempt
to improve this scale. The following items were added to the
questionnaire.

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4. I think I am treated equally with most of the kids in the
   school.

5. We are all treated the same by the teachers in this
   school.

6. The teachers favor certain students in this school.

These new items substantially strenthened the scale and it reaches highly satisfactory levels.

ALPHA = .1944   STANDARDIZED ITEM ALPHA = .2011
ALPHA = .6106

B51 - RESPECT FOR TEACHERS
A student's attitude towards teachers may be a critical aspect in the development of social bonding to the school. The present scale focuses on whether the youth likes and respects the teachers and principal. A related aspect of the scale is whether the student cares about the opinions of their teachers. The scale reaches a satisfactory level of reliability (Alpha = .58). It can also be noted that all item to scale correlations are in excess of .30, indicating that each item contributes substantially to the scale.

1. I have lots of respect for my teachers.

2. How do you feel about your principal, like or dislike?

3. How do you feel about the teachers in school, like or
   dislike?

4. Do you care about how your teachers see you?

ALPHA = .5817   STANDARDIZED ITEM ALPHA = .6174
ALPHA = .45   STANDARDIZED ITEM ALPHA = .51
ALPHA = .4497

B52 - SUPPORT FROM TEACHERS
One finding in the dropout literature is that many failing and dropout youth have experienced high levels of rejection and lack of support from teachers. This is sometimes linked to the concept of "pushout".

Therefore, the present scale assesses the degree to which the student perceives the teachers as supportive and nurturing versus nonsupportive and nonnurturing. The present scale might be useful in distinguishing between the pushout form of dropout and other subtypes of dropout (see Fine, 1986). The present eight item scale reaches a high reliability (Alpha = .77).

1. Teachers help me with schoolwork outside of class.

2. I feel comfortable asking my teachers for help.

3. This year have your teachers and counsellors given you enough guidance in deciding what is important in life?

4. This year have your teachers and counsellors given you enough guidance in deciding what you want to achieve in life?

5. This year have your teachers and counsellors given you enough guidance in learning about jobs and careers?

6. This year have your teachers and counsellors given you enough guidance in learning about getting along with other students?

7. This year have your teachers and counsellors given you enough guidance in planning what courses to take in school?

8. This year have your teachers and counsellors given you enough guidance in solving personal problems?

ALPHA =   .7679   STANDARDIZED ITEM ALPHA =   .7592
ALPHA =   .76   STANDARDIZED ITEM ALPHA =   .7777

B53 - FEELING DISRESPECTED BY TEACHERS

One theoretical suggestion (Greenberg, 1977) is that many youth feel labeled and stigmatized in school and that as a result of such treatment they will have a higher tendency towards delinquent behavior. This scale might be examined in relationship to negative labeling by teachers. Gottfredson (1983) suggests that this scale assesses whether

the students feel that the school degrades them and that the teachers may treat them without dignity. The present three item scale reaches a reliability of .57.

1. Students are treated like children here.

2. Teachers treat students with respect.

3. Teachers do things that make students feel "put down".

   ALPHA = .5745   STANDARDIZED ITEM ALPHA = .5752
   ALPHA = .54
   ALPHA = .4945

B54 - RECOGNITION/ENCOURAGEMENT FROM TEACHERS
This scale in its present three item form was not successful and did not reach a satisfactory level of reliability (Alpha = .38).

1. Teachers say nice things about my classwork.

2. Teachers often call on me when I raise my hand.

3. Teachers don't ask me to work on special classroom
      projects.

   ALPHA = .3775   STANDARDIZED ITEM ALPHA = .3827
   ALPHA = .33   STANDARDIZED ITEM ALPHA = .34
   ALPHA = .5501

A dimension of the above scale was a form of rejection by teachers by essentially being excluded from the classroom activities. Such feelings of exclusion form the basis of certain new items, which were added in the attempt to more reliably assess this dimension. The following items were added for the second wave.

4. I feel like teachers ignore me in class.

5. I often feel left out of classroom discussion by teachers.

The item "Teachers say nice things about my classwork" was relocated to another scale. When these new items were added in the second wave of this study the Alpha reliabilities improved so that the unstandardized Alpha jumped to .54 and the standardized Alpha jumped to .53.

B55 - SUPPORT FROM COUNSELORS

This small scale assesses the degree to which the youth perceive their relationships to counselors as being relatively effective and being conducted on an individualized basis. The two items have a very high mutual correlation (.46). The overall scale reaches an Alpha of .63 and is therefore quite reliable.

1. My counselor knows me on an individual basis.

2. I communicate and work effectively with my counselor.

Because of the brevity of this scale it was decided that this scale could be bolstered by the addition of one item in the second wave of the study. Therefore, the following item was added.

3. My counselor has not been helpful in helping me solve problems.

ALPHA = .6294   STANDARDIZED ITEM ALPHA = .6297
ALPHA = .73
ALPHA = .8044

With this new item in the scale suprisingly the Alpha was not improved. In fact, the new Alpha with this 3 item scale equals .64 which in fact is less than the Alpha obtained for the two item scale in Wave 2 data.

B56 - ROLE MODELS FOR EDUCATION (general)

This scale assesses the educational successes and failures of the youths' mother, father, and siblings. Essentially it examines whether the mother, father and siblings have dropped out or have completed high school. It assesses how far the parents went in their educational careers. The three item scale reaches a reliability of .51. The three items all have strong correlations to the scale indicating that there is a substantial coherence between these items. The theoretical justification for the present scale is that dropout amongst mother, father or siblings might provide role models to the youth, and that failure within the family might be related to a tendency on the part of the youth. Thus, this scale fits with social learning theories of youth problem behavior.

The items entering this scale are as follows:

1. How far did your mother (guardian) go in school?

2. How far did your father (guardian) go in school?

3. How many of your brothers or sisters dropped out before
   graduation?

4. How many of your friends quit school?

5. If you have a best friend, is he or she still in school?

   ALPHA = .5080   STANDARDIZED ITEM ALPHA = .5136

   Because of the weakness in the reliability of this scale we
decided to add two items to bolster the scale in the second wave. These
items are as follows:

6. Do you hang out with a lot of kids who have already left
   school?

7. I know a lot of kids who have left school.

B57 - DROPOUT BEHAVIOR AMONG FRIENDS
   This short two item scale attempts to assess the exten: of
dropout behavior amongst friends. This scale falls into the perspective of
social learning and modeling theories. The scale content is as follows:

1. How many of your friends have quit school?

2. If you have a best friend, is he or she in school?

These two items have a correlation of .275 and when the scale is formed
with the raw scores the Alpha reliability of only .19 which is obviously
inappropriate. However, when the scale is formed using z scores the Alpha
reliability jumps to .43. Therefore, we formed two versions of the scale.
One (B57) is with raw scores and the second (B57z) is formed using
standardized scores. To bolster the scale in the second wave of data we
added the following items:

3. Do you hang out a lot with kids who have already left
   school?

4. I know a lot of kids who have left school.

ALPHA = .19   STANDARDIZED ITEM ALPHA = .43
ALPHA = .43
ALPHA = .3336   STANDARDIZED ITEM ALPHA = .40

B58 - ATTACHMENT TO PEERS

Attachment to peers is important in a number of theories of adolescent problem behavior (Hirschi 1969, Elliott et al., 1985). The present four item scale is made up of the following items.

1. How much do you want to be like the kind of person your
       best friend is?

2. Who has more influence over you, your friends, or your
       parents (guardians)?

3. If your friends wanted to go out and your parents wanted you to stay
       home for an evening, what do you think you would do?

4. Most of my friends are good friends with each other.

This scale was unreliable, Alpha = .14, and it is unlikely that it will be used in any further analysis. Additional examinations and items were added in the second and third waves so that finally we were able to create a workable scale.

ALPHA = .0955   STANDARDIZED ITEM ALPHA = .0494
ALPHA = .5223

B59 - DELINQUENT PEERS

Peer influences are often critical in adolescent development. Peers may provide role models, they may present attitudes, beliefs, and values, and provide behavioral instruction to a youth. Most of the theories of adolescent social problem behavior have implicated peer influences as a critical component of deviant behavior. The present scale attempts to assess the degree to which the youth is embedded in a delinquent peer setting. The following five items make up this scale:

1. How many of your friends have been picked up by, or have
       been in trouble with the police?

2. Your best friend belongs to a gang, true or false.

3. Your best friend gets in trouble with the police, true or false?

4. Most of my friends smoke cigarettes, true or false?

5. My friends discourage me from smoking cigarettes, true or false?

The reliability of this scale is influenced by the relative variances of these items. Therefore, we decided to utilize the standardized item Alpha rather than the Alpha based on raw scores. This standardized Alpha of .587 is reasonably reliable and offers a useful scale.

ALPHA = .4721   STANDARDIZED ITEM ALPHA = .5872
ALPHA = .4754   STANDARDIZED ITEM ALPHA = .5042

B60 - POSITIVE PEER MODELS FOR EDUCATION

The present scale again assesses the peer setting of the youth. The six items assess the degree to which the youth's friends are interested in school, attend classes, have plans for college, and so forth. Thus this scale assesses the positive versus negative attitudes of friends towards education and school. All items are positively correlated, both with each other and with the overall scale total. The Alpha of .65 is reasonably reliable and offers a useful scale.

1. My best friend is interested in school, true or false?

2. My best friend attends class regularly, true or false?

3. My best friend plans to go to college, true or false?

4. Most of my friends think getting good grades is important, true or false?

5. Most of my friends think school is a pain, true or false?

6. My friends often try to get me to do things the teacher doesn't like, true or false?

ALPHA = .6545   STANDARDIZED ITEM ALPHA = .6608
ALPHA = .60
ALPHA = .6633

B61 - SOCIAL ISOLATION (GENERAL)

The five items in this scale attempt to assess social isolation. This component of loneliness (Weiss, 1974) focuses on the degree to which the youth is embedded in a fairly functional peer group. The scale assesses the number of friends, the ability to easily find friends when needed, and the amount of time spent hanging out with friends. The Alpha reliability is not high (.40), and therefore, this scale will be modified and we will add items to strengthen the reliability. It might be noted that all of the items have a fairly strong relation to the overall scale.

