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DISSERTATION
EDUCATIONAL RESILIENCE IN DROPOUTS WHO RETURN TO GAIN HIGH
SCHOOL DEGREES

Submitted by
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School of Education

In partial fulfillment of the requirements
for the degree Doctor of Philosophy
Colorado State University
Fort Collins, Colorado
Spring 2000

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COLORADO STATE UNIVERSITY

December 21, 1999

WE HEREBY RECOMMEND THAT THE DISSERTATION PREPARED UNDER OUR SUPERVISION BY JEFFREY C. WAYMAN ENTITLED EDUCATIONAL RESILIENCE IN DROPOUTS WHO RETURN TO GAIN HIGH SCHOOL DEGREES BE ACCEPTED AS FULLFILING IN PART REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY IN EDUCATION.

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ABSTRACT OF DISSERTATION
EDUCATIONAL RESILIENCE IN DROPOUTS WHO RETURN TO GAIN HIGH
SCHOOL DEGREES

This study examined school dropouts of Mexican American and non-Latino white ancestry who have gained high school diplomas, GEDs, or neither, identifying factors that are associated with dropouts' attainment of high school credentials. This work broadened the knowledge base surrounding returning dropouts by considering the returning dropout an educationally resilient student. Personal and environmental factors from the study of educational resilience were considered, along with factors shown by previous research to distinguish returning dropouts with degrees from dropouts with no degrees. The study encompassed the entire dropout population, including participants who had dropped out as early as 7th grade and utilizing multiple imputation to account for missing data due to participants who were not present in the second wave of data collection.

Logistic regression analyses were performed to identify a parsimonious set of factors which distinguished dropouts who held degrees (diploma or GED) from those who did not. Similar analyses were performed to distinguish participants who had attained diplomas from those who had attained GEDs.

It was estimated that 59.2% of dropouts return to obtain high school credentials. School capability, age at dropout, perception of school success, and friends in school

significantly predicted degree attainment, while school capability, grade at dropout, self-confidence and educational aspirations significantly predicted the type of degree held. These relationships did not vary by ethnicity, although degree attainment was less likely for Mexican American dropouts.

The study concludes that consideration of factors from the study of educational resilience significantly adds to previous knowledge of return factors, and that although degree decisions are partially a function of factors which are relatively intractable at the high school level, they are also a function of factors which can be influenced at the high school level. Building resilience in potential dropouts can be an effective method for promoting degree attainment, and schools and educators may be able to play a role in the building of such resilience.

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Special recognition goes to my grandmother, Dorothy. Nobody was prouder of this than you, and I'll forever regret that I didn't find a way to finish this one month earlier. But I know you were watching, I know you were proud, and I know you celebrated with us. I trust you'll help me to continue to make my work worthwhile and helpful.

In loving memory of Dorothy S. Pearson

She ensured herself the highest place in heaven by loving her family, doing for others, and never putting herself first. Our charge is to carry this on.

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CHAPTER ONE: INTRODUCTION

Dropping out of high school is a problem which continues to plague our society. There exists a voluminous body of research outlining the problems associated with school dropout – dropping out has been shown to be associated with delinquency and substance use (Chavez, Oetting, & Swaim, 1994; Elliott, Huizinga, & Ageton, 1985; Krohn, Thornberry, Collins-Hall, & Lizotte, 1995), lower school achievement (Ekstrom, Goertz, Pollack, & Rock, 1986; Fagan & Pabon, 1990; Rumberger, 1983), and lower wages and higher unemployment (Catterall, 1987; Rumberger, 1987). Further, the individual consequences of dropping out also create social costs. For instance, Catterall estimated the dropouts from one large city would cost the city \$3.2 billion in lost earnings. Rumberger (1987) reported dropouts to be more dependent on welfare and other social services.

Dropping out of school does present daunting circumstances for adolescents. However, dropping out of high school does not have to be, and is not necessarily, a permanent condition; estimates of the percentage of dropouts who eventually attain either high school diplomas or General Educational Development certifications (GEDs) have been as high as 44% (Kolstad & Kaufman, 1989). Unfortunately, few studies have explored in-depth the correlates of degree attainment in dropouts. As Garnezy (1991) points out, the study of success is every bit as important as the study of failure.

Balancing the well-developed research on dropout correlates with a research base of return correlates not only provides information on why dropouts gain degrees, but also provides a different perspective from which to augment dropout prevention efforts.

Dropouts Who Return to School Settings

Studies of returning dropouts have examined either dropouts who return to school (Borus & Carpenter, 1983; Chuang, 1997) or dropouts who obtain high school degrees or GEDs (Kaufman, 1988; Kolstad & Owings, 1986; Kolstad & Kaufman, 1989). Studies of this type have compared factors present in returning dropouts to a "typical dropout profile". From the vast amount of dropout literature, these studies have been able to identify factors associated with dropping out and have analyzed variables identified in this profile, hypothesizing that those dropouts who do not fit the profile are more likely to return to high school.

Although this body of research is not sufficiently developed to specify a complete picture, there is some agreement among these studies as to factors which influence a student's return to high school. Achievement test scores were found in all studies reviewed here (except Borus & Carpenter (1983)) to be positively related to return for more education. Relationships between returning and the presence of educational expectations or aspirations were found by all reviewed studies except Chuang (1997). Early dropouts are less likely to return, as shown by all the studies except Kaufman (1988), which did not include this variable. Gender was not shown by any of the above studies to be associated directly with returning to high school.

There is disagreement in these studies on other factors commonly associated with dropouts. For instance, ethnic effects are an inconsistent mixture in these studies. Non-

Latino white dropouts were found to return more than minority dropouts (Kolstad & Owings, 1986). African-American dropouts were found to return more than dropouts of other ethnicities (Chuang, 1997). Hispanic female dropouts were found by Kolstad and Kaufman (1989) to be less likely to complete than other groups. Finally, ethnicity was not found to be significant at all in two studies (Borus & Carpenter, 1983; Kaufman, 1988). Kaufman, and Kolstad and Kaufman found dropouts with children less likely to return for degrees, Chuang found these dropouts more likely to return, and Borus and Carpenter found no relationship. Socioeconomic status was not found to be significant by Borus and Carpenter and Chuang, but was found to be significant by Kaufman, Kolstad and Owings, and Kolstad and Kaufman.

Educationally, the instance of a dropout endeavoring to complete high school is a positive occurrence. The fact that this phenomenon has been studied by examining correlates of the negative act of dropping out of high school is limiting. Symbolically, using correlates of dropping out to predict returning is tantamount to stating that in order to return, a dropout must travel the same road (s)he took in dropping out – only in reverse. There exists a need to identify a theoretical framework which allows for study of multiple roads leading away from the point of dropping out back to the point of returning. Further, this framework should explain returning in terms of the entire student – the interaction of students, their personal characteristics, and their ever-changing environment. The study of educational resilience provides such a framework.

Educational Resilience

The study of educational resilience has sprung from the more general concept of resilience. Resilience is a multifaceted, complex phenomenon which enables an

individual to succeed despite adverse conditions or outcomes. Although a relatively new area of study, the research base describing resilience is fairly well-developed. Studies from this area have commonly identified children as "at-risk" based on the presence of many factors proven to be correlated with adverse circumstances (e.g., poverty, minority status, and drug addiction), then examined groups of children who have shown success despite these daunting circumstances (Wang, Haertel & Walberg, 1994). In examining at-risk populations, these studies have identified factors which moderate the effects of individual vulnerability or environmental hazards and enable at-risk children to "beat the odds" and succeed despite a situation which usually implies failure. Such factors include environmental factors, physical factors, socioemotional factors and cognitive factors (Wang et al., 1994), and can be more generally identified as personal factors and environmental factors (Garmezy, 1991; Rutter, 1987).

Knowledge of factors associated with resilience has provided a theoretical and empirical base from which to study educational resilience. Educational resilience is defined as "the heightened likelihood of educational success despite personal vulnerabilities and adversities brought about by environmental conditions and experiences" (Wang et al., 1994, p. 46). High school dropouts who later gain high school diplomas or GEDs are educationally resilient in the sense that they have shown academic success by gaining a degree despite the adverse conditions presented by dropping out of school. In the study of educational resilience, researchers identify and promote those factors which protect against the adverse effects caused by an at-risk situation, and which ultimately produce students who are academically successful. These factors are also

typically categorized into personal factors and environmental factors (Alva, 1991; Arellano & Padilla, 1996; McMillan & Reed, 1993).

Personal factors are internal attributes and attitudes which the individual uses to buffer the adverse effects of their situation. Willingness to work hard, healthy self-concept, educational aspirations, and motivation are among the personal factors believed to be associated with educational resilience (Geary, 1988; McMillan & Reed, 1993; Wang, Haertel & Walberg, 1997). Self-concept and optimism have been shown to be especially critical for minority students, whose social and ethnic identities may be different from their school's. Alva (1991) and Alva and Padilla (1995) found that positive attitudes are in large part responsible for resilient Latino students' school adjustment to a majority-culture dominated school environment, while Taylor (1994) suggested that such attitudes helped African-American students avoid internalizing negative messages.

Environmental factors are external influences which provide support and protect against negative factors threatening the resilient person. Positive adult contact has been shown to be an important protective factor correlated with educational resilience. Such support enables students to learn a sense of trust and provides them with someone who will help them learn from their problems. This contact does not necessarily need to be a family member; teachers are often listed as sources of support, as are relatives outside the family (Floyd, 1996; McMillan & Reed, 1993). Resilient students often are able to form an informal support network of friends, family and others, providing areas of support in tough times (Geary, 1988). Family support of education helps students see the importance and value of the pursuit of an education (Clark, 1983; McMillan & Reed;

Wang et al., 1994). School environments and specific teachers that are supportive and provide a positive place for the student to learn are immensely important to academic success (Alva & Padilla, 1995; Wang et al.).