1. How much time do you usually spend after school hanging out with a group of friends?

2. I do lots of things with the same group of friends.

3. How many friends do you have?

4. Do you have a best friend or a friend that you feel close to?

5. I can always find friends when I want to.

ALPHA = .3984   STANDARDIZED ITEM ALPHA = .5000
ALPHA = .6359

B62 - SOCIAL ISOLATION AT SCHOOL

This scale again examines social isolation; however, in this scale, we focus specifically on social isolation within the school context. All of these items are focused upon school relationships. The five items, although they correlate reasonably positively with each other and all have positive correlations with the overall scale, do not produce a reliable scale. In this instance without standardized data the Alpha of .41 is only marginally reliable. With standardized data the Alpha increases to .45 and thus does not produce a highly reliable scale. In the second and third waves of the study the standardized alphas reached satisfactory levels.

1. I generally feel that I have lots of interests in common with the other kids in school.

2. Friends at school often come to me when they have problems or need advice.

3. The students are unfriendly to me.

4. I'm not asked to take part in school activities as much as I want to be.

5. I feel like I belong in this school.

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ALPHA =  .4125        STANDARDIZED ITEM ALPHA =  .41
ALPHA =  .51          STANDARDIZED ITEM ALPHA =  .55
ALPHA =  .5278        STANDARDIZED ITEM ALPHA =  .56
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B63 - EMOTIONAL ISOLATION

This scale focuses upon Weiss's concept of emotional isolation or emotional loneliness. This component of loneliness focuses upon deficits in deeper emotional attachments, and assess the degree to which the youth feels that others are not interested in his feelings, that he is not in tune with others, that nobody cares, and that there may be no one there for him if he or she is feeling down. The various items in this set correlate very highly with each other and with the overall scale. Most of the items have correlations above .30 with the overall scale. The alpha of .73 indicates a powerful and homogeneous scale.

1. I often feel lonely.

2. No one knows how I really feel about them.

3. Most people don't seem to accept me when I'm just being myself.

4. There are students at this school who will really help me if I have a problem.

5. Hardly anyone I know is interested in how I really feel inside.

6. I often feel alone even when I am with other people.

7. I feel in tune with the people around me.

8. I feel no one really cares much about what happens to me.

9. I know someone at school I could go to if I were just feeling down.

ALPHA = .7268   STANDARDIZED ITEM ALPHA = .7188
ALPHA = .76
ALPHA = .7562

B64 - NORMLESSNESS (Belief in rules)

This scale which Gottfredson (1984) titled "Belief in Rules" is referred to as normlessness in prior research. The scale essentially assesses whether the youth takes conventional, moral rules seriously or not. This scale essentially deems to differentiate between delinquent orientated and conventionally orientated youth. It focuses on the degree of tolerance which a youth has for various antisocial or deviant behaviors e.g. theft, breaking the law, and so forth. All items have a fairly positive correlations with the overall scale. The overall scale reaches an Alpha of only .55 and is therefore only marginally reliable. It is expected that this scale of normlessness will correlate with other tendencies towards deviant behavior as well as withdrawal from school and dropout.

1. Taking things from stores doesn't hurt anyone.

2. It is O.K. to take advantage of a chump or a sucker.

3. I am not the kind of person you would expect to get in trouble with the law.

4. I do not mind stealing from someone, that's just the kind of person I am.

5. It is all right to get around the law if you can.

6. People who leave things around deserve it if their things get taken.

7. Teachers who are hassled by students usually have it coming.

8. I do not have much to lose by causing trouble in school.

ALPHA = .55   STANDARDIZED ITEM ALPHA = .56
ALPHA = .61   STANDARDIZED ITEM ALPHA = .63
ALPHA = .58

B65 - SELF-ESTEEM

This seven item scale examines the youth's self-esteem. The seven items produce a fairly decent reliability (.715). All items have a

strong and powerful positive correlation with the overall scale. Most of these items correlate at .30 or greater with the overall scale. This scale is an adaptation of Gottfredson's scale which in turn was adapted from Rosenberg 1965 which also included some labeling scales from the National Longitudinal Panel Study (Elliott et al., 1985). In the present case the labeling were eliminated. Self-concept fits into a variety of theoretical perspectives including labeling theory and control theory. We expect that in general low self-concept will be associated with withdrawal from school.

1. Sometimes I think I am no good at all.

2. I feel I do not have much to be proud of.

3. I like myself.

4. These days I get the feeling that I'm just not a part of things.

5. I don't think I'm quite as happy as others seem to be.

6. I feel sad a lot of the time.

7. I am the kind of person who will always be able to make it if I try.

ALPHA = .7147 STANDARDIZED ITEM ALPHA = .7112
ALPHA = .74
ALPHA = .7152

B66 - LEARNER SELF-ESTEEM

This short two item scale is adapted from Dennis (1979); it focuses upon whether the youth perceives himself or herself as a competent learner, and thus focuses upon only one dimension of self-esteem. The Alpha of .61 indicates that the two items are highly correlated and can provide a fairly reliable approximation to learner self-esteem.

1. What kind of learner are you in most things?

2. How would you rate yourself in reading ability compared to other students?

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ALPHA = .6116   STANDARDIZED ITEM ALPHA = .6153
ALPHA = .64
ALPHA = .6343

B67 - INTERPERSONAL COMPETENCE IN SCHOOL (Anxiety at school)

This scale is part of the Gottfredson 1984 battery of tests. The Gottfredson scale has been strengthened by the addition of a few items. It has a strong school focus by incorporating various items regarding competency within school. The overall reliability is (Alpha = .60). A high score for this scale would indicate a youth who is socially comfortable and has feelings of competence in the school setting. We would expect that high scorers in this scale would be unlikely to dropout whereas low scorers with their feelings of incompetence, anxiety, and fear might be more likely to enter into dropout behavior.

1. I find it hard to talk in front of class.

1. I know how to get along with teachers.

2. If I want to, I can explain things well.

3. I find it easy to talk with all kinds of peor'c.

4. My friends regard me as a person with good sense.

5. I often feel awkward and out of place.

6. I often feel tense.
7. I worry about lots of little things.

8. I often feel nervous at school.

ALPHA = .6042   STANDARDIZED ITEM ALPHA = .5895
ALPHA = .62
ALPHA = .6183

B68 - IDENTITY DEVELOPMENT (Knowing who you are!)

Confusion over goals, aspirations, and life commitments is a common theme in various theories of adolescent development. Thus, the present scale utilizes four items to assess whether or not the youth has a clear view of himself or herself as a person and other related aspects of self-image. This short scale is fairly successful given its length. All

items correlate at .2 or greater of the overall scale and the reliability of .54 is acceptable for a short scale.

1. I have a clear picture of what I am like as a person.

2. I sometimes feel uncertain about who I really am.

3. I often wonder whether I'm becoming the kind of person I want to be.

4. If I had my choice I'd like for my life to be very different than it is.

ALPHA = .5431   STANDARDIZED ITEM ALPHA = .5383
ALPHA = .56
ALPHA = .5651

B69 - VALUE FOR INDEPENDENCE

This scale is adapted from Jessor and Jessor, 1977. It focuses on the degree to which the youth prefers to make his or her own decisions regarding dress, future plans, choosing entertainment, how to spend money, and so forth. A high score indicates a youth who has a strong preference for independent decision making. The nine item scale is highly reliable (.82). We expect that under certain circumstances a high tendency towards independence and autonomy may characterize certain kinds of dropouts.

1. How strongly do you like to be able to decide for yourself how to spend your free time?

2. How strongly do you like to dress the way that pleases you, though others may not dress that way?

3. How strongly do you like to be free to say exactly what you think when you're with other people?

4. How strongly do you like to be free to make your own plans now about what you're going to do with your life?

5. How strongly do you like to be free to decide for yourself what movies to see or books to read?

6. How strongly do you like to be able to choose your own clothes and personal possessions without having to get advice from others.

7. How strongly do you like to be considered mature enough to use good judgment in different situations?

8. How strongly do you like to be free to use the money you have in whatever way you choose?

9. How strongly do you like to be free to try new things on your own if they interest you?

ALPHA = .8200   STANDARDIZED ITEM ALPHA = .8210
ALPHA = .86
ALPHA = .8264

B70 - IMPULSIVENESS

This short scale brings together items indicating recklessness, risk taking or impulsiveness. The two items have a reasonably high correlation with each other (.21) and form a scale with an Alpha of .35. This does not quite reach satisfactory levels of reliability.

1. I would do almost anything on a dare.

2. I go out of my way to meet trouble rather than try to escape it.

Due to the low level of reliability, for the second wave of the study we bolstered the scale by adding the following items:

3. How often do you take risks without thinking about the consequences?

4. Do you like to take risks?

ALPHA = .3534   STANDARDIZED ITEM ALPHA = .3538
ALPHA = .46   STANDARDIZED ITEM ALPHA = .53
ALPHA = .4425   STANDARDIZED ITEM ALPHA = .54

When these new items were added they both contributed substantially to the reliability such that the standardized Alpha equals .54.

B71 - SCHOOL POWERLESSNESS (LOCUS OF CONTROL)

Powerlessness/external locus of control is an important component in the measurement of alienation. We expect that many dropout

3 $\overline{10}$

youth experience strong feelings of powerlessness in the school context
and in regard to their general life plans. We expect that this scale might
strongly relate to the scale that examines the belief in the ideology of
education (McCloud, 1987). We have augmented the scale with a number of
items focusing on causal attributions for school success e.g. whose fault
is it if you do poorly at school? The present scale has a reasonably
satisfactory reliability (Alpha =.61).

1. Whether you do well or poorly in school depends on ...

2. Whose fault is it if you do poorly in school?

3. Getting what you want has little or nothing to do with
     luck.

4. Every time I try to get ahead, something or someone else
     stops me.

5. Getting a good job is mostly a matter of being in the right
     place at the right time.

6. I have usually found that what is going to happen will
     happen no matter what I do.

7. Much of what happens to me is just a matter of chance.

8. Luck is more important than hard work.

9. Life is mostly a gamble.

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ALPHA =  .6127        STANDARDIZED ITEM ALPHA =  .6463
ALPHA =  .59          STANDARDIZED ITEM ALPHA =  .64
ALPHA =  .6663
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SCALES FOLLOWING THE ITEM FORMAT OF GOTTFREDSON (1983)

The following scales were formed using the Gottfredson (1983)
item content. Thus they may provide comparative scoring for the present
samples against the more broadly standardized scores from the work done
by the Johns Hopkins research program on School Improvement.

G1 - PARENTAL EDUCATION

Parental education has been shown by research to be an
important predictor of many schooling outcomes, particularly continuation

(Gottfredson, 1984; Sewell, Haller, Portes, 1969). The Gottfredson two item scale has an Alpha reliability of .74 and is quite reliable. The items ask how much education the student's father and mother have completed. This scale also suffices as an indicator of family socio-economic class; and is likely to predict both grades and continuation (Bachman, Johnson, and O'Malley 1978).

1. How far did your mother (guardian) go in school?

2. How far did your father (guardian) go in school?

ALPHA = .7408   STANDARDIZED ITEM ALPHA = .7429
ALPHA = .71

G2 - PARENTAL EMPHASIS ON EDUCATION CONTINUATION

The four items in this scale examine the level of parental interest in education, aspects of parental help, and whether the parents want the youth to continue their education and go on to college. The original Gottfredson scale achieves an Alpha of only .51. In the present instance we did not quite reach this even with the standardized item Alpha of .46. Gottfredson et al. also indicate that this scale is only moderately reliable. Parental encouragement or value on education is expected to relate to level of effort, persistence and student aspirations. Prior research has demonstrated that such influences are related to student persistence (Auto, 1976). Gottfredson et al. 1982 indicate that it has moderate negative correlations with self-reported delinquency and a small positive correlation with student reports of personal effort in school work.

1. Do your parents want you to go to College someday?

2. My parents (or guardians) keep track of how well I am doing in school.

3. My father (or guardian) helps me with my homework.

4. My mother (or guardian) helps me with my homework.

ALPHA = .3604   STANDARDIZED ITEM ALPHA = .4620
ALPHA = .39
ALPHA = .4181

G3 - ATTACHMENT (RESPECT) TO PARENTS

This scale emanates from Hirschi's control theory. Hirschi's theory (1969) asserts that attachment to parents should produce a higher commitment to conforming behavior, thus this scale should correlate negatively with all kinds of anti-social behavior including high school dropout.

1. How much do you want to be like the kind of person your mother (or guardian) is?

2. How close do you feel to your mother (or guardian)?

3. How close do you feel to your father (or guardian)?

4. How much do you want to be like the kind of person your father (or guardian) is.

5. I would not care if my parents or guardians were a little disappointed in me.

6. I have lots of respect for my parents or guardians.

    ALPHA = .7208   STANDARDIZED ITEM ALPHA =   .7261
    ALPHA = .69
    ALPHA = .6964

G4 - POSITIVE PEER ASSOCIATIONS

This concept is central to a variety of theories of deviant behavior including dropout, truancy, and so forth. Deviant and antisocial peer relationships are expected to predict delinquency, drug use and school dropout. The present scale reaches a relatively workable reliability level of .59 which is consistent with those achieved by Gottfredson et al. (1983) where the reliabilities varied between .55 and .70 for various subgroups. The Gottfredson research indicates that this scale is a potent correlate of delinquent behavior. The present version of this scale is strongly linked to school attitudes and behaviors e.g., my best friend is interested in school, attends classes regularly, plans to go to college, thinks that school is a pain, and finally, thinks that grades are important.

1. Most of my friends think getting good grades is important.

2. Most of my friends think school is a pain.

3. My friends often try to get me to do things the teacher
   doesn't like.

4. My best friend is interested in school.

5. My best friend attends class regularly.

6. My best friend plans to attend college.
7. My best friend belongs to a gang.

8. My best friend gets in trouble with the police.

9. How man of your friends have been picked up by, or have
   been in trouble with the police?

      ALPHA = .5880   STANDARDIZED ITEM ALPHA = .70
      ALPHA = .52   STANDARDIZED ITEM ALPHA = .63
      ALPHA = .5053

G5 - PARENTAL SUPERVISION
        This short scale examines whether the parents usually know
where the youth is and what they are doing. Gottfredson et al. (1982)
indicate that this scale correlates with lower scores in delinquent
behavior and higher efforts in school. The low reliability of this scale
suggests that it should be strengthened and that there may be doubts about
its usefulness as a separate scale. In the present research, the Alpha of
.37 is marginal and reflects Gottfredson's original low findings.

1. My parents almost always know where I am and what I am
   doing.

2. As far as my parents are concerned, I can come and go as I
   please.

      ALPHA = .3719   STANDARDIZED ITEM ALPHA = .3741
      ALPHA = .44
      ALPHA = .3848

G6 - ALIENATION (FROM SCHOOL AND TEACHERS)
        The Gottfredson version of alienation is a six item scale partly
developed on Scole's (1956) anomia scale. Some of the wording in this
scale has been modified to accentuate school-related issues and context.

The Alpha reliability in Gottfredson's 1982 report was .50, which is somewhat lower than the .69 achieved in the present study. Gottfredson et al., (1982) report that the scale correlates with self-reported delinquency and negatively with effort extended in school studies.

1. How important is it to your teacher that you do well in school?

2. How important is it to your teacher that you study hard?

3. How important is it to your teacher that you stay in school?

4. I feel like I belong in this school.

5. I feel no one really cares much about what happens to me.

6. These days I get the feeling that I'm just not a part of things.

ALPHA = .6941   STANDARDIZED ITEM ALPHA = .6780
ALPHA = .67
ALPHA = .7231

G7 - ATTACHMENT TO SCHOOL

Attachment to school is again central to Hirschi's control theory of delinquency (Hirschi, 1969). This theory suggests that strong attachment to the school is a major social bonding component, and will restrain the youth from participating in antisocial or delinquent behaviors. In the present research, this ten item scale has reached a high level of reliability, Alpha = .79. Prior research has found that this is a powerful predictor of delinquent behavior and school effort (Gottfredson, et al. 1982).

1. Do you care about how your teachers see you?

2. How do you feel about school, like or dislike?

3. How do you feel about the principal, like or dislike?

4. How do you feel about the classes you are taking, like or dislike?

5. How do you feel about the teachers, like or dislike?

6. How do you feel about the counselors, like or dislike?

7. I have lots of respect for my teachers.

8. This school makes me like to learn.

9. How important is it to you personally to get good grades?

10. In school I learn things I want to know.

ALPHA = .7935   STANDARDIZED ITEM ALPHA = .8120
ALPHA = .67
ALPHA = .7231

G8 - BELIEF IN RULES

A further aspect of social bonding is the belief in various normative values. The present scale assesses whether youth believe in various conventional social rules and values. The component of this is whether they believe that the particular normative values are widely shared. An expectation from Social Control Theory is that youth may differ in the levels to which they internalize such conventional belief. Strong internalization of conventional beliefs is theoretically seen as a constraint in regard to antisocial and delinquent behaviors. Research evidence has supported the linkage between this scale and delinquent behavior (Gottfredson, 1982; Hirschi, 1969; and others).

The 6-items in the original Gottfredson paper (1982) achieved a reliability of .53 overall. In the present study, the Alpha reliability of .54 is comparable to this. Gottfredson also indicates that it had a substantial negative correlation with delinquent behavior as earlier research and theory suggested.

1. It is all right to get around the law if you can.

2. People who leave things around deserve it if their things
        get taken.

3. Taking things from stores doesn't hurt anyone.

4. It is O.K. to take advantage of a chump or a sucker.

5. Teachers who are hassled by students usually have it

coming.

6. I do not have much to lose by causing trouble in school.

   ALPHA = .5417   STANDARDIZED ITEM ALPHA = .5566
   ALPHA = .61
   ALPHA = .5566

G9 - INTERPERSONAL COMPETENCE

      The original Gottfredson article reported a reliability of .42 for the scale. The present research essentially replicates this with an Alpha of .415. This concept is expected to correlate with various measures of psychological health or social adjustment. Gottfredson et al. (1982) report that it correlates positively with effort expended on school work. Other research indicates that it is modestly correlated with psychological health (Quay, 1964).

1. I have a clear picture of what I am like as a person.

2. I know how to get along with teachers.

3. If I want to, I can explain things well.

4. I find it easy to talk with all kinds of people.

5. My friends regard me as a person with good sense.

   ALPHA = .4154   STANDARDIZED ITEM ALPHA = .4178
   ALPHA = .36
   ALPHA = .4943

G10 - INVOLVEMENT IN SCHOOL

      The degree of involvement in conventional activities is a central variable in Control Theory. The theory suggests that involvement in such conventional activities will produce a higher stake in conformity. This is because the person may experience these activities as rewarding and therefore have much to lose by any misconduct. The Gottfredson items were adapted from the national longitudinal study (see Elliott et al., 1984). Gottfredson et al. (1982) report an overall reliability of .62, but note the scale did not correlate as expected with self-reported delinquency. They suggest that this might cast doubts on its construct validity.

1. I have spent time on intramural athletic teams during this school term, yes or no.

2. I have spent time on other athletic teams - in or out of school, during this school term, yes or no.

3. I have spent time on cheerleading, pep club or majorettes during this school term, yes or no.

4. I have spent time in debating or drama during this school term, yes or no.

5. I have spent time in band or orchestra during this school term, yes or no.

6. I have spent time in chorus or dance during this school term, yes or no.

7. I have spent time in school clubs during this school term, yes or no.

8. I have spent time working on the school newspaper, magazine, yearbook or annual during this school term, yes or no.

9. I have spent time in student council, student government, or political clubs during this school term, yes or no.

10. I have spent time in youth organizations in the community, such as Scouts, Y, etc. during this school term, yes or no.