There is possibility for overlap between the tenets of educational resilience and the study of factors influencing the education of dropouts. Wang et al. (1997) note that educational resilience is not a product of innate characteristics or a life event, but is the result of continual interaction between individuals and their environment. This premise operates in concert with the perspective that dropping out is but one step on the educational continuum for these students. Thus, efforts to identify factors which promote the credentialing of high school dropouts fit well within the framework of the study of educational resilience – identification of factors and interventions which foster positive academic results are critical to both areas of study. The present study aims to identify factors present in educationally resilient students which also distinguish between high school dropouts who gain high school credentials and those who do not.

The Present Study

Dropouts who return to gain high school credentials in the form of a high school diploma or GED have been studied by analyzing factors proven to be associated with dropping out of high school. These studies have provided information about these students, but have not thoroughly explained the factors associated with a dropout's further education. Analysis of factors associated with positive educational experiences provides a different framework from which to consider this phenomenon. Specifically, no study has considered the returning dropout a resilient student, analyzing the association of factors present in educationally resilient students with the decision to return for high

school credentials. The present study, within the context of educational resilience, examines Mexican American and non-Latino white dropouts who have gained high school diplomas, GEDs, or neither, identifying personal and environmental factors that are associated with dropouts' attainment of high school credentials.

The present study uses longitudinal data drawn from a survey of Mexican American and non-Latino white dropouts in the Southwestern United States. These data were collected from three sites: a city (population = 350,000), a mid-sized community (population = 90,000) and a small community (population = 30,000). Follow-up surveys were administered, on average, four years after the original survey. Dropouts were defined as students in grades 7-12 who had not attended school for at least 30 days, had not transferred to another school, were not being home-schooled, and had not contacted the school system about re-admission. The survey instrument used in this project encompassed a wide variety of self-reported psychosocial, school, family and peer items.

The present study intends to identify whether personal and environmental factors associated with educational resilience contribute to the understanding of dropouts who return for high school credentials, over and above factors identified in previous research. In doing so, this study examines four questions.

1. Studies of returning dropouts have identified factors associated with returning, but have not studied all of these factors in tandem. When studied concomitantly, how do these factors describe the attainment of high school credentials?

In previous studies of returning dropouts, it is not clear whether identified significances are due to omission of other important factors. The present study considers all factors found to be significant in these studies, using two logistic regression models –

one identifying factors which distinguish attainment of high school credentials (diploma or GED) versus no credentials, the other identifying factors which distinguish attainment of a high school diploma versus attainment of a GED. For both models, a parsimonious set of factors is identified using a backward selection procedure.

2. How do factors which have been shown to contribute to educational resilience describe the attainment of high school credentials?

Factors previously shown to be predictive of educational resilience are considered within their respective dimensions (e.g., family factors, school factors). Logistic regression analyses are performed within each dimension to identify factors which significantly predict attainment of high school credentials (diploma or GED) versus no credentials, and attainment of a high school diploma versus attainment of a GED.

Parsimonious sets of factors are chosen using a backward selection procedure.

3. How does knowledge of educational resilience add to the knowledge of why dropouts return for high school credentials?
4. Drawing from the literature on educational resilience and past studies of returning dropouts, which set of factors best describes attainment of high school credentials?

Research Questions #3 and #4 can be answered with the same set of analyses.

Factors from previous dropout research and educational resilience found to be predictive of attainment of high school credentials are considered in an overall analysis. Two logistic regression models are estimated – one for the dependent variable of high school credentials (diploma or GED) versus no credentials, and the other for attainment of a high school diploma versus attainment of a GED. For each model, a parsimonious set of factors is chosen using a backward selection procedure.

Significance of the Present Study

The present study provides a contribution to the understanding of dropouts who obtain degrees and is unique in many ways. First is the breadth and scope of this study. The broad range of measures collected enables the present study to address many issues limiting previous studies of dropouts who gain degrees. For example, previous studies independently drew upon factors known to be associated with dropping out and did not commonly examine variables shown to be significant in previous studies of returning dropouts. Such methodology allowed for only coincidental overlap in the variables chosen. The present study encompasses all of the factors shown in any study to be significantly related to the degree attainment of dropouts. Previous studies also were limited to participants who dropped out in tenth grade or later. The present study is able to consider students who dropped out earlier – some as early as seventh grade. In addition, these earlier studies primarily make use of data available from school records, such as achievement test scores, grade point averages, extracurricular activities, and the like. Alva and Padilla (1995) and Chavez et al. (1994) both point to the need for studies involving students' subjective accounts of the schooling process. The present study measures both student-reported and school-reported information.

Second, the present study is the first of its kind to utilize multiple imputation to address problems caused by missing data. Missing data in longitudinal studies can be responsible for biased results – analyzing only cases with complete information implicitly assumes that the sample present for all waves of data is similar to the sample not present for all data measurements. In a study of dropouts, it is implausible to assume these samples equivalent; therefore, data must be analyzed in a manner which eliminates such

bias. The return studies reviewed for this paper typically included no treatment of missing data, with the exception of Kaufman (1988). However, advanced techniques such as multiple imputation were not well developed nor widely available at the time of Kaufman's study. The use of multiple imputation and the inclusion of dropouts at ninth grade and under make the present study the first return study to examine the full dropout population.

Third, the present study is unique in that no study was found that has undertaken the notion of educational resilience as it applies to returning dropouts. Increasingly, researchers are beginning to see education as a continuum through a person's life span; education does not necessarily cease when a student drops out of high school (e.g., Kolstad & Kaufman, 1989). Much is known about resilient students, but less is known about dropouts who return to school. The present study will provide knowledge about the nature of resiliency in dropouts.

Delimitations

The present study contains delimitations which should be acknowledged. First, studies of educationally resilient individuals typically focus on those who are at risk of failure and have succeeded academically, but have not necessarily encountered academic failure. The present work examines a narrower group of educationally resilient students than those typically studied. Instead of belonging to a group with a heightened probability of school failure, the students in this study have actually failed, in the form of dropping out of high school. This is consistent with educational resilience as studied by Catterall (1998).

Second, although all the variables identified as significant in the reviewed studies of returning dropouts were contained in the present data set, this is not true for the reviewed studies on educational resilience. Most of the variables found by these studies are included in the present study, but some were not. Measures from other studies of educational resilience which are not examined in the present study are internal locus of control, student preparedness, student school engagement, personal interest taken in the student by specific school personnel, family attitudes toward school, and friends' attitudes toward school.

To help identify relevant literature on returning dropouts and educationally resilient students, a thorough search of electronic databases was conducted. These databases included Dissertation Abstracts International, ERIC, Psycinfo, Social Sciences Citation Index, and Uncover. This search included the following words and phrases in various forms and combinations: academic invulnerability, academic persistence, academic resilience, completion, continuation student, dropout, educational invulnerability, educational persistence, educational resilience, GED, high school degree, protective factor, reentry student, returning dropout, and risk factor. Studies of returning dropouts were chosen for review if they were published within the last 20 years and if they involved comparisons between returning dropouts and dropouts who did not return to high school settings.

Limitations of the Present Study

The present study has limitations which should be acknowledged but are not serious enough to threaten the validity of the conclusions. First, the sample is drawn from adolescents in the southwestern United States. Other studies of dropouts who

possess high school credentials have been based on nationally sampled data such as the High School and Beyond data set (Kaufman, 1988; Kolstad & Owings, 1986; Kolstad & Kaufman, 1989). In the strictest sense, this study does not have the broad inference of these other studies. However, previous research published using this data set (Chavez et al., 1994; Deffenbacher, Chavez, & Wayman, 1997) has produced results consistent with existing research on national data sets, increasing confidence that the experiences of the dropouts in this study are similar to that of those nationwide.

Also, the present study considers the ethnicity of the student (Mexican American or non-Latino white), but does not consider the acculturation of the student, as recommended by Alva and Padilla (1995). Mexican American and non-Latino white cultural identity scales were available in the data set utilized by this study, but nonresponse presented data problems. Relatively few non-Latino white participants answered items for either acculturation scales. Accounting for this missing data would essentially involve estimating responses of non-Latino white participants using relationships shown by Mexican American participants, a method which would introduce a separate kind of bias. Therefore, consideration of acculturation is better done using only Mexican American participants.

Use of the Term “Dropout”

Throughout the present study, the term “dropout” is used to describe students who have left high school before obtaining a high school diploma. The use of this term is somewhat troublesome, since it is a label which connotes nothing of the individual. Other terms were considered, such as “school leavers” and “students who have left school before graduating”, but these terms were either equally labeling or cumbersome. In

addition, the field of research on students who have left high school uses the term “dropout” almost exclusively. Hence, for want of a better term, and in deference to protocol within the field, the term “dropout” will be used reluctantly in this work.

CHAPTER TWO: REVIEW OF LITERATURE

Introduction

The relevant research base supporting the present study draws from the literature on dropouts who return to school settings and from the literature on educational resilience. The present study builds upon knowledge presented in studies of returning dropouts by analyzing further the contribution of factors associated with educational resilience. Consistent with this focus, a review of the literature surrounding returning dropouts is first presented. This review first describes the methodological aspects of the studies, comparing and contrasting the samples, definitions, and analytic structure used in the studies. Significant findings from the studies are then discussed, arranged by family background, individual, and school factors. Second, a review of the literature on educational resilience is presented. This review is also organized by factors – personal (e.g., self-esteem, optimism) and environmental (e.g., school, peers) factors shown to characterize educationally resilient students.

Comparison of Methodologies in Studies of Returning Dropouts

Little research exists on school dropouts who return to some form of education. Over the last 20 years only five studies were located comparing dropouts who return and those who stay away from education; only one of these studies has been published in the last ten years (Borus & Carpenter, 1983; Chuang, 1997; Kaufman, 1988; Kolstad & Kaufman, 1989; Kolstad & Owings, 1986).

The studies reviewed here utilized two data sets. Kaufman (1988), Kolstad and Kaufman (1989), and Kolstad and Owings (1986) all used participants from the High School and Beyond data set (HSB), while Borus and Carpenter (1983), and Chuang (1997) studied data from the National Longitudinal Survey of Youth Labor Market Experience (NLS). The definitions of “dropout” used in these studies was generally consistent – a participant who was not enrolled in school at the time of the survey was considered a dropout in all the studies, while those that utilized the HSB data additionally classified participants who reported having ever dropped out of school as dropouts.