11. I have spent time in church activities, including youth groups during this school term, yes or no.

12. I have spent time helping out at school as a library assistant, office helper, etc. during this term, yes or no.

ALPHA = .2959   STAN ARDIZED ITEM ALPHA = .4603
ALPHA = .58
ALPHA = .5874

G11 - POSITIVE SELF CONCEPT

The Gottfredson scale mixes up educational self-concept with general self-concept. It is a ten item scale, and in the present data reaches a reliability of .50. The Gottfredson scale is a modification of Rosenberg's 1965 Self-Esteem Scale, plus additional items. Gottfredson explicitly attempted to capture aspects of self-concepts specific to schooling and delinquency; thus certain labeling variables are also included. Gottfredson's item analysis suggested that these various elements could not be empirically separated. The overall Alpha reliability in Gottfredson's 1982 report vary between .52 and .65. This scale correlated highly with self-reported effort at school and negatively with self-reported delinquency. It also as expected, was negatively related to alienation and positively related to interpersonal competency.

1. How satisfied are you with your academic progress (your learning progress) in school?

2. Sometimes I think I am no good at all.

3. I feel I do not have much to be proud of.

4. I like myself.

5. I am the kind of person who will always be able to make it if I try.

6. How do you think your friends see you? As a good student?

7. How do you think your friends see you? As a troublemaker?

8. My teachers think that I am a slow learner.

9. I do not mind stealing from someone, that's just the kind of person I am.

10. I am not the kind of person you would expect to get in trouble with the law.

ALPHA = .4993   STANDARDIZED ITEM ALPHA = .5193
ALPHA = .49
ALPHA = .5499

G12 - PRACTICAL KNOWLEDGE

This scale is viewed as a simple measure of personal competence in coping with life. This seven item measure reached a

reasonable reliability of .75 in Gottfredson's report. In the present research a similar Alpha of .72 is produced.

1. You know how to apply for an office job in a big company.

2. You know how to apply for a job in a factory.
3. You know how to choose the right school program to help you in your career.

4. You know how to apply to a college for admission.

5. You know how to find out about different kinds of jobs.

6. You know how to arrange a bus or train trip to go out of town.

7. You know how to balance a checkbook.

   ALPHA = .7247   STANDARDIZED ITEM ALPHA = .7274
   ALPHA = .71
   ALPHA = .7060

G13 - REBELLIOUS AUTONOMY
Rebellious autonomy is seen as a set of socially shared expectations that may emerge within delinquent subcultures and lower class macho systems. This scale may violate certain compliance norms of the middle class culture, thus there is an emphasis on a high level of autonomy, independence and non-conformity with norms. In conducting item analysis of a larger set of items, Gottfredson utilized three such items that form a short scale of rebellious autonomy. The Alpha of the scale was only .47. In the present research a slightly higher Alpha of .54 is reached. Gottfredson et al. report that the scale does correlate as expected with delinquent behavior and the non acceptance of conventional beliefs (Gottfredson et al., 1982).

1. I don't like anybody telling me what to do.

2. Whether or not I spend time on homework is my own business.

3. I should not have to explain to anyone how I spend my money.

   ALPHA = .5363   STANDARDIZED ITEM ALPHA = .5369
   ALPHA = .57

ALPHA = .5445

G14 - SCHOOL EFFORT

Gottfredson et al., (1982) note that grades are not determined solely by ability or social class. The amount of effort expended has been demonstrated to be greater if the valued rewards are seen as attainable (Porter and Lawler, 1968). The argument is that effort is a mediating variable between abilities and other characteristics and the reward. The original Alpha of .59 is similar to the reliability obtained in the present study, i.e. .65. This scale has been found to correlate with grade levels, attachment to school, and can therefore be interpreted as a good indicator of the effort spent by a youth towards school success.

1. Compared to other students, how hard to you work (study) in school?

2. I turn my homework in on time.

3. My schoolwork is messy.

4. I don't bother with homework or class assignments.

5. If a teacher gives a lot of homework, I try to finish all of it.

ALPHA = .6484   STANDARDIZED ITEM ALPHA = .6552
ALPHA = .64
ALPHA = .6235

G15 - SCHOOL NON-ATTENDANCE

Numerous researches have noted that reliable attendance data is often not available from cumulative school records, thus a self-report is included in this test battery. Gottfredson, et al. (1983) have indicated that school records were erratic, incomplete, error-ridden and difficult to obtain. This short scale contains two items asking how often the students cut school all day, and one about class skipping. Gottfredson's reliability was a .61. In the present study we obtain an Alpha of .63. Thus the short scale is sufficiently reliable.

1. In the last four weeks, how many days did you cut school all day?

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2. In the last four weeks, how often did you cut one or more
      of your classes?

ALPHA =   .6291   STANDARDIZED ITEM ALPHA =   .7097
ALPHA =   .56
ALPHA =   .5884

G16 - SELF-REPORTED SUBSTANCE USE

Drug use has often been correlated with both delinquent
behavior and dropout. The present scale is a six item scale focusing on
drug use in the last year. This short scale has a highly reliable Alpha of
.73. This compares favorably to that achieved by Gottfredson (1985) of
.78. This set of items is similar to the drug index of Hindelang et al.
(1981).

1. In the last year have you smoked cigarettes?

2. In the last year have you drank beer, wine, or "hard
      liquor"?

3. In the last year have you smoked marijuana (grass, pot)?

4. In the last year have you gone to school drunk or high on
      some other drugs?

5. In the last year have you taken some other drugs?

6. In the last year have you sniffed glue paint or some other
      spray?

ALPHA =   .7313   STANDARDIZED ITEM ALPHA =   .7163
ALPHA =   .71
ALPHA =   .7057

G17 - SCHOOL PUNISHMENT

This short four item school assesses sanctions imposed by the
school on individual youth. The reliability is only .51. This is comparable
to that reported by Gottfredson in the original study (.54). A general
finding with this scale is that males experience more punishment than
females. Gottfredson reports that the scale correlates at .30 with the
self-report delinquency measure; -.28 with positive self-concept. As
expected it has a negative correlation with normative beliefs (-.30), with
school effort (-.22) and it has a positive relationship with negative

peer influences (.24). This indicates that those youth who are embedded in a delinquent peer group report higher levels of school punishment.

1. Did you have to stay after school as a punishment?

2. Did you get an extra assignment as a punishment?

3. Was your grade on a project lowered as a punishment?

4. Were you sent out of class for punishment?

ALPHA = .5123   STANDARDIZED ITEM ALPHA = .5117
ALPHA = .48
ALPHA = .6915

G18 - SCHOOL REWARDS

This scale focuses on the more rewarding experiences reported by students, e.g., being complemented for their work, receiving a prize, and so forth. The reliability is not high. Gottfredson reports an Alpha of .54, while in the present study the Alpha is only .42. This scale might be expected to correlate positively with various positive aspects of schooling e.g., belief in normative values, aspirations, and so forth.

1. Teachers say nice things about my class work.

2. In the last month, did you get to do something special as a reward?

3. In the last month, did you win an award or prize because of your work in school?

4. In the last month, did you help win an award or a prize for your group or class because of your work in school?

ALPHA = .4232   STANDARDIZED ITEM ALPHA = .4524
ALPHA = .57

G19 - VICTIMIZATION AT SCHOOL

This scale examines the degree to which a youth is victimized in school. It can provide a useful measure of the amount of crime and delinquency in the school and community environment. The structuring of the present scale emphasizes the school environment. Gottfredson (1982) indicates that the scale can be used to characterize a particular school.

He also indicates that the scales' characteristics are of interest at the individual level. In the latter case, it represents the percieved environments of different kind of youth in the same school. At this level the scale indicates that boys are victimized more than girls. As expected, victimization correlates with delinquency (.24). This indicates a mild tendency of the persons who are victims to also engage more frequently in delinquent behavior themselves. Following from this the other pattern of correlations reported by Gottfredson indicate that the scale correlates with attachment to school (-.27) and self-esteem(-.28). It also correlates with punishment (.35). Thus, those students who are more victimized are also those students who receive more punishment within the school.

1. Did anyone steal something worth less than $1 from your desk, locker, or other place at school?

2. Did anyone steal something worth $1 or more from your desk, locker or other place at school?

3. Did anyone physically attack or hurt you?

4. Did anyone force you to hand over money or things worth $1 or more directly from you by force, weapons or threat?

5. Did anyone threaten you with a knife or gun?

6. During the last semester and also this semester in school, have you ever had to fight to protect yourself?

ALPHA = .5446   STANDARDIZED ITEM ALPHA =   .5770
ALPHA = .55
ALPHA = .6043

G20 - INVALIDITY

This scale will be helpful in identifying any students who do not answer their questions honestly and reliably. The scale will detect nonsense responses and unusual responses.

1. I have never dislike anyone.

2. It is easy to get along with nasty people.

3. I sometimes get angry.

4. I like to have fun.

5. I read several whole books every day.

    ALPHA = .1534   STANDARDIZED ITEM ALPHA =   .2240
    ALPHA = .14

G21 - COMMUNITY CRIME

This small two item scale does not reach a satisfactory alpha (.33). The scale had to be modified from the original three item scale by dropping one particular question, and thus is not comparable with Gottfredson's original scale.

1. Are there any gangs in the neighborhood where you live?

2. Do gang members try to get you to join their gangs?

    ALPHA = .3254   STANDARDIZED ITEM ALPHA =   .3407
    ALPHA = .32
    ALPHA = .1633

G22 - GANGS IN SCHOOL
        This short two item scale reaches a workable reliability, Alpha = .53. Again, it provides a general measure of the environment of each particular school, in an aggregate sense, and also a measure of the school climate at the individual level. Our expectation is that higher scores on such scales would be correlated with higher tendencies towards delinquency and dropout.

1. Are there gang members at your school?

2. Do gangs cause a lot of trouble in your school?

    ALPHA = .5347   STANDARDIZED ITEM ALPHA =   .5557
    ALPHA = .31
    ALPHA = .5276

G23 - SAFETY IN SCHOOL
        This is an abbreviated version of the original Gottfredson Scale. A number of items dealing with school violence and threats to safety were dropped from the present study. The present scale utilizes six items only. This scale reaches a satisfactory reliability level, Alpha = .63.

1. During the last semester and also this semester in school, have you ever had to fight to protect yourself?

2. During the last semester and also this semester in school, have you ever seen a teacher threatened by a student?

3. During the last semester and also this semester in school, have you ever seen a teacher hit or attacked by a student?

4. How often do you feel safe while in your school building?

5. How often are you afraid that someone will hurt your or bother you at school?

6. How often are you afraid that someone will hurt or bother you on the way to and from school?

ALPHA = .6284   STANDARDIZED ITEM ALPHA = .6366

G24 - INDIVIDUALIZED INSTRUCTION

Individualized instruction refers to the development of some kind of individual approach to curriculum, rate of progress, and style of learning. The present scale of two items does not reach a satisfactory level reliability, Alpha = .37.

1. I have a learning plan that was made just for me.

2. Students are able to proceed at their own rate in most courses.

ALPHA = .3670   STANDARDIZED ITEM ALPHA =   .3671

G25 - DISRESPECT FOR STUDENTS

The three items in this scale reach a satisfactory level of reliability, Alp a = .57. This scale may be theoretically relevant. Emberg (1977) connects delinquency to disrespect and other ways in which students are treated poorly within the school. When students are treate in degrading ways which undermines their dignity, then delinquency and perhaps dropout are expected consequences.

1. Students are treated like children here.

2. Teachers treat students with respect.

3. Teachers do things that make students feel "put down".

ALPHA = .5745   STANDARDIZED ITEM ALPHA = .5752

ALPHA = .4945

G26 - STUDENT/TEACHER INTERACTION

This two item scale assesses the relationship between student and teacher outside of the classroom. The basic argument is whether the student receives some support and encouragement outside of the classroom setting. Such supports would be expected to correlate with higher levels of student commitment and satisfaction to school, thus this scale is expected to be negatively related to withdrawal and dropout. The present two item scale achieves and Alpha of only .49. This is considerably less than the .60 reported in the Gottfredson (1982) report.

1. I talk to some of my teachers about things other than schoolwork.

2. Teachers help me with schoolwork outside of class.

ALPHA = .4938   STANDARDIZED ITEM ALPHA = .4943
ALPHA = .56
ALPHA = .5136

G27 - PLANNING AND ACTION (RESPONSIVENESS OF MY SCHOOL)

This assesses the youths perception of the degree to which the schools are experimental and adopt positive problem solving. One item had to be dropped from the present study, thus, the scale is not comparable to the original Gottfredson three item scale. However, an acceptable Alpha of .52 is obtained. As expected this is considerably weaker than Gottfredson's originalreliability of .65.

1. It is hard to change the way things are done in this school.

2. This school hardly ever tries anything new.

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ALPHA = .5246   STANDARDIZED ITEM ALPHA =   .5247
ALPHA = .54
ALPHA = .5313

G28 - FAIRNESS OF RULES

Perception of fairness is a critical aspect of the high school that has been linked to withdrawal and dropout (Fine, 1986). The present three item scale attempts to assess the students perception of the fairness of their school. The present Alpha of .58 is roughly comparable to that achieved by Gottfredson et al. of .62.

1. The school rules are fair.

2. The punishment for breaking school rules is the same no matter who you are.

3. The principal is fair.

ALPHA = .5796   STANDARDIZED ITEM ALPHA =:   .5866
ALPHA = .51
ALPHA = .5624

G29 - CLARITY OF RULES

This short scale attempts to assess the clarity of school rules. Two items were dropped from the Gottfredson scale.

1.1.Everyone knows what the school rules are.

2. The principal runs the school with a firm hand.

ALPHA = .2978   STANDARDIZED ITEM ALPHA =   .2986
ALPHA = .33
ALPHA = .2660

G30 - STUDENT INFLUENCE

This scale assesses the level of influence that students have in their schools. The present item is a five item scale. One item from the original Gottfredson scale has been dropped. The overall reliability of the present five item scale reaches .50. This is somewhat less than the Alpha reported by Gottfredson of .62.

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1. Students have little to say in how this school is run.

2. Students can get an unfair school rule changed.

3. Teachers sometimes change their lesson plans because of student suggestions.

4. Students are seldom asked to help solve a problem the school is having.

   ALPHA = .4066   STANDARDIZED ITEM ALPHA =   .4142
   ALPHA = .57
   ALPHA = .5301

G31 - GROUPING

This scale attempted to assess whether the students perceived a strong segregation or grouping of students in their school. The three item scale focused on racial segregation, separation of special or slow learners and the separation of troublemakers. The Gottfredson reliability was .55. In the present research this grouping scale did not reach an acceptable level of reliability. Thus, it will be dropped from further consideration and testing.

RESPONDENT ID _____ .

GRADE ___ _____

INTERVIEWER'S NAME _____

SCHOOL INTERVIEW SCHEDULE
COLORADO SCHOOLS STUDY 1988

IDEAS
NEDERLAND, COLORADO
443-8789

WHAT ABOUT YOU?

First, we want to ask some questions about you.

1. **Are you:** (CIRCLE ONE NUMBER)

   1 Female
   2 Male

2. **How old were you on your last birthday?** (CIRCLE ONE NUMBER)

   1 13 years or younger
   2 14 years
   3 15 years
   4 16 years
   5 17 years
   6 18 years or older

3. **What grade are you in?** (CIRCLE ONE NUMBER)

   1 8th
   2 9th (Freshman)
   3 10th (Sophomore)
   4 11th (Junior)
   5 12th (Senior)
   6 Not in school
   7 There are no grade levels in my school (or program)

4. **How do you describe yourself?** (CIRCLE ONE NUMBER)

   1 American Indian or Alaskan Native
   2 Asian-American or Pacific Islander (Chinese, Japanese, Hawaiian, Laotian, etc.)
   3 Hispanic (Mexican, Puerto Rican, Cuban, or other Latin-American)
   4 Black (or Afro-American)
   5 Anglo (White, Caucasian)
   6 Other (Please write in here): _____

5. **How long have you lived in the house or apartment where you live now?**
   (CIRCLE ONE NUMBER)

   1 One year or less
   2 More than one year

6. **How many times has your family moved (relocated to a different neighborhood) in the last five years?** (PLEASE CIRCLE YOUR RESPONSE)

None	One	Two	Three or More
0	1	2	3

1

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7. Which of the following people live at home with you most of the time?
(CIRCLE 2 for Yes OR 1 for No FOR EACH LINE)

Yes	No	
2	1	Father
2	1	Mother
2	1	Stepfather
2	1	Stepmother
2	1	Uncle
2	1	Aunt
2	1	Grandfather
2	1	Grandmother
2	1	Any other adult male
2	1	Any other adult female
2	1	Brothers
2	1	Sisters

8. At the end of the last school term, were your course grades:
(CIRCLE ONE NUMBER)

1   Mostly A's
2   Mostly B's
3   Mostly C's
4   Mostly D's
5   Mostly F's

9. How satisfied are you with your academic progress (your learning progress) in school? (CIRCLE ONE NUMBER)

1   Very satisfied
2   Somewhat satisfied
3   Somewhat dissatisfied
4   Very dissatisfied

10. What was your grade in English in your last (most recent) gradings?
(CIRCLE ONE LETTER)

1   A
2   B
3   C
4   D
5   F

11. Compared to other students, how hard do you work (study) in school?
(CIRCLE ONE NUMBER)

1   Much harder
2   Harder
3   Less hard
4   Much less hard

2

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12. How would you rate yourself in reading ability compared to other students?
(CIRCLE ONE NUMBER)

1 Top 10%
2 Above average
3 Average
4 Below average

13. How do you think most of your classroom teachers see you?
(CIRCLE ONE NUMBER FOR EACH LINE)

	Definitely Yes	Somewhat	Not at All
Most of your Teachers See You			
As a troublemaker	3	2	1
As a good student	3	2	1
As needing help with school work	3	2	1
As very popular	3	2	1
As being independent	3	2	1

14. Do you care about how your teachers see you?

Definitely Yes	Somewhat	Not at All
3	2	1

15. What type of classes are you taking? (CIRCLE ONE NUMBER)

1 College Preparatory
2 Vocational-technical
3 General
4 Other
5 Don't know

16. How well do you like to read?

1 Not at all
2 Not very much
3 It's okay
4 Pretty good

17. What kind of learner are you in most things?

1 Below average
2 Average
3 Above average
4 Very good
5 One of the best

18. Have you ever been retained a grade (held back in school)?   (CIRCLE ONE NUMBER)

    1   Yes
    2   No

19. In the last four weeks, how many days did you cut school all day?
    (CIRCLE ONE NUMBER)

    1   None
    2   1-2 days
    3   3-5 days
    4   6-10 days
    5   More than 10 days

20. In the last four weeks, how often did you cut one or more of your classes?
    (CIRCLE ONE NUMBER)

    1   Almost every day
    2   Several times a week
    3   About once a week
    4   Once in a while
    5   Almost never
    6   Never

21. What kind of a learner do your teachers think you are?

    1   Below average
    2   Average
    3   Above average
    4   Very good
    5   One of the best

22. The following questions are about gangs and crime in the neighborhood where you
    live, and in your school.   (CIRCLE 1 FOR YES OR 0 FOR NO FOR EACH QUESTION)

    Yes   No
    1   0   Are there any gangs in the neighborhood where you live?

    1   0   Are there gang members at your school?

    1   0   Do gang members try to get you to join their gangs?

    1   0   Do gangs cause a lot of trouble in your school?