Identification of returning dropouts in these studies spanned a range from merely re-enrolling in school to specific attainment of a high school degree. Borus and Carpenter (1983) studied adolescents who dropped out in 1979 and were enrolled in school when surveyed a year later, while Chuang (1997) defined returners as those participants who dropped out from 1979 through 1986, then re-enrolled in school or attained a GED during this time period. Kolstad and Owings (1986) analyzed dropouts who, within two years of dropping out, had completed their high school education by way of a GED or a high school diploma. Kaufman (1988) created separate groups for dropouts who were enrolled in school two years later, but had not gained credentials, and those who had either a high school diploma or GED. These two studies used the second HSB follow-up in 1984, which did not distinguish between education by way of high school diploma or GED. Kolstad and Kaufman (1989), however, utilized the third follow-up of HSB taken in 1986 and were able to separately analyze dropouts with high school diplomas and those with GEDs. For comparison, each study used the group of dropouts who did not meet the study’s definition of a returning dropout. Although the

present study discerns factors associated only with the actual degree attainment of dropouts. inclusion of studies which have examined dropouts who return to school settings broadens the knowledge base from which to draw.

All of these studies chose variables for analysis based on previous research associating those particular variables with dropping out of high school, theorizing that the presence of positive levels of these variables would predict returning for further high school education. Some of these variables have also been shown to be associated with educational resilience; the Kaufman (1988) study utilized the most of these overlapping variables.

Analysis strategies in these studies varied from simple descriptive statistics to complex multivariate analysis, making comparison of results across studies problematic. Kolstad and Owings (1986) presented simple percentages of returning dropouts, broken down by factors such as gender and ethnicity. Borus and Carpenter (1983) first reduced the amount of variables for study by conducting a regression analysis to eliminate any factors which were not significant at the .10 level. Factors judged to be significant were then considered in a probit analysis to distinguish returners and non-returners. Chuang (1997) conducted logistic regression analyses for the sample as a whole along with separate analyses for males and females, also distinguishing returners and non-returners. Kolstad and Kaufman (1989) conducted event history analyses to model separate probabilities of attaining a high school degree, attaining a GED, or attaining neither. Kaufman (1988) was the only study which attempted a model-building strategy to identify a parsimonious set of variables related to returning. In this study, MANOVA

analyses were performed in a stepdown fashion to determine the relative influence of gender and completion status on variables thought to be associated with school return.

All of the reviewed studies included descriptive univariate breakdowns of the association of each studied variable with returning, and as implied above, all but Kolstad and Owings (1986) included consideration of all of these variables in tandem with each other. Thus, discussion below of significant effects from these studies will include only the highest order of analysis conducted.

Sample bias is a potential problem in all of these studies. Because they are longitudinal in nature, all of these studies suffer from an inability to follow up each and every one of the dropouts, and each study conducted analyses on only those dropouts who were successfully followed up. Such treatment of missing dropouts assumes that the dropouts who remained in the study are similar to the ones who did not. Such an assumption is suspect, as it would make sense that dropouts who did not continue were a different group of youth than those who did. In fact, Kaufman (1988) speculated that these youth were “hard core” dropouts. Kaufman’s was the only study to attempt to describe this bias and concluded that the elimination of “hard core dropouts” would only result in fewer group differences. He did not comment on the potential for differential relationships between the studied variables and returning, certainly a conceivable and potentially more threatening problem. Sample bias could also be introduced by way of item non-response (i.e., inclusion of cases who provided only complete responses to all of the variables studied). Borus and Carpenter (1983), Kaufman (1988) and Kolstad and Kaufman (1989) attempted to explain this bias by including a “missing” category for some of the studied variables. This category was significant at least once in each of these

studies. Other studies attempted to account for sample bias by estimating what the missing responses would have been. Kaufman (1988) accounted for item non-response for scaled variables by substituting the mean of the valid variables for that scale. Chuang (1997) accounted for item non-response by substituting the mean of the entire sample's responses for missing values on each particular variable. Both methods have been shown to produce unbiased parameter estimates under certain conditions, but artificially reduce the variance of these estimates (Chuang's method produces a greater amount of artificial reduction than does Kaufman's), a potential threat to the validity of the reported significances. In addition, these methods do not preserve relationships with other variables (Little & Schenker, 1995).

The methodologies described here allowed these studies to identify many factors as being significantly associated with a dropout's return to high school. The next section describes these factors and the nature of their relationship.

Significant Factors in Studies of Returning Dropouts

Family background. Family background variables from these studies primarily included socioeconomic variables (e.g., parental education, parental occupation, family income) and family structure variables. Additionally, Borus and Carpenter (1983) and Kaufman (1988) included family educational support (reading materials in the home and parental involvement, respectively).

Socioeconomic status (SES) was the only family factor described as significant in these studies. Kaufman (1988), Kolstad and Kaufman (1989), and Kolstad and Owings (1986) all found higher levels of SES to be associated with higher probability of returning for schooling, although Kolstad and Kaufman were unable to demonstrate this

relationship for returning by way of high school graduation. Borus and Carpenter (1983) and Chuang (1997) did not report significant relationship between SES and returning. This discrepancy is possibly explained by the construction of the SES variable. The studies which found SES significant all utilized the HSB data set, in which SES is constructed as a combination of factors such as parental education and occupation, family income and material possessions. Borus and Carpenter defined SES more specifically as being above or below poverty level, while Chuang defined SES as being high, medium, or low family income. Both studies additionally considered many of the factors included in the HSB definition separately. Thus, a plausible explanation for this discrepancy is that SES is associated with returning to education when considered as a complete construct, but the components which make up this construct do not have powerful individual associations. Socioeconomic status was found to interact with ethnicity in the Kolstad and Owings study; this relationship is described below.

Individual factors. Individual factors considered by these studies included situational factors such as gender, ethnicity, ability, and having children. Also included were educational factors such as aspirations, commitment, age at dropout and out-of-school duration, and psychological factors such as self-esteem, locus of control, and religiosity. Of these factors, ability, age or grade at dropout, and educational aspirations were the most commonly significant variables. Gender was never found to be a significant main effect; discussion of its significance when interacting with other variables is contained within discussion of those particular effects.

Ability was found to be a strong predictor of returning, described as significant by all studies except Borus and Carpenter (1983). Each of the studies used achievement test

scores as a measure of the student's ability. Kolstad and Kaufman (1989) found test scores to be slightly higher in the group which attained GEDs than in the group which attained high school degrees. This is counter to what the authors expected, but they noted the possibility that the GED group contains a subset of high-achieving students who take the GED to gain an early exit from high school. Chuang (1997) found the ability-return relationship to be present for males but not for females.

Age at dropout and grade at dropout were significantly associated with returning in all the studies except Kaufman (1989) (he did not include this factor), but the results are at first glance contradictory. Kolstad and Kaufman (1989) and Kolstad and Owings (1986) found that dropouts who left in earlier grades were less likely to finish than those who left in later grades. Kolstad and Kaufman further found that of those students who did finish, early leavers were more likely to get GEDs than high school degrees. Borus and Carpenter (1983) and Chuang (1997) on the other hand, found age of dropout negatively associated with probability of returning. These results are in seeming contradiction of each other, as age and grade in school are highly correlated. However, the Borus and Carpenter and Chuang studies primarily focused on a student's return to high school, rather than actual degree attainment. Chuang noted that the return rates for students 15 – 18 years old was essentially equal, but was substantially less for older students. It is reasonable that adult dropouts would be dubious about returning to classes in a high school setting. Thus, it seems that students who drop out early and face a greater amount of remaining schooling are less likely to get a degree (a GED if they complete high school at all), and that age at dropout is unrelated to returning to the high school setting, unless the dropout was an adult when they dropped out.

A student's expectations of the level of schooling they would attain was a significant predictor of returning to school in all studies except Chuang (1997). The non-significance in Chuang's study may be because of the simplicity of the measure – whether a student thought they would complete high school or not – or the fact that the measure did not contain college plans, as did measures used in the other studies. Borus and Carpenter (1983) found that dropouts who thought they would go to college were more likely to return to high school than those who did not. Kolstad and Kaufman (1989) and Kolstad and Owings (1986) presented aspirations as a participant's intent to complete no higher education, vocational-technical school, or college. Both studies found completion to be lowest in dropouts who aspired to no higher education and highest in those who planned to attend college. Kaufman (1988) studied aspirations in a more complicated fashion, including items measuring the highest degree the dropout intended to attain and the highest degree with which the dropout would be satisfied (responses on both items ranging from no high school education to Ph.D.). Both of these measures were significantly associated with returning, with and without degree attainment.

Factors specific to a dropout's situation were found to be significant, but there was little consensus on any one of these factors. Ethnicity was examined in all of the studies, but was only found to be significant in the Chuang (1997) and Kolstad and Owings (1986) studies, possibly because, as many researchers believe, ethnic effects in dropouts are explained by the inclusion of other factors (Rumberger, 1983). Chuang found African-American dropouts more likely to return than non-Latino white or Latino dropouts, while Kolstad and Owings found non-Latino white dropouts attained degrees more than African-American dropouts, who in turn, completed more than Latino

dropouts. The Kolstad and Owings results painted a distorted picture of the true relationship; the interactions they presented describe a far different relationship between ethnicity and school completion. In studying ethnicity and socioeconomic status in tandem, the authors found that lower levels of SES were associated with much more homogeneity in degree attainment among the different ethnicities. This extended research by Rumberger (1983), who showed that ethnic dropout differences were largely explained by SES. Kolstad and Owings also found an interaction between test scores and ethnicity. In the upper two ability quartiles, Latino students attained degrees at rates 10 – 15% higher than did non Latino white students. It was only in the lower ability quartile that non-Latino white dropouts attained degrees at a higher rate than did their Latino counterparts, with the inordinate number of Latino participants in this lower ability quartile accounting for the univariate result presented earlier. Further, there is evidence to suggest that minority females return at slightly lower rates than do non-Latino white dropouts of either gender (Kolstad & Kaufman, 1989; Kolstad & Owings).

The presence of a family (i.e., being married and/or having children) also is associated with a dropout's decision to return for further schooling. Kaufman (1988) found the presence of children to be associated with higher rates of staying out of school once dropping out had occurred. As expected, this effect was stronger for females than males. Kolstad and Kaufman (1989) found similar results in their univariate findings, but when controlling for variables such as gender, grade at dropout and test scores, found childbirth to be strongly associated with completion of a degree by either method. The conflicting results from these two studies may be attributed to the fact that the Kaufman study evaluated childbirth after dropping out, while Kolstad and Kaufman evaluated

childbirth before dropping out, although it is not readily apparent why these differing definitions would cause such conflicting results. Borus and Carpenter (1983) and Chuang (1997) found no effects for presence of children, but were able to identify effects for marriage. Borus and Carpenter found that married dropouts were less likely to return to a high school setting than were unmarried dropouts. Chuang found that married male dropouts were more likely to return to high school, while married female dropouts were less likely, a finding which might be attributed to the presence of traditional gender roles. The conflicting results presented by these four studies might be explained by exploration of interactions between marriage and childbirth variables. The results may also be a result of the fact that the Borus and Carpenter and Chuang studies primarily examined returning to a high school setting.

School factors. School factors surprisingly remain a relatively unexamined group of variables with regard to returning dropouts. Kaufman (1988) was the only reviewed study which included school variables. He found dropouts who perceived their teachers to be more interested in them returned to school at slightly higher rates than did dropouts with lower perceptions. Kaufman also found high school grades to be a significant predictor of returning after accounting for the significant effects of test scores. He interpreted this finding to mean that once a student's ability is accounted for, the effort they are willing to put into school (as evidenced by grades) also predicts returning and degree attainment. Another possible explanation is that grades explain the student's willingness or ability to "play the school game", past what is explained by their cognitive assets. Also interesting are the factors which Kaufman did not find significant – the

dropout's perception of their school climate and discipline, participation in extracurricular activities, and the educational values of their peers.

These five studies have described factors correlated with a dropout's return to high school. The premise of the present study is that educational resilience provides a broader framework from which to study returning dropouts. A review of this literature is presented next.

Studies of Educational Resilience

Kolstad (Kolstad & Kaufman, 1989; Kolstad & Owings, 1986) has articulated the need for studies of returning dropouts to incorporate a psychological perspective. The present study responds to that call and intends to expand on the above research by examining the educational attainment of dropouts from the broader framework of educational resilience.

Studies of educational resilience identify personal and environmental factors which are believed to influence or cause a person's response to stressful stimuli. Personal factors are the qualities which a person brings to the situation, such as self-esteem, persistence, and ability. Environmental factors are external influences which include family, peer, and school influences. It is generally believed that the presence of these factors enables a more positive response to overwhelming situations, and prepares a person to overcome a greater degree of adversity. Factors generally believed to be helpful in fostering educational resilience are discussed below.

Self-esteem. Positive self-esteem is often shown to be a characteristic of resilient students, and is often mentioned in recommendations for creating programs which foster resilience (e.g., McMillan & Reed, 1993; Winfield, 1991). Students who feel better

about themselves and their abilities are believed to draw upon these attitudes when adverse situations present themselves and are more likely to make attempts at overcoming obstacles (Wang, Haertel & Walberg, 1994). Turner, Laria, Shapiro and Perez (1993) described the relationship between self-esteem and educational success as an interactive process, where one begets the other continually.

Studies show positive self-esteem to be associated with educational resilience across a broad range of samples and a broad range of definitions. Wang, Haertel and Walberg (1997) stated that educationally resilient students are found to have higher self-esteem than are their non-resilient counterparts. The authors cite a study by Peng, Wang and Walberg (1992), consisting of 19,000 students, showing a positive relationship between educational resilience and self-esteem. Finn and Rock (1997) found self-esteem to be higher in educationally resilient students, but only when studied univariately. In a qualitative study of resilient minority students, Geary (1988) found self-confidence frequently mentioned as a trait that resilient students believed one must have in order to succeed. Waxman, Huang and Padron (1997) found academic self-concept – defined as the extent to which students exhibit pride in their classwork and expect to do well in math – to be predictive of resiliency when studied in isolation. Self-concept was a moderately strong predictor when studied concomitantly with other significant variables. Turner et al. (1993) found the relationship between self-esteem and academic resilience to be present in adult students also. Their study involved Latino college students and high school dropouts from similar socioeconomic backgrounds and found self-esteem to be a differentiating factor between these two groups.

There is evidence that self-esteem contributes to educational resilience beyond differences attributable to legitimate beliefs in one's ability. Pollard (1989) studied poor Latino and African-American students, but eliminated those with lower ability, as measured by scores on the Iowa Test of Basic Skills. With this sample, she found the resilient students to have a better self-perception of their ability than did the non-resilient students. Gordon (1996) found belief in one's cognitive ability to be stronger in resilient students than non-resilient students. Although this belief may be a result of actual cognitive differences, Gordon theorized that this belief acted beyond actual ability to support strong motivation in these students.

Some researchers believe that there are better, more operative factors upon which to focus, relative to educational outcomes. A number of studies have not shown self-esteem to be significantly related to resilience, when other factors are controlled. According to Finn and Rock (1997), "Although a student's self-esteem is often presumed to be an important determinant of success or failure in school and of completing or not completing high school, the data in support of this contention are less than convincing." (p. 224). Their 1997 study showed that although self-esteem is correlated with educational resilience in isolation, self-esteem is not significantly correlated with resilience when controlling for the effects of school engagement behaviors.

Specific to minority students, Finn and Rock (1997) cited research showing the self-esteem/school achievement relationship to be weaker for minority students. Alva's (1991) study also provided some conflicting evidence regarding self-esteem and educational resilience. In a study of Mexican American students' educational resilience, Alva found academic self-esteem was a discriminant predictor of resiliency when

academic success was measured by achievement test scores. However, self-esteem was unable to discriminate resilient students when academic success was measured by grades. Catterall (1998) studied students during their 8th and 10th grade years and defined educational resilience in two ways: (1) as an improvement in grades for students with mostly C's or below, and (2) an increased commitment to graduate from high school. He was unable to demonstrate self-esteem to be a significant correlate of either measure of resiliency, when examining all participants or when isolating only Latino participants.

Persistence, optimism, and good work habits. Persistence in school, the presence of good school work habits, and optimism about school and the future are believed by some to influence educational resilience. It is interesting to note that mention of these traits as protective factors occurs almost exclusively in the qualitative research done on educational resilience. Finn and Rock (1997) is the only quantitative study to show significance, and only then in the area of good work habits. Persistence and optimism were common themes in the responses given during Floyd's (1996) interviews of resilient minority students. Floyd believed these characteristics to be critical facets of these students' resilient makeup, stating that resilient students call upon these traits when faced with challenging circumstances. One specific example of such circumstances was a student's description of perseverance despite what she considered stereotypical predispositions from teachers. Arellano and Padilla (1996) and Geary (1988) reported similar findings.

Finn and Rock (1997) focused their study around school engagement behaviors. Engagement behaviors shown to be predictive of educational resilience were factors such as being on time, appropriate scholarly effort and appropriate classroom behavior. These

personal qualities are related to the more general characteristics of dependability, personal discipline and positive academic work habits. The authors believed these findings to be of particular importance in terms of educational resilience because these are factors which are potentially changeable by teachers and school policy.

Persistence, optimism, and good work habits are common responses when teachers are asked why some students are resilient. Waxman et al. (1997) included such questions as an informal post-hoc follow-up to their study of resilient children. Geary (1988) included these variables as part of her qualitative analysis structure. In both studies, persistence and good work habits were the major factors mentioned by teachers as causing educational resilience. Finn and Rock (1997) included measures of teacher assessment of the quality of their students' engagement behaviors and found these measures to be predictive of educational resilience.

Educational aspirations and attitude. Students from high-risk backgrounds who hold heightened educational aspirations are believed to be more likely to succeed academically than students without such aspirations. Educational aspirations are, in part, born of success; a student is unlikely to aspire to further education without some feedback indicating (s)he is capable of this goal. Low educational aspirations are often indicative of other problems which lead to academic failure, such as low self-belief or low appraisal of the efficacy of education (Turner et al., 1993). Educational expectations can be particularly critical for Mexican American students, who may be aware of societal limits and weaker education/employment relationships for people of Mexican American origin (Alva & Padilla, 1995).

A scant body of empirical research exists exploring the link between educational expectations and educational resiliency, but this literature is consistent in describing the association as a positive one. Catterall's (1998) study found the more confident a student was that they would graduate from high school, the more likely they were to be resilient. This finding was present both in the analysis of the entire sample, and when Latino students were isolated. Wang et al. (1997) reported similar findings from a study conducted by Peng et al. (1992). Turner et al. (1993) found that educational aspirations distinguished Latino college attendees from high school dropouts, both when studied univariately and when entered into a discriminant analysis. Waxman et al. (1997) studied resilient and non-resilient Latino middle school students. This study also found differences in intent to graduate high school and intent to attend college.

Other personal factors. Some assertions have been made in the literature regarding educational resilience and its relationship to gender, socioeconomic status, and ability; these points did not fit into the above discussion and are worth a brief mention here.

Although an occasional finding involving gender was discussed above, it is interesting to note that studies of educational resilience typically do not show gender related differences (e.g., Alva, 1991; Catterall, 1998; Waxman et al., 1997).

Socioeconomic status and academic ability are usually used to define educational resilience, but there are a handful of studies which have examined these factors as covariates of other definitions of educational resilience. These studies indicated that other factors are more predictive of resilience than socioeconomic status (Alva, 1991;

Catterall, 1998), although Finn and Rock (1997) were able to show a univariate relationship.

Those few studies which examined the relationship between ability and educational resilience have produced mixed results. Catterall (1998) used achievement test scores and grades to predict resilience. Both were found to be significantly related. Turner et al. (1993) used two forms of intelligence tests (Block-Design and Digit-Symbol subtests of the WAIS-R) along with grades to predict resilience. Not surprisingly, grades were higher in the college attendees than in high school dropouts, but neither intelligence subscale was significant when considered with other variables.