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┌─────────────────────────────────┐
│  WHAT ABOUT YOUR GOALS IN SCHOOL │
│         AND FOR A JOB?           │
└─────────────────────────────────┘
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23. **As things stand now, how far in school do you want to go?** (CIRCLE ONE NUMBER)

   1   Quit as soon as I can
   2   Less than high school graduation
   3   High school graduation
   4   Vocational, trade, or business school after completing high school
   5   Less than two years of college
   6   Finish a two-year college degree
   7   Finish a four- or five-year college degree or more

24. **Realistically, how far in school do you expect to go?**

   1   Quit as soon as I can
   2   Less than high school graduation
   3   High school graduation
   4   Vocational, trade, or business school after completing high school
   5   Less than two years of college
   6   Finish a two-year college degree
   7   Finish a four- or five-year college degree or more

25. **Have you any career goals?** (CIRCLE ONE NUMBER)

   1   Yes
   2   No

   If yes, what job do you want to have when you are 30 years old?
   (WRITE THE NAME OF THE JOB ON THE LINE BELOW)

   _____

26. **What do you think are your chances of getting ahead and being successful in your career goals?** (CIRCLE ONE NUMBER)

   1   Excellent
   2   Fair
   3   Somewhat limited
   4   Not very good

27. **Whether you do well or poorly in school depends...**
   (CIRCLE ONE NUMBER)

   1   Completely on luck
   2   Mostly luck, partly hard work
   3   Half luck and half hard work
   4   Partly on luck, mostly on hard work
   5   Completely on hard work

28. How important is it to you personally to get good grades?

Very Important	Important	Not Very Important	Completely Unimportant
4	3	2	1

29. Do you believe that what you are learning in school will help you achieve your career goals? (CIRCLE ONE NUMBER)

4 Definitely yes
3 Somewhat
2 Probably not
1 Definitely not

30. How important are the following to you? (CIRCLE ONE NUMBER)

	Very Important	Quite Important	Somewhat Important	Not Important
A. Graduating from high school?	4	3	2	1
B. Going to vocational or trade school?	4	3	2	1
C. Going to college?	4	3	2	1
D. Graduating from college?	4	3	2	1

WHAT ABOUT YOUR PARENTS AND FAMILY?

NOW WE'D LIKE TO ASK YOU SOME QUESTIONS ABOUT YOUR PARENTS.

FOR THOSE OF YOU WHO LIVE WITH STEPPARENTS, OR WITH ONLY ONE PARENT, PLEASE TRY TO ANSWER THESE QUESTIONS FOR THE "PARENT FIGURE" WITH WHOM YOU HAVE LIVED THE LONGEST AMOUNT OF TIME.

31. Is your father (guardian) employed right now? (CIRCLE ONE NUMBER)

1 Yes -- full time
2 Yes -- part time
3 No
4 Don't know

32. If you fail at something, how do your parents (guardians) usually respond? (CIRCLE ALL THAT APPLY)

1 Encourage me to try harder
2 Encourage me to try something else
3 Punish me
4 Do nothing

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33. Are the following mostly true or mostly false about you and your family?
    (CIRCLE 1 FOR TRUE OR 0 FOR FALSE FOR EACH LINE)

	True	False
My parent(s) almost always know where I am and what I am doing.	1	0
My parent(s) keep close track of how well I am doing in school.	1	0
I do lots of things with my parent(s).	1	0
My parents (guardians) like to spend time with me.	1	0
My father is pretty satisfied with me.	1	0
My mother is pretty satisfied with me.	1	0
Have you defied your parent's authority (to their face)?	1	0
My parent (or guardians) would be disappointed if I did not attend school regularly.	1	0
My father (or guardian) helps me with my homework.	1	0
My parents (guardians) tell me who I can and can't have as friends.	1	0
I have lots of respect for my parents or guardians.	1	0
My mother (or guardian) helps me with my homework.	1	0
My parents would be disappointed if I dropped out of high school.	1	0
My parents appreciate it when I try hard, even if I don't succeed all the time.	1	0
My parents insist that I get permission before going out to movies, or other entertainment.	1	0
My parents encourage me to graduate from high school.	1	0
It is upsetting to my parents if I hang around with kids who get into trouble.	1	0
My parents believe that a high school diploma is important for my future.	1	0
It would be O.K. with my parents for me to drop out of high school and get a job.	1	0

34. Please answer the following questions about your relationship with your parents?
    (CIRCLE ONE NUMBER FOR EACH STATEMENT)

	Always	Some-times	Rarely	Never
Do you avoid conflict with your parents?	4	3	2	1
Do you "talk back" to your parents?	4	3	2	1
Do you argue with your parents?	4	3	2	1

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35. Do your parent(s) want you to do MORE or LESS of the following things?
    (CIRCLE ONE NUMBER FOR EACH STATEMENT.)

	Much less	About the same as I do now	Much more
My parents want me to:			
Take things seriously	1	2	3
Listen to my teacher	1	2	3
Try to be successful	1	2	3
Think about schoolwork	1	2	3

36. Do your parents want you to go to college someday?   (CIRCLE ONE NUMBER)

Yes Very much	Yes	Not Sure	No
4	3	2	1

37. These questions are about HOW WRONG DO YOUR PARENTS think certain behaviors are:
    (CIRCLE ONE NUMBER FOR EACH KIND OF BEHAVIOR)

	Very Wrong	Wrong	A Little Bit Wrong	Not Wrong At all
How wrong are the following behaviors to my PARENT?				
Cutting classes	4	3	2	1
Dropping out of school	4	3	2	1
Not doing my homework	4	3	2	1
Goofing off in school	4	3	2	1

38. How do you think your parents see you?   (CIRCLE ONE NUMBER FOR EACH STATEMENT)

	Definitely Yes	Somewhat	Not at All
Mother (or female Guardian)			
As a troublemaker	3	2	1
As a good student	3	2	1
As needing help with school	3	2	1
Father (or male Guardian)			
As a troublemaker	3	2	1
As a good student	3	2	1
As needing help with school	3	2	1

39. How much do you want to be like the kind of person your parents (or guardians) are?
(CIRCLE ONE NUMBER IN EACH COLUMN)

	Mother (or Guardian)	Father (or Guardian)
Very much like him/her	4	4
A little like him/her	3	3
Not very much like him/her	2	2
Not at all like him/her	1	1

40. How close do you feel to your parents (or guardians)?
(CIRCLE ONE NUMBER IN EACH COLUMN)

	Mother (or Guardian)	Father (or Guardian)
Extremely close	4	4
Quite close	3	3
Fairly close	2	2
Not very close	1	1

41. Do you think the following statements are <u>mostly true</u> or <u>mostly false</u>?
(CIRCLE 1 FOR TRUE OR 0 FOR FALSE FOR EACH STATEMENT)

	True	False
I would not care if my parents or guardians were a little disappointed in me.	1	0
I would be punished at home if my parents or guardians knew I broke a school rule.	1	0
My teachers think that I am a slow learner.	1	0
As far as my parents are concerned, I can come and go as I please.	1	0
I am going to need my parents' or guardians' help for some time to come.	1	0

42. <u>How often</u> do the following things happen in your relations with your parents? For each question please indicate <u>how often</u> they do it.

	In most cases	Often	Some-times	Never
My parents insist on knowing exactly how I spend my money.	4	3	2	1
My parents tell me exactly when I should come home.	4	3	2	1
My parents insist I make a special effort in everything I do.	4	3	2	1
My parents demand that I do better than other students.	4	3	2	1
My parents insist that I get particularly high marks in school.	4	3	2	1

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HOW DO YOU SPEND YOUR TIME?

Now we want to ask some questions about the way you
spend your time in and out of school.

43. **Which of the following things have you spent time on this school term?**
    (CIRCLE 2 FOR YES OR 1 FOR NO FOR EACH LINE)

Yes	No	
2	1	Intramural athletic teams
2	1	Other athletic teams -- in or out of school
2	1	Cheerleaders, pep club, majorettes
2	1	Debating or drama
2	1	Band or orchestra
2	1	Chorus or dance
2	1	School clubs
2	1	School newspaper, magazine, yearbook, annual
2	1	Student council, student government, political club
2	1	Youth organizations in the community, such as Scouts, Y, etc.
2	1	Church activities, including youth groups
2	1	Helping out at school as a library assistant, office helper, etc.

44. **Do you have a regular part-time or full-time job for which you get paid?**
    (CIRCLE ONE NUMBER)

    1   Yes -- regular full-time
    2   Yes -- regular part-time
    3   No

    If YES, how many hours per week do you work at a job? _____

45. **How many hours per week do you work at family responsibilities? (e.g. cleaning,**
    cooking, babysitting, or other "chores" to help your family) _____

46. **How much time do you usually spend on the following activities?   (Please write down**
    the number of hours for each):

    Usual number of hours per day watching T.V.____hrs.

    Usual number of hours per day reading books____hrs.

    Usual number of hours per day reading comics____hrs.

47. **How much time do you usually spend after school hanging out with a group of**
    friends?   (CIRCLE ONE NUMBER)

    1   None
    2   Less than 1 hour
    3   1-2 hours
    4   More than 2 hours

48. **How much time, on the average, do you spend doing homework outside school?**
   (CIRCLE ONE NUMBER)

   1   None, or almost none
   2   Less than 1 hour a day
   3   One to two hours a day
   4   More than 2 hours a day

49. **How true about you are the following statements about your school work?**
   (CIRCLE ONE NUMBER FOR EACH STATEMENT)

	Nearly Always True	Somewhat True	Nearly Always False
If a teacher gives a lot of homework, I try to finish all of it.	3	2	1
I turn my homework in on time.	3	2	1
My school work is messy.	3	2	1
I don't bother with homework or class assignments.	3	2	1

NOW WHAT ABOUT YOUR FRIENDS?

These next questions are about your friends. Please answer the following questions about your friends.

50. **How many friends do you have?** (PLEASE CIRCLE)

None	One	Two	Three	Four or More
0	1	2	3	4

51. **How close do you feel to your friends?**

Very Close	Close	Not Very Close	Not Close At All
4	3	2	1

52. **How much time do you want to spend with your friends?**

   1   All or most of my time.
   2   Some of my time.
   3   Just a little of my time.

53. **How much time do you usually spend with your friends on weekends?**

   1   15 or more hours.
   2   5 - 10 hours.
   3   Less than 5 hours.

54. Do you have a best friend or a friend that you feel especially close to?

     YES   NO

If "NO" please _kip to QUESTION 61.

55. Please think of your best friend or closest friend in this school. As far as you know, are the following statements true or false about him or her?
(CIRCLE 1 FOR TRUE OR 0 FOR FALSE FOR EACH STATEMENT)

True	False	
1	0	Is interested in school
1	0	Attends classes regularly
1	0	Plans to go to college
1	0	Belongs to a gang
1	0	Gets in trouble with the police

56. If you have a best friend, is he or she still in school?

1 Yes
2 No, quit school before high school graduation
3 No, already graduated from high school

57. How much do you want to be like the kind of person your best friend is?
(CIRCLE ONE NUMBER)

1 Very much like my friend
2 Somewhat like my friend
3 A little like my friend
4 Not very much like my friend
5 Not at all like my friend

58. Who has more influence over you: Your friends, or your parents (guardians)?
(CIRCLE ONE NUMBER)

1 My friends
2 My parents (or guardians)

59. If your friends wanted to go out and your parents wanted you to stay home for an evening, what do you think you would do?