Family. Family factors have been shown to be instrumental in fostering resilient outcomes for students. Supportive families provide encouragement, informal counseling, and school support. This type of family commitment lends a feeling of coherence to the family unit (Clark, 1983; McMillan & Reed, 1993; Wang et al., 1994). Clark's study noted, "We were repeatedly struck by the strong mutual support systems and wide range of controlled, structured activities in the homes of competent students." (p. 210). Not surprisingly, families are seen as an intervention point. Turner et al. (1993) surmised that long-standing patterns of family relationships, both good and bad, have at least some causal connection to school performance. Finn and Rock (1997) stated that family support may be a strong factor in promoting the school engagement behaviors they found to be predictive of educational resilience. Catterall (1998), among others, noted that empirical data showing the relationship between family support and resilience is reinforcement for the importance of school policies centered around parental training and awareness.

Much of the research involving families and educational resilience can be categorized as “general family support”. The role of family support in educational resilience has been shown to be a fairly robust effect across studies involving differing ages, cultures, and methodologies. Clark’s (1983) study of the families of high and low achieving African-American students identified a supportive family environment as a major factor in the resilience of these students. Interviews of educationally resilient students by McMillan and Reed (1993) and Floyd (1996) supported this. Catterall (1998) found family educational support at the time of risk identification to be predictive of later resilience, with family educational support at the time of resilience identification an even stronger predictor. These relationships were weaker in Latino students – only family support at the time of resilience identification was significant. The different strengths of relationship found by Catterall (1998) in the overall sample and the Latino sub-sample are likely due to the much larger sample size in the overall sample as compared to the Latino sub-sample.

Findings of the importance of family support in educational resilience are verified in samples of young adults. Turner et al. (1993) reported significant differences between high school dropouts and college students in family alienation, closeness to family, and feelings about family ties, each of which measure a more general supportiveness construct. The interviews of Arellano and Padilla (1996) showed the importance that Mexican American resilient college students placed on their family support networks.

Negative perception of family support has been shown to be correlated with educational resilience. The alienation finding by Turner et al. (1993) is mentioned above, and Alva (1991) found non-resilient students to have more worries about their families.

Still, family worries do not spell failure – McMillan and Reed (1993) reported that many resilient students reported negative family experiences and expressed wishes for a better family life.

There is other literature which relates educational resilience to more specific forms of family support. Floyd (1996) reported that the resilient students in her study frequently mentioned parental support in terms of instilling morals, work ethics, and “being there” – comments similar to those listed by Arellano and Padilla (1996). Parental educational expectations have been mentioned as important factors by McMillan and Reed (1993) and Pollard (1996), in that higher expectations produce constructive pressure toward more attainment. Other facets of parental influence have produced mildly conflicting results. Clark (1983) reported that families of resilient students were marked by a higher level of parental supervision. Gonzalez and Padilla (1997) found family/peer support, among other factors, to be a significant predictor of resilience in their discriminant analysis, but found parental monitoring not to be a significant predictor. The authors interpreted this result to suggest that although parental monitoring may be significant, the presence of other factors may overshadow the significance of parental monitoring. Many studies note the importance of parental educational support (e.g., Clark; Wang et al., 1994), but Alva’s (1991) study found factors other than perceived parental educational support to be significant in a discriminant analysis of resilient and non-resilient students. It should be noted that Alva acknowledged failure to account for the skewed nature of the support variable as a possible cause for this finding. Also, Waxman et al. (1997) found that a measure which combined parental involvement and parental expectations regarding their children’s math class was not significantly related to

resiliency. In this study, other factors, including student educational aspirations, were found to be significant. The authors speculated that although the parental involvement variable was not significant, the heightened aspirations of the students may have been a result of heightened parental aspirations for their education. This supposition is supported in a study of post-high school resiliency by Horn and Chen (1998), who found the level of parental expectations for post-secondary education to be a significant predictor of whether at-risk high school graduates attended a post-secondary institution or not. It should be noted that parental educational support does not appear to be limited to those parents with higher levels of education. Arellano and Padilla (1996) found that parental educational support was often described by resilient students, despite the fact that this group had parents with little or no education.

Specific relationships, within and sometimes outside of the immediate family, are also considered important to the resilience process. Participants in the Floyd (1996) study most frequently mentioned their mothers as sources of support and closeness, but these students also mentioned fathers and other family members as being instrumental in their success. McMillan and Reed (1993) also found that a strong relationship with at least one adult was a characteristic of resilient students; this adult was sometimes found to be a non-parent, such as a cousin, aunt, or uncle.

Peers. The influences of peers have often been shown to be associated with academic achievement (Hanushek, 1986). It is therefore surprising that more studies of educational resilience do not consider the co-occurrence of educational resilience and various peer factors. According to Clark (1991), social support, including peer support,

serves two major functions in educational resiliency: providing a buffer against stress, and helping with adjustment and development.

Gonzalez and Padilla (1997) examined peer support and peer acceptance measures. Both measures were found to be significant in t-tests comparing scores on these measures for resilient and non-resilient students. Gordon (1996) found that resilient students placed less importance on belonging to a group. This may appear contradictory, but as Gordon pointed out, this quality suggests that resilient students are able to avoid negative peer pressure. Turner et al. (1993) studied peer relationships by way of separate t-tests but were unable to show differences on these measures between dropouts and college students.

Peers are also believed to support educational resilience through their commitment to education, but again, little empirical data have been presented. Horn and Chen (1998) studied educational resilience by comparing at-risk young adults who attended post-secondary institutions and those who did not. Attending a four-year college was predicted strongly by the number of friends the participant had who attended four-year institutions. This variable, along with importance of education to friends, was found to distinguish participants who opted for any post-secondary education from those who chose none. Alva (1991) found the participant's evaluation of their friends' attitudes toward education to be a strong discriminator of resilient and non-resilient students. Waxman et al. (1997) found no significant resilience differences in a less direct measure of peer relations – the extent to which students knew, helped, and were friendly to their peers in their mathematics class.

School factors. Schools are a powerful influence on young people. The environment promoted by schools and teachers, and the students' perception of this environment, are crucial to the construction and maintenance of educational resilience in students (Alva & Padilla, 1995; Wang et al., 1994). Wang et al. (1994) stated simply that effective schools are places where students can acquire resilience.

The body of research on educational resilience serves as a reminder of how strong an influence teachers are in students' lives. They are the proximal point of contact for the student in terms of learning. Finn and Rock (1997) pointed out that teacher support may be especially critical for at-risk students. At-risk students may find themselves in an adversarial position soon after entering school, because they are more likely to bring with them predispositions which are not conducive to learning. Although there is considerable research on the impact teachers have on students, Finn and Rock (1997) stated, "The potential for highly accessible, supportive teachers to launch students on a positive trajectory is largely unexamined." (p. 232).

Teachers often serve as an important link in the resilient student's support network. Students sometimes are unable to gain certain kinds of support in their own homes, and teachers can serve a surrogate role in this regard. Alva and Padilla (1995) pointed out that Mexican American students often are juggling the extra weight of cultural mismatch between their home lives and school lives; when this occurs, they surmised that teacher support is crucial to the perseverance of these students. Floyd's (1996) qualitative study found that teachers were frequently cited by the students as sources of external support in their quest for academic achievement. Arellano and Padilla (1996) described passionate responses about the role of teachers in the success of many

of the students in their sample. From these responses, it was evident that for those students who were operating with little prior educational background, resources and social networks, teachers were an especially present influence on the student's academic success and subsequent application to elite universities. Alva (1991) and Pollard (1989) supported these conclusions using quantitative techniques. Both found variables measuring teacher support to be predictive of educational resilience in minority students. Similar to Finn and Rock (1997), Pollard interpreted her results to indicate that there are specific actions educators can take upon themselves to promote resilience, such as providing support, encouragement, and holding high expectations. Alva's (1991) study found teacher support to be predictive of educational resilience when defined in terms of grades, but not when based on test scores. Findings from this study highlight the important role that teachers play in terms of school survival, while for performance on standardized tests, there may be extenuating factors.

The messages, both intentional and unintentional, that teachers send to students are important. Students are sensitive to and aware of these messages. Geary (1988) reported insightful comments by resilient students, who believed that their teachers had a responsibility to be competent, to instruct them, and to follow general principles of respect and fairness. McMillan and Reed (1993) found that resilient adolescents described their teachers as relating to them and having positive, constructive expectations of them; Gordon (1996) believed that teacher affirmation can play a role in resilience by promoting academic self-concept and motivation. The manner in which students respond to, utilize, interpret, and internalize these messages is complex, especially because of the problems and conflicts that often characterize the educational experience of at-risk and

minority students. Thus, the studies and findings in this area are diverse, and often depend on which other protective factors are also studied. Teacher feedback was shown to differ significantly between male resilient and non-resilient students in Gonzalez and Padilla's (1997) study, but no differences were found for females. Teacher respect and care was included in Alva's (1991) analysis, but was not significantly related to any form of educational resilience. Arellano and Padilla (1996) heard descriptions of teacher bias and differential treatment of less gifted minority students, but these perceptions did not have an adverse effect on the success of the more gifted students who were the subjects of the analysis. The mixed results from these studies should not be interpreted to mean that the role of student-teacher interaction in educational resilience is a minor one. In describing the role of teachers in educational resilience, Wang et al. (1994; 1997) stressed the importance of teachers' responses to student diversity, whether they be cultural, familial, learning, or another type, and noted that effective teachers use a variety of strategies to respond to these needs. Freiberg (1994) described the essential role that teachers and their interactions with students played in an inner-city school held up for its resilience-promoting excellence.

Positive, appropriate teacher feedback may be harder for at-risk students and minority students to elicit and may serve as a moderating factor for these students. Finn and Rock (1997) cited research indicating that teachers are more likely to respond positively to students who approach learning in a productive manner. Wehlage and Rutter (1986) reported that high school dropouts were less likely to report positive interactions with teachers. Buriel (1983) found that teachers interacted more positively with successful students, and also observed that Mexican American students were praised

and encouraged less frequently than non-Latino white students. Further, interactions with teachers often communicate to minority students less than positive expectations of their success and of their potential for social mobility, a factor which often contributes to non-resilience in minority students (Alva & Padilla, 1995; Turner et al., 1993). Floyd (1996) described several minority student responses expressing dismay at perceived negative stereotypes. These students expressed hope that teachers could become more sensitive to and aware of cultural and socioeconomic conditions. This is consistent with demands by Wang et al. (1994; 1997) as described above. Floyd also supported communication of high teacher expectations as a way to promote resilience for all students, but for minority students in particular. This is similar to the beliefs of Alva and Padilla, who argued that because of their minority status, the educational resilience of Mexican American students depends on the contextual fit of many sociocultural factors, and that positive teacher expectations and communications are an important protective factor when these factors conflict.

The school environment may be considered a “macro” factor related to educational resilience. A positive student perception of the school, the schooling process, and how a student fits into the school have been shown to be supportive of educational resilience. Catterall (1998) reported a student’s perception of the school’s responsiveness to the student’s needs to be related to educational resilience. The strongest effect was shown when resilience was defined as an improvement in grades; this effect was found both for the entire sample and a Latino sub-sample. The school responsiveness effect was also present when resilience was defined as a change in the confidence in finishing school, but only for the overall sample (the effect in the entire sample may be more

statistical than practical because of the large sample size, $n=4,264$.). Turner et al. (1993) found that college students were more comfortable in school and with the processes one goes through to achieve school success than were high school dropouts. In univariate analyses, they found grades, school alienation, comfort level in school, and relationships with teachers to be predictive of resilience. When these factors were considered with other more global resilience factors in a discriminant analysis, grades in high school and school alienation were predictive of resilience. Waxman et al. (1997) found students' satisfaction with their math class to be a predictor of resilience. Fitting in and perceiving school as a positive environment can be a particularly difficult task for minority students who are responding not only to academic tasks, but often to conflicts between the cultural expectations of their school and home lives. In cases where such conflict exists, minority students develop resiliency either by developing healthy cultural (either bicultural or raceless) identities (Alva & Padilla, 1995; Clark, 1991) or by attending a school which promotes an appropriate diverse climate and curriculum (Wang et al., 1994, 1997; Wang & Kovach, 1995).

A sense of belonging to school can aid in the resilience process. Wang et al. (1994) wrote that the more ways a student feels attached to aspects of a school, the more likely that school serves as a protective factor. Gonzalez and Padilla (1997) also concluded that a sense of belonging to school was a major component in a student's resilience makeup. They found that resilient students had stronger positive ties to school and also placed more value on school. A scale assessing school involvement was found by Alva (1991) to be predictive of educational resilience. This scale was a much stronger predictor when resilience was defined by actual school grades than by test scores.

Pollard (1989) did not find any differences between resilient and non-resilient students on a school involvement measure. An explanation of the conflict in findings between this and the other studies is difficult, as the Pollard measure is described only as including “involvement with peers and in activities in school”, rather than describing specific aspects of the measure. Findings are mixed when assessing involvement with school in terms of extracurricular activities. Catterall (1998) found extracurricular involvement to be significantly related to both types of resilience studied, although not in the Latino subsample when resilience was defined as confidence in graduating high school (see sample considerations above). Geary (1988) concluded through her interviews of resilient students that extracurricular participation can promote a student’s positive engagement in school, and thus enhance a student’s sense of belonging to the school community. Finn and Rock (1997) concluded that extracurricular participation does not have a link to resilience. They found that other measures of school engagement were more important. Horn and Chen (1998) were unable to demonstrate a significant contribution of extracurricular activities to their logistic regression models predicting the presence of educational resilience. It should be noted that all of these studies measured extracurricular participation either as participation or not, or by counts of activities. None measured level of immersion in the activities.

Summary

The few studies identified which examine returning dropouts have studied factors which were associated with dropping out of high school. Those factors most commonly shown to also be predictive of returning to high school are socioeconomic status, ability, grade at dropout, educational expectations and marriage or childbirth. To generalize, a

dropout is more likely to return if (s)he has the ability to do the work, does not have a great amount of work left to do and enjoys a situation which allows a return to school. Although enlightening, this work does not paint a thorough picture of the dropout who returns to school, because it has largely ignored factors associated with positive educational outcomes.

Studies of educational resilience have identified personal factors such as self-esteem and educational aspirations as present in educationally resilient children, along with environmental factors, such as school support, family support and peer support. If the returning dropout is considered an educationally resilient student, factors identified in these studies may provide a broader base from which to explain why some dropouts return to gain high school credentials.

CHAPTER THREE: METHOD

This study is a secondary analysis of existing data. The data were gathered as part of a longitudinal project designed to study substance use and other correlates of high school dropout among Mexican American and non-Latino white dropouts. The first wave of data collection continued for seven consecutive school years and the second wave of data collection is in its last year as of this writing. The sampling design is comparative rather than experimental, as no manipulation or assignment to groups was performed.

The sample for this study consisted of Mexican American and non-Latino white adolescent dropouts from three communities in the southwestern United States: (1) a city with 400,000 people, (2) a mid-sized town with 90,000 people, and (3) a small town with 30,000 people. Dropouts were defined as students in grades 7 – 12 who had not attended school for at least 30 days, had not transferred to another school, were not being home-schooled, and had not contacted the school system about re-admission. This definition is more stringent than that recommended by Morrow (1986), whose standard definition of a dropout calls for a period of unexcused absence from school of two weeks or more. The adoption of a period of absence of one month or longer provides a sufficient period of time to ensure that youth are, in fact, high school dropouts.

Subjects available for study were adolescents from dropout lists provided by school personnel in the aforementioned communities. Once they were identified and contacted, refusal rates were low (4 – 6%), so the resulting sample is a random sample from the population of dropouts from these three communities. Results from this study will be inferred to the population of Mexican American and non-Latino white dropouts in the United States. Although the sampling frame is limited geographically, previous results published from this data set have been comparable to other studies of high school dropouts (e.g., Chavez, Oetting & Swaim, 1994; Chavez, Deffenbacher & Wayman, 1996). Therefore, inferring to this population from the present sample is appropriate.

Measures

All survey items used in this study were embedded in a larger survey which took approximately one and a half hours to complete. Nearly all surveys were completed in English with less than 1% completed in Spanish.

Dependent variable. Graduation from high school or possession of a GED were based on self-report measures.

Demographic information. Ethnicity was determined from school records. Gender and socioeconomic status (SES) were based on self-reports from a demographic section of the survey. SES was a composite measure of the following items: education of mother, education of father (possible responses of 6th – 12th grade, 1 – 4 years of college, or 5 or more years of college were coded as 6 – 17), “do your parents have good jobs” (possible responses “they do not work”, “poor”, “not too good”, “good”, or “very good”), “what is your parents’ income” (possible responses were “very low”, “low”, “average”, “high”, or “very high”) and “does your family have enough money to buy the things you

want” (possible responses “almost never”, “some of the time”, “yes, most of the time”, or “yes, all of the time”). The Cronbach alpha reliability of this scale was .65. Since these items were not uniform in range of possible answers, responses were standardized before being summed to create the composite.

Variables from previous returning dropout literature. Achievement test scores, age at dropout, grade at dropout, and grade point average were obtained from high school records. Achievement test scores were used as a proxy for ability (or “school capability”), which was measured by averaging mathematics, reading and vocabulary scores (Kaufman, 1988) for each participant. Data were collected on achievement tests administered at many times during the participant’s school career, but due to inconsistent record keeping, students transferring from districts using different procedures, etc., neither the time frame nor the quantity of test scores was uniform across participants. Thus, the highest available mathematics, reading and vocabulary scores were used. This not only provided consistency, but reduced noise in the test scores as measures of school capability – few students would attain a test score which was a higher representation of their true capability.

Whether the participant had or was expecting children was based on self-reports, as was teacher caring. To assess a participant’s feeling of teacher caring, an item asking “how much did teachers care about you during this last year” was included on the survey, with possible responses of “not at all”, “not much”, “some”, and “a lot”. Marriage was not used in this analysis because only three of the participants reported being married at the time of dropout.

Personal factors. Self-esteem was assessed through three scales measuring three dimensions of self-esteem – competence, self-confidence, and social acceptance. The competence scale was made up of three summed items, “I am good at games”, “I am intelligent”, and “I am able to do things well”, and had an alpha reliability of .62. Self-confidence was measured by summing four items: “I like myself”, “I am good looking”, “I am lucky”, and “I am proud of myself”. The alpha reliability of this scale was .69. Social acceptance was estimated by summing the following four measures: “other people my age like me”, “other people my age ask me to do things with them”, “other people my age like to be with me”, and “people like me”. The alpha reliability of this scale was .77. Possible responses for each item are “no”, “not much”, “some”, and “a lot”.

Educational aspirations were assessed by two independent questions, “will you graduate from high school” and “are you still a student in school”. Possible responses for the former were “I am sure that I will graduate”, “good chance”, “fair chance”, “poor chance”, and “no chance that I will graduate”, while the latter was a yes/no question. Optimism for the future was assessed by a three-item scale created by summing the following items: “in the future, will you get what you want out of life”, “in the future (about 10 years after high school), do you think you will be able to get a good job”, and “in the future, will you be able to earn enough to buy the things you want”. Possible responses were “sure that I will”, “good chance”, “fair chance”, “poor chance”, or “no chance that I will”. This scale had an alpha reliability of .84.

Family factors. Family school support was a two-item scale obtained by summing the questions, “does your family care if you graduate high school” and “would your family try to help you stay in school”. The alpha reliability for this scale was .69.

Family caring was assessed by a two-item scale comprised of the question “does your family care about you”, and the question, “does your family care what you do”, with an alpha reliability of .79. All items had possible responses “not at all”, “not much”, “some”, and “a lot”.