1 Go out
2 Stay home

60. Are the following statements mostly true or mostly false about your friends?
(CIRCLE 1 FOR TRUE OR 0 FOR FALSE FOR EACH STATEMENT)

True	False	
1	0	Most of my friends think getting good grades is important.
1	0	Most of my friends think school is a pain.

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True	False	
1	0	My friends often try to get me to do things the teacher doesn't like.
1	0	Most of my friends smoke cigarettes.
1	0	My friends discourage me from smoking cigarettes.
1	0	I hang out a lot with kids who have already left school.

61. **Have any of your friends quit school?**

    1   None
    2   One
    3   Two or three
    4   Four or more

62. **How often do you feel left out of things your friends are doing?**

Never	Only Occasionally	Sometimes	Often	Always
1	2	3	4	5

63. **What about your brothers or sisters? (If you have no brothers or sisters, please skip this question.) (CIRCLE 2 FOR YES OR 1 FOR NO FOR EACH QUESTION)**

	YES	NO
Have any of your brothers or sisters graduated from high school?	2	1
Have any of your brothers or sisters dropped out before graduation?	2	1
Are any of your brother or sisters still in school?	2	1

64. **How many of your friends have been picked up by or have been in trouble with the police? (questioned, arrested, etc.)**

    1   Don't know
    2   None
    3   One
    4   Some
    5   Most
    6   All

65. **How do you think your friends see you?   (CIRCLE ONE NUMBER FOR EACH STATEMENT)**

	Definitely Yes	Somewhat	Not at All
As a troublemaker	3	2	1
As a good student	3	2	1
As being independent	3	2	1
As very popular	3	2	1

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66. **What do you think about the following statements? Are they mostly true or mostly false?** (CIRCLE 1 FOR TRUE OR 0 FOR FALSE FOR EACH STATEMENT)

	True	False
There are students at this school who will really help me if I have a problem.	1	0
Friends at school often come to me when they have problems or need advice.	1	0
I often feel lonely.	1	0
I don't like anybody telling me what to do.	1	0
I do lots of things with the same group of friends.	1	0
I know someone at school I could go to if I were feeling down.	1	0

WHAT ABOUT YOUR SCHOOL?

Now we want to ask you some questions about your school.

67. **How often is your school like this one?** (CIRCLE ONE NUMBER FOR EACH STATEMENT)

	Not Usually	Some-times	Almost Always
Students are treated like children here.	1	2	3
Everyone knows what the school rules are.	1	2	3
The school rules are fair.	1	2	3
The punishment for breaking school rules is the same no matter who you are.	1	2	3
Teachers treat students with respect.	1	2	3
Teachers do things that make students feel "put down".	1	2	3
The principal is fair.	1	2	3
The principal runs the school with a firm hand.	1	2	3
Most of my teachers run their classrooms with a firm hand.	1	2	3
In most of my classes, if a rule is broken, students know what kind of punishment will follow.	1	2	3
When a student misbehaves in class his or her grade is lowered.	1	2	3

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68. **Do you mostly agree or disagree with the following statements about your school?**
(CIRCLE A OR D FOR EACH STATEMENT)

	Agree	Disagree
In this school I am treated equally with most of the other kids here.	A	D
Students have little say in how this school is run.	A	D
Teachers sometimes change their lesson plans because of student suggestions.	A	D
This school hardly ever tries anything new.	A	D
I have lots of respect for my teachers.	A	D
I feel like I belong in this school.	A	D
This school makes me like to learn.	A	D
Students of different races get on very well in this school.	A	D
I often feel nervous at school.	A	D
When I'm late for class I feel very anxious.	A	D
I find it hard to talk in front of class.	A	D
It is hard to change the way things are done in this school.	A	D
The teachers treat all the students here equally.	A	D
In this school, teachers favor certain students.	A	D

69. **How important is each of the following to your teachers?**
(CIRCLE ONE NUMBER FOR EACH STATEMENT)

	Very Important	Fairly Important	Not Important
That you do well in school.	3	2	1
That you study hard.	3	2	1
That you stay in school.	3	2	1

70. **How much do you agree with the following statements?**
(CIRCLE ONE NUMBER FOR EACH STATEMENT)

	Very Much	Pretty Much	A Little	Not at All
In school I learn about things I want to know.	4	3	2	1
School gives me a chance to learn many interesting things.	4	3	2	1

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	Very Much	Pretty Much	A Little	Not at All
	4	3	2	1
When I'm in school I feel I'm doing something that is really worthwhile.	4	3	2	1
In school I am improving my ability to to think and solve problems.	4	3	2	1
I am bored when I am away from school.	4	3	2	1
In school I am learning the things I will need to know to be a good citizen.	4	3	2	1
I can learn more from a good job than I can at school.	4	3	2	1
I am learning things in school that will help me get a good job in the future.	4	3	2	1
I am bored by school.	4	3	2	1
The students are unfriendly to me.	4	3	2	1

71. **Are the following statements mostly true or mostly false about your school?**
(CIRCLE 1 FOR TRUE OR 0 FOR FALSE FOR EACH STATEMENT)

	True	False
	1	0
The teachers let the students know what they expect of them.	1	0
The principal lets the students know what he or she expects of them.	1	0
Students have helped to make the school rules.	1	0
Teachers often call on me in class when I raise my hand.	1	0
Teachers don't ask me to work on special classroom projects.	1	0
I'm not asked to take part in school activities as much as I want to be.	1	0

72. **How often do the following things happen to you in school?**
(CIRCLE ONE NUMBER FOR EACH STATEMENT)

	Hardly Ever	Sometimes	Often
	1	2	3
Teachers say nice things about my classwork.	1	2	3
I talk to some of my teachers about things other than schoolwork.	1	2	3
Teachers help me with schoolwork outside of class.	1	2	3

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	Hardly Ever	Sometimes	Often
I get a chance to do the things that I do well.	1	2	3
I can work at my own speed in class.	1	2	3
I have skipped school without a legitimate excuse.	1	2	3
I feel that teachers ignore me in class.	1	2	3
I often feel left out of classroom discussion by teachers.	1	2	3

73. **In the last month have any of these things happened to you in school?**
(CIRCLE 2 FOR YES OR 1 FOR NO FOR EACH STATEMENT)

	Yes	No
Did you get to do something special as a reward?	2	1
Were you sent out of class for punishment?	2	1
Did you have to stay after school as a punishment?	2	1
Did you get an extra assignment as a punishment?	2	1
Was your grade on a project lowered as a punishment?	2	1

74. **Next, we are asking some questions about what you like and dislike about your school. How do you feel about the following?** (CIRCLE ONE NUMBER FOR EACH LINE)

	Like	Don't Like
This school	1	2
The principal	1	2
The classes you are taking	1	2
The teachers	1	2
The counselors	1	2

75. **Sometimes bad things happen to a person. Have any of the following things happened to you during the past year? Think of your last 12 months at school.**
(CIRCLE 2 FOR YES OR 1 FOR NO FOR EACH LINE)

	Yes	No
Did anyone steal something worth less than $1 from your desk, locker, or other place at school?	2	1
Did anyone steal something worth $1 or more from your desk, locker or other place at school?	2	1
Did anyone physically attack or hurt you?	2	1
Did anyone force you to hand over money or things worth $1 or more directly from you by force, weapons or threats?	2	1
Did anyone threaten you with a knife or gun?	2	1

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76. **Here are some questions about your school. How strongly do you _agree_ or _disagree_ with each of these statements? (CIRCLE ONE RESPONSE FOR EACH STATEMENT)**

	Strongly Agree	Undecided	Strongly Disagree
Students at my school can choose harder or easier courses, as best fits their needs.	3	2	1
Students in alternative courses in this school feel put down.	3	2	1
In this school, the color of your skin doesn't mean much, we are all friends.	3	2	1
When a student has problems, the school works out a plan to help that student.	3	2	1
The school program is appropriate for ethnic minority groups.	3	2	1
Students are able to proceed at their own rate in most courses.	3	2	1
Some students in this school are favored more than others.	3	2	1
Students of different races and backgrounds get along well with each other.	3	2	1

77. **The following questions ask about how often you feel safe in school and also on the way to school. (CIRCLE ONE NUMBER FOR EACH QUESTION)**

	Almost Never	Sometimes	Almost Always
How often do you feel safe while in your school building?	1	2	3
How often are you afraid that someone will hurt you or bother you at school?	1	2	3
How often are you afraid that someone will hurt or bother you _on the way_ to and from school?	1	2	3

78. **Please answer the following questions as honestly as you can. (CIRCLE 2 for YES, 1 for UNDECIDED, or 0 for NO)**

	Yes	Undecided	No
Is most of the school day a waste of time?	2	1	0
Do you think that most people who drop out of school before graduation will be sorry someday?	2	1	0
Is what you learn in school useful outside of school?	2	1	0

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	Yes	Undecided	No
Do you sometimes feel that you'd like to quit school?	2	1	0
Is there one class that you really enjoy going to each day?	2	1	0
Are most of your classes interesting?	2	1	0
Do you enjoy studying?	2	1	0

79. **Please answer the following questions about dropping out of high school. (CIRCLE 1 FOR TRUE OR 0 FOR FALSE)**

	True	False
Dropping out of high school would really hurt my personal chances for future success.	1	0
I don't think that I have much to lose by dropping out of school.	1	0
Dropping out would cause more problems than it would solve.	1	0

80. **Whose fault is it if you do poorly in school?**

1 All the teachers' fault
2 Mostly the teachers' fault
3 About half my fault, half the teachers'
4 Mostly my fault
5 All my fault

81. **Please answer the following questions as honestly as you can. (CIRCLE 2 for YES, 1 for UNDECIDED, or 0 for NO.)**

	Yes	Undecided	No
My parents' opinions are valued by the school.	2	1	0
I can determine what I study.	2	1	0
I can change my school program if it is not right for me.	2	1	0
In school I can make some decisions about what and how I learn.	2	1	0
I have enough opportunities to choose subjects that I like.	2	1	0
My counselor knows me on an individual basis.	2	1	0
I communicate and work effectively with my counselor.	2	1	0
My parents are involved in the school program.	2	1	0
My parents share joint responsibility with the school for my education.	2	1	0
My counselor has not been helpful in helping me solve my problems.	2	1	0

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82. **How many of your teachers do you feel close to: (CIRCLE ONE NUMBER)**

1 All my teachers
2 Most of my teachers
3 About half of my teachers
4 Few of my teachers
5 None of my teachers

83. **How many parent-student-teacher conferences did you participate in last year?**

None	One	Two	Three	Four or More
0	1	2	3	4

84. **This year have your teachers and counselors given you enough guidance in the following? (CIRCLE 2 for YES, 1 for UNDECIDED or 0 for NO)**

	Yes	Undecided	No
Deciding what is important in life?	2	1	0
Deciding what I want to achieve in life?	2	1	0
Learning about jobs and careers?	2	1	0
Learning about getting along with other students?	2	1	0
Planning what courses to take in school?	2	1	0
Solving personal problems?	2	1	0

WHAT DO YOU BELIEVE?