Peer factors. Alienation from peers was measured by a four-item scale comprised of the following items: “other people my age hate me”, “other people my age make fun of me”, “I am left out of things”, and “people look down on me”. These items had possible responses of “no”, “not much”, “some” and “a lot”. The alpha reliability for this scale was .69. General peer support was measured by a single item, reading “how close do you feel to your friends”. This item also had possible responses of “no”, “not much”, “some”, and “a lot”. Peer educational support was taken by combining responses from two variables. The first variable allowed the participant to identify if (s)he had a group of friends. If this answer was yes, the second question was answered, which reads, “how many of your close friends are in school,” and took on the following values: “no friends in school”, “a few friends in school”, “most friends in school”, or “all friends in school”. In the present study, these two items were combined to produce a peer educational support item with categories “no friends”, “no friends in school”, “a few friends in school”, and “most or all friends in school”.

School factors. Extracurricular involvement was evaluated by school record identification of the participant’s involvement in athletics, band/choir/non-required music, and other extracurricular activities. A measure of school liking was provided by a two-item scale created by summing the participant's response to the items “I like school” and “school is fun”, with an alpha reliability of .82. Relationship with teachers was

assessed by a two-item scale which summed the items “my teachers like me” and “I like my teachers”, with an alpha reliability of .83. A student's perception of school success was measured with a two item scale, the items being, “how well are you doing in school” and “do you get good grades”, with an alpha reliability of .89. As described above, teacher caring was assessed with one item, “how much did teachers care about you during this last year”. Supportive school environment was based on the item, “if you needed help in school, how much could you get”. All the survey items discussed in this section had possible responses of “no”, “not much”, “some”, and “a lot”, with the exception the school success scale, whose items could be answered as “bad”, “not too good”, “OK”, and “very good”.

Procedure

For the first wave of data collection, dropouts were chosen randomly from monthly lists of dropouts, provided by the school district. Field workers, employed by the district and fluent in English and Spanish, first contacted potential participants. After the project was described, potential participants were asked if they wished to be involved. If they expressed interest and were over 18, they completed consent forms. If they were under 18, parents were contacted, the project was fully explained, and written parental consent was obtained. Those who refused were replaced in the sampling frame by another randomly sampled dropout.

Following informed consent, arrangements were then made for an individual administration of the survey. The survey was completed at school or at another public building such as a library, and participants were given as much time as needed to complete the survey. The survey administrator gave participants the survey, answered

general questions and helped subjects with reading problems, but did not see participant responses. When the survey was complete, the participant put it in a large envelope and sealed it personally. Based on the participant's choice, the survey was mailed to the research office either by the survey administrator or was taken immediately to a mailbox by the participant and survey administrator. These steps assured confidentiality; at no time was an unsealed, completed survey out of the participant's sight. Participants received \$10 – \$25 for completion of the survey, with higher amounts reflecting the greater travel and difficulty in arranging for the survey.

Accuracy and reliability of data were assured as surveys were subjected to 40 computer checks for inconsistency or exaggeration (e.g., endorsing a fake drug, claiming daily use of three or four drugs). Only 2% of initial surveys failed either review and were not replaced.

Four years after the first assessment, follow-up of dropouts 18 or older began, with an average time to completion of the follow-up survey of 4.29 years. Follow-up contact was first attempted through the address given at the first assessment. If this failed, staff contacted three people (e.g., parents, relatives, good friends) whom the participant indicated at the time of informed consent would always know where the participant lived. If these efforts failed, public records such as phone books, motor vehicle records, etc., were checked to locate an address. A total of 519 (49%) of the 1071 original participants were successfully followed up at the time of the present study. Once the individual was contacted and gave his/her consent, survey administration was parallel to the first administration.

Data Analysis

Multiple imputation. Missing data presented a potential problem in this project, since not all participants had responded to the second wave of data collection. Typically, data such as these are analyzed by using only the cases with fully completed responses in both waves on all relevant variables, discarding incomplete responses. Treating the data in this fashion not only results in a reduction of sample size, but more importantly, implicitly assumes the group of participants who answered all questions to be similar to the group who did not. Should this assumption not hold true, sample bias results. Specific to the present work, analyzing only subjects who were followed up presumes these dropouts to have similar characteristics to the dropouts who were not successfully located or who refused to participate. Further, since the analyses described below globally contain 28 variables involving 62 items, inclusion of only those subjects who answered all 62 items would result in a substantially reduced sample size. To address issues of bias and power, multiple imputation was used to account for the data missing in this study (Rubin, 1987; Schafer, 1997). Multiple imputation has been shown to be an appropriate and robust method for estimating missing data in social science settings (Graham, Hofer, Donaldson, MacKinnon, & Schafer, 1997).

In multiple imputation, missing values for any variable are predicted using existing values from other variables. The predicted values, called “imputes”, are substituted for the missing values, resulting in a full data set called an “imputed data set”. This process is performed multiple times; results from the imputed data sets are combined for the analysis.

Multiple imputation accounts for missing data by restoring not only the natural variability in the missing data, but also by incorporating the uncertainty caused by estimating missing data. Maintaining the original variability of the missing data is done by creating values which are modeled as a function of variables correlated with the missing data and with the causes of missingness. Random errors from a normal distribution are added to these predicted values to produce the imputed values. Imputed values produced from an imputation model are not intended to be “guesses” as to what a particular missing value might be; rather, this modeling is intended to create an imputed data set which maintains the overall variability in the population while preserving relationships with other variables.

To incorporate the uncertainty associated with estimating missing data, multiple models (K , typically between 3 and 10) are drawn from the distribution of plausible models for the population. These models are used to produce K imputed data sets. Parameter estimates are then obtained by combining these K imputed data sets.

The parameter of interest in the current study is the log odds, denoted θ .

Parameter estimates of θ are computed by averaging the point estimates $\hat{\theta}_k$ obtained

from the imputed data sets thusly: $\bar{\theta} = \frac{1}{10} \sum_{k=1}^{10} \hat{\theta}_k$. The total variance of $\bar{\theta}$ is given by the

formula $T = \bar{W} + (1 + K^{-1})B$, where $\bar{W} = K^{-1} \sum_{k=1}^K W_k$, the average of the K imputed

variances, and $B = (K - 1)^{-1} \sum_{k=1}^K (\theta_k - \bar{\theta})^2$, the between-imputation variance of the

estimates of θ . Thus, the total variance of $\bar{\theta}$ is made up of a within-imputation

component, \bar{W} , which estimates the natural variability in the data, and a between-

imputation component, B , which estimates uncertainty caused by estimating missing data (Rubin, 1987). Confidence intervals (95%) for θ are given by the usual formula, $\bar{\theta} \pm t_{0.025, df}(T)$, with confidence intervals for odds ratios obtained by exponentiating the bounds of the confidence intervals for θ . Multiple imputation and combination of parameter estimates was performed using the NORM software package (Schafer, 1999).

Multiple imputation is an appropriate method for treating missing data if correlates of the dependent variable are considered and if the causes of the missing data are measured and available for analysis. To this end, it is important the imputation model is carefully chosen, ensuring that biases introduced by missingness are eliminated. The variables which were included in the logistic regression models were necessarily included in the imputation modeling. Also utilized were items correlated with missingness: location (city or mid-sized community), substance involvement, whether the participant had ever been suspended from school, whether the participant moved into the district from another district, current living arrangements, and whether the participant's family rented or owned their house. The data set used in the present study offers a unique opportunity to for future research to evaluate the quality of this imputation model, since participants who are added to the data set from this point forward are participants who were difficult to find or who had earlier refused to participate in the follow-up wave of data collection.

Logistic Regression Modeling. The research questions in the present study were answered through logistic regression analysis. Conceptually, logistic regression is the same as ordinary regression, except the dependent variable is dichotomous. Instead of

means, the outcome is interpreted in terms of the “odds”. Comparisons in logistic regression are made through the use of “odds ratios”.

The odds is the ratio of the number of expected participants in one outcome to the number expected in the other. For illustration, consider that twelve females have high school degrees and two do not. The odds for female degree attainment would be 12/2, or 6/1. It is said that a female participant is six times as likely to obtain a high school degree as not, or that the odds of degree attainment is six to one. Similarly, consider that ten male participants attain high school degrees and five do not. In this case, the odds of degree attainment is figured as 10/5, or 2/1. It is said that males are twice as likely to obtain a degree as not. Comparisons involving independent variables are made using the odds ratio, which is the ratio of the odds for one level to the odds for another level. In this example, taking the ratio of female odds to male odds yields an odds ratio of 6/2, or 3/1. Females are said to be three times more likely to gain degrees than are males.

The present study answered research questions by defining two separate dichotomies as dependent variables – degree/no degree, and diploma/GED. Thus, one set of logistic regression models was estimated to discover factors which significantly predict attainment of a high school education (either a diploma or GED) or attainment of nothing. Then, the sample was restricted to participants who have attained a high school education, and models were estimated which distinguish between possession of a diploma versus possession of a GED.

The analysis strategy was as follows: for each dependent variable, five separate logistic regression models (herein referred to as “submodels”) were estimated. One submodel considered factors from previous dropout literature, another submodel

considered personal factors from educational resilience, another submodel considered school factors from educational resilience, another submodel considered peer factors from educational resilience, and another submodel considered family factors from educational resilience. These submodels are created to respond to Research Questions One and Two. All submodels included ethnicity, gender, and SES, since these variables are almost always considered in both return research and educational resilience research. Significant factors from each submodel were then considered jointly in an overall model, in response to Research Questions Three and Four. This process occurred for both dependent variables, serving the dual role of data reduction and answering research questions.

In each model or submodel, the most parsimonious group of predictive factors was selected by a hierarchical backward selection procedure. This empirical method was chosen over a theoretical one because not enough is known about the association of the factors reviewed for this study to justify a theoretical order of entry – none of the reviewed studies examined these variables in tandem, nor did any of the reviewed studies account for sample bias in the manner of the present study. By using this stepwise selection process, the present study provides an empirical model upon which future research can build.