Now we want to ask your opinions about things. Some people think one way about these things, and some people think another way. There are no right or wrong answers. We want to know what you think.

85. **How much do you agree with the following statements?**
   (CIRCLE ONE NUMBER FOR EACH STATEMENT)

	Very Much	Pretty Much	A Little	Not at All
All people should have at least a high school education.	1	2	3	4
An education will help me to be a mature adult.	1	2	3	4
A high school diploma is the only way to get ahead.	1	2	3	4
Once I have decided on a course of action I stick with it.	1	2	3	4
I stop to consider whether or not what I am doing is helping me to achieve my goals.	1	2	3	4

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	Very Much	Pretty Much	A Little	Not at All
It is worthwhile to drop out of school and get a job.	1	2	3	4

86. **Here are some more things people think different ways about. Do you think they are mostly true or mostly false? (CIRCLE 1 FOR TRUE OR 0 FOR FALSE FOR EACH STATEMENT)**

	True	False
All in all, I am pretty much able to take care of myself without help from my parents or guardians.	1	0
If I wanted to, I could make enough money to get along on my own.	1	0
I know how to get along with teachers.	1	0
Sometimes I think I am no good at all.	1	0
If I want to, I can explain things ~().	1	0
I find it easy to talk with all kinds of people.	1	0
My friends regard me as a person with good sense.	1	0
Getting what I want has little or nothing to do with luck.	1	0

87. **Do you think these things are mostly true or mostly false?**

	True	False
Taking things from stores doesn't hurt anyone.	1	0
I feel I do not have much to be proud of.	1	0
Every time I try to get ahead, something or someone else stops me.	1	0
Whether or not I spend time on homework is my own business.	1	0
I should not have to explain to anyone how I spend my money.	1	0
It is O.K. to take advantage of a chump or a sucker.	1	0
These days I get the feeling that I'm just not a part of things.	1	0
I would do almost anything on a dare.	1	0
I go out of my way to meet trouble rather than try to escape it.	1	0
I don't think I'm quite as happy as others seem to be.	1	0
I feel that I have the ability to survive well on my own.	1	0

88. **What do you think about the following statements? Are they mostly true or mostly false? (CIRCLE 1 FOR TRUE OR 0 FOR FALSE FOR EACH STATEMENT)**

	True	False
I am not the kind of person you would expect to get in trouble with the law.	1	0
I feel sad a lot of the time.	1	0
Getting a good job is mostly a matter of being in the right place at the right time.	1	0
I do not mind stealing from someone, that is just the kind of person I am.	1	0
It is all right to get around the law if you can.	1	0
People who leave things around deserve it if their things get taken.	1	0
I feel no one really cares much about what happens to me.	1	0
I have a clear picture of what I am like as a person.	1	0
I worry about lots of little things.	1	0
I don't like anybody telling me what to do.	1	0
No one knows how I really feel about them.	1	0
It is better if students of different races go to different schools.	1	0
I have a steady girlfriend or boyfriend.	1	0

89. **What do you think about the following statements? Are they mostly true or mostly false? (CIRCLE 1 FOR TRUE OR 0 FOR FALSE FOR EACH STATEMENT)**

	True	False
I am the kind of person who will always be able to make it if I try.	1	0
I often feel awkward and out of place.	1	0
I like myself.	1	0
Teachers who are hassled by students usually have it coming.	1	0
I do not have much to lose by causing trouble in school.	1	0
I have usually found that what is going to happen will happen no matter what I do.	1	0
I often feel tense.	1	0

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	True	False
Much of what happens to me is just a matter of chance.	1	0
Luck is more important than hard work.	1	0
Life is mostly a gamble.	1	0
I like to take risks.	1	0
I often take risks without thinking about the consequences.	1	0

90. **How much do you like each of the following?** Think of the way you feel and of how much you like or don't like each of these things.
(CIRCLE ONE NUMBER FOR EACH STATEMENT)

HOW STRONGLY DO YOU LIKE:	Like Very Much	Like	Don't Like Very Much
To be free to make my own plans now about what I'm going to do with my life?	1	2	3
To be free to decide for myself what movies to see or books to read?	1	2	3
To choose my own clothes and personal possessions without having to get advice from others?	1	2	3
To be free to use the money I have in whatever way I choose?	1	2	3
To be free to try new things on my own if they interest me?	1	2	3

91. **How strongly do you agree or disagree with the following statements?**
WE WANT TO KNOW YOUR FEELINGS.

	Strongly Agree	Neither Agree, nor Disagree	Strongly Disagree
I sometimes feel uncertain about who I really am.	3	2	1
I often wonder whether I'm becoming the kind of person I want to be.	3	2	1
Most people don't seem to accept me when I'm just being myself.	3	2	1
Hardly anyone I know is interested in how I really feel inside.	3	2	1
I generally feel that I have a lot in common with the other kids in school.	3	2	1

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	Strongly Agree	Neither Agree, nor Disagree	Strongly Disagree
I often feel alone even when I am with other people.	3	2	1
If I had my choice, I'd like for my life to be very different than it is.	3	2	1
I feel in tune with the people around me.	3	2	1
No one really knows me very well.	3	2	1
I can always find friends when I want to.	3	2	1

FINALLY, WHAT ABOUT YOUR BEHAVIOR?

This last set of questions is about your behavior both in the classroom and outside of school.

92. **These questions are all about <u>YOUR BEHAVIORS AND THE THINGS YOU DO IN SCHOOL</u>.** Read them carefully. (ANSWER BY CIRCLING A NUMBER FOR EACH STATEMENT)

	Almost Always	Often	Seldom	Never
Do you look out of the classroom window?	4	3	2	1
Do you raise your hand if a teacher asks a question?	4	3	2	1
Do you daydream?	4	3	2	1
Do you get into fights or arguments with other students?	4	3	2	1
When the teacher is talking, do you pay attention?	4	3	2	1
Do you ever ask the teacher questions?	4	3	2	1
Can you keep on working for a long time?	4	3	2	1
Do you have all the books and other things you need for lessons?	4	3	2	1
Do you leave work unfinished?	4	3	2	1
Do you work on your own without needing any help?	4	3	2	1
If you can't do the work, do you ask the teacher for help?	4	3	2	1

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	Almost Always	Often	Seldom	Never
Do you answer back if a teacher gets angry with you?	4	3	2	1
Are you disruptive in class?	4	3	2	1
Do you shout out answers before you are asked?	4	3	2	1
Do you argue with your teachers?	4	3	2	1
Have you copied someone else's assignments?	4	3	2	1
Have you cheated on tests?	4	3	2	1
Do you "goof-off" in class so that other students can't work?	4	3	2	1
Do you come late to class?	4	3	2	1
Do you do things that you know will make the teacher angry?	4	3	2	1
Do you come to school late?	4	3	2	1
Do you fall asleep in class?	4	3	2	1
Are you usually "tuned-in" to the teacher's lesson?	4	3	2	1
Does your mind wander in class?	4	3	2	1
Do you have difficulty concentrating on your classwork?	4	3	2	1
Do you forget your homework assignments?	4	3	2	1
Do you make plans to get your school work done?	4	3	2	1
Do you become confused about what you need to do next at school?	4	3	2	1
Do you set schedules for your school assignments?	4	3	2	1

93. During the last semester and also this semester in school, have you ever:
(CIRCLE 2 FOR YES OR 1 FOR NO FOR EACH QUESTION)

	Yes	No
Had to fight to protect yourself?	2	1
Seen a teacher threatened by a student?	2	1
Seen a teacher hit or attacked by a student?	2	1
Seen a student hit or attacked by a teacher?	2	1
Been suspended from this school?	2	1
Been sent to the principal for acting up?	2	1

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94. Do you k w how to do the following things? (CIRCLE ONE NUMBER FOR EACH STATEMENT)

	Yes	Not Sure	No
Apply for an office job in a big company?	1	2	3
Apply for a job in a factory?	1	2	3
Choose the right school program to help you in your career?	1	2	3
Apply to a college for admission?	1	2	3
Find out about different kinds of jobs?	1	2	3
Arrange a bus or train trip to go out of town?	1	2	3
Balance a checkbook?	1	2	3

95. In the last year have you done any of the following things:
(CIRCLE 2 FOR YES OR 1 FOR NO)

	Yes	No
Smoked cigarettes?	2	1
Drank beer, wine, or "hard liquor"?	2	1
Smoked marijuana (grass, pot)?	2	1
Taken some other drugs?	2	1
Gone to school when you are drunk or high on some drugs?	2	1
Sniffed glue, paint or some other spray?	2	1

ID NUMBER:_____

GRADE:_____

_____
(NAME)

_____
(STREET ADDRESS)

_____
(APARTMENT NUMBER, IF APPLICABLE)

_____
(CITY, STATE, AND ZIP CODE)

_____
(YOUR PHONE NUMBER)

I certify I received $5.00 from:

    IDEAS
    Magnolia Star Route
    Nederland, CO   80466

_____   _____
(Respondent)   (Date)

_____   _____
(Field Interviewer)   (Date)