The hierarchical backward selection process was conducted as follows: in each model or submodel, all main effects were examined, along with two-way interactions involving ethnicity, gender and SES (Other interactions were too numerous to examine in one analysis, and no theoretical base was available to justify inclusion or exclusion of particular interactions. The demographic variables ethnicity, gender and SES are the

most commonly included variables in both return research and educational resilience research and are therefore the most pertinent to include in interactions). From this “full” model, interactions were examined separately for significance at the .05 level, using the Wald statistic. The interaction with the smallest Wald statistic was eliminated from the model, then the model was re-estimated with the remaining main effects and interactions. This process was repeated until only main effects and significant interactions remained, if any interactions were significant. If interactions were significant, the main effects supporting these interactions were necessarily retained in the model. The process then was performed similarly for main effects not involved in significant interactions. This process was repeated until the remaining model consisted only of significant factors. These factors were then retained as the most parsimonious set of factors which described the outcome.

For each model, slope estimates (β s) and standard deviations of slope estimates were obtained by performing a separate logistic regression analysis on each imputed data set. These slope estimates and standard errors were then combined as described in “Multiple imputation” above, producing one set of slope estimates and standard deviations, similar in appearance to what would result from a logistic regression analysis which did not use multiple imputation. Wald statistics were computed and significance was assessed using these combined estimates.

It should be noted that other backward model-selection methods, such as the testing of blocks of factors using the log-likelihood statistic, are often recommended. However, the use of these methods within multiple imputation involved calculations that

were precluded with the software utilized in the present study. For a discussion of these methods within multiple imputation, see Schafer (1997).

CHAPTER FOUR: RESULTS

Sample Demographics

Participants were 1071 adolescents who quit high school at some point during their schooling. Because of budget constraints, the small town was eliminated from the follow-up sample. Of these participants, 204 (19%) were non-Latino white males, 163 (15%) were non-Latino white females, 400 (37%) were Mexican American males, and 304 (28%) were Mexican American females. The urban location contributed 795 (74%) participants, while 276 (26%) were from the mid-sized location. The age at dropout of these participants ranged from 13 to 21, with 6 participants (1%) having dropped out in 7th grade, 24 (2%) in 8th grade, 251 (23%) in 9th grade, 314 (29%) in 10th grade, 299 (28%) in 11th grade, and 177 (17%) in 12th grade. Note that a full 26% of the participants in the present study dropped out at 9th grade or earlier, a group previously not included in studies of returning dropouts.

Follow-up surveys were completed by 519 (49%) of the participants. Of these, 508 (47%) responded to the items regarding high school completion. There were 217 (43%) with no high school credentials, 175 (34 %) with GED certificates, and 116 (23%) with a high school diploma. Table 1 gives breakdowns of degree attainment for ethnicity and gender.

Table 1
Description of Degree Attainment, for Ethnicity and Gender

	No Degree	GED	Diploma
Male	114 (43%)	97 (36%)	56 (21%)
Female	103 (43%)	78 (32%)	60 (25%)
Non-Latino White	55 (34%)	34 (42%)	39 (24%)
Mexican American	162 (47%)	107 (31%)	77 (22%)

Table 2 gives means and standard deviations for the continuous variables considered in this study. Categorical variables are included with a percent response to one category. The last column of Table 2 gives the percent of missing data for each variable considered in the present study. Possession of high school credentials was the only variable from the second wave of data utilized in this study. Accordingly, this variable has the greatest proportion of missing values. Variables measuring family school support, teacher caring and supportive school environment were not included in the final two years of data collection, so these variables also have a high percentage of missing responses. Because of incomplete records, achievement tests were not always available for these students, resulting in the high percentage of missing data for this variable. Finally, since the socioeconomic status measure included questions about both parents, many students who did not have two parents left blank the item inquiring about the absent parent. Multiple imputation was used to account for missing data in these and other variables.

Table 2
Description of Variables Used in the Present Study

<u>Continuous Variables</u>				
Factor	Mean	Standard Deviation	Valid N	Percent Missing
Grade at dropout	10.31	1.10	1071	0.0%
Age at dropout	16.61	1.24	1061	0.9%
Family caring	7.42	1.07	1042	2.7%
School liking	4.91	1.75	1041	2.8%
Intent to graduate	3.46	1.51	1035	3.4%
Teacher relationship	5.71	1.56	1029	3.9%
Optimism	12.42	2.37	1026	4.2%
Grade point average	1.21	0.82	1023	4.5%
Peer support	3.24	0.80	1023	4.5%
Social acceptance	13.16	2.34	1021	4.7%
Competence	9.49	1.77	1019	4.9%
Alienation from friends	7.06	2.46	1016	5.1%
School success	5.07	1.61	1009	5.8%
Self confidence	12.30	2.32	996	7.0%
SES	0.05	0.67	844	21.2%
Test scores	54.15	23.45	807	24.6%
Supportive school environment	1.85	0.81	801	25.2%
Family school support	7.34	1.15	795	25.8%
Teacher caring	2.71	1.04	790	26.2%

<u>Categorical Variables</u>			
Factor	Percent "yes"	Valid N	Percent Missing
Extracurricular activities	59.0%	1061	0.9%
Still a student in school	32.9%	1043	2.6%
Friends in school	77.1%	1031	3.7%
Have or expecting children	18.0%	1027	4.1%

Table 3 gives means or percentages for each variable, broken down by respondents and non-respondents (participants with and without valid responses). Using statistical significance as a guide ($\alpha = .10$), Mexican American participants and female participants were overrepresented in the follow-up sample. Mexican American participants comprised 68.6% of the respondents, as opposed to 63.0% of the

nonrespondents, and 47.0% of the respondents were female, as opposed to 40.4% of the nonrespondents. Respondents scored slightly higher on achievement tests and were slightly younger. Respondents also reported better support networks, in that they felt more socially accepted and closer to their friends, had more friends in school, were more often involved in extracurricular activities, and felt more family caring.

Table 3
Means and Percentages, by Respondents and Non-respondents

Factor	Respondent	Non-respondent	p
Ethnicity	68.6% MA	63.0% MA	0.03
Gender	47.0% female	40.4% female	0.06
Socioeconomic status	0.04	0.07	0.48
Achievement test scores	55.84	52.35	0.03
Age at dropout	16.54	16.67	0.09
Grade at dropout	10.30	10.32	0.79
Grade point average	1.23	1.20	0.54
Have or expecting children	18.2% yes	17.1% yes	0.64
Teacher caring	2.70	2.73	0.69
Competence	9.47	9.50	0.83
Self confidence	12.39	12.21	0.23
Social acceptance	13.39	12.95	0.00
Intent to graduate	3.47	3.45	0.91
Still student in school	32.2% yes	33.7% yes	0.61
Optimism	12.36	12.47	0.46
Family school support	7.37	7.31	0.43
Family caring	7.49	7.36	0.07
Alienation	6.98	7.13	0.35
Close to friends	3.30	3.19	0.03
Friends in school	79.7% yes	74.2% yes	0.03
Extracurricular involvement	61.6% yes	56.6% yes	0.10
School liking	4.91	4.92	0.95
Teacher relationship	5.75	5.67	0.43
School success	5.02	5.12	0.30
Supportive school environment	1.85	1.84	0.86

Analyses of Research Questions

Introduction

Since the variables of interest were dichotomous (degree/no and diploma/GED), logistic regression was an appropriate analysis. Logistic regression is analogous to ordinary regression, but with a dichotomous dependent variable (see Chapter Three for a more detailed description of logistic regression). For each logistic regression analysis in this section, predicted odds ratios are presented. Odds ratios are used to compare levels of independent variables (see Chapter Three). Each estimate of an odds ratio is accompanied by a 95% confidence interval which describes “believable values” for the true odds ratio – upper and lower limits which we are 95% sure hold the true odds ratio. Confidence intervals enable a statement of the magnitude of the odds ratio, beyond what statistical significance describes.

All estimates were obtained using multiple imputation, a method which accounts for information lost through missing data. Multiple imputation was necessary in the present study. Not only was it necessary to use methods to account for sample bias, but use of complete-case analysis on the large number of variables used in this study would have resulted in only a small fraction of the entire sample usable for the analysis.

In multiple imputation, each missing data point is estimated (imputed), using valid data from other variables. Each estimate is substituted for the missing data point, with the result being a complete data set with no missing values. This process is repeated many times, producing many different data sets; these artificially completed data sets are known as “imputed data sets”.

After creating the imputed data sets, the logistic regression analyses were performed separately on each data set, yielding a distinct and separate set of statistics for each data set. These statistics were then combined to give one overall set of results from which inference is made. Chapter Three describes multiple imputation in more detail.

Typically, no more than ten data sets are needed for multiple imputation. However, preliminary examination of results using 10 imputed data sets indicated a greater amount of imputed data was needed to ensure stability of the estimates and to guarantee that variability due to imputation would be properly estimated. This is analogous to the practice of drawing a large sample to ensure that results will properly infer to the population. Therefore, 20 imputed data sets were used.

For each model, backward selection was used to identify a parsimonious set of variables significantly related to the outcome measure (see Chapter Three). Linearity diagnostics indicated that the assumption that each variable was linear in the logit was a plausible one. This assessment was done by examining each variable univariately, plotting the variable against the logit.

Tables 4 through 12 give the estimated odds ratios with 95% confidence intervals for significant factors in each model. Estimates of odds ratios are given in terms of the increase in odds for one unit change of the independent variable.

Presentation of the results is done in four sections. The first section presents overall estimates of the distribution of degree attainment. The second section, in response to Research Question One, presents results from analyses considering only significant factors from previous returning literature. The third section responds to Research Question Two and presents analyses which only considered factors from

educational resilience. The fourth section answers Research Questions Three and Four, and presents models estimated using significant factors in submodels estimated from previous return literature and educational resilience literature.

Distribution of Degree Attainment

Combining estimates of degree attainment across the twenty imputed data sets estimated that 40.8% of high school dropouts had no degree, 35.0% had a GED certificate, and 24.2% had a high school diploma.

Studies of Returning Dropouts

Research Question One asks how factors shown significant in previous studies on returning dropouts describe attainment of high school credentials, when studied in tandem. To answer this question, two logistic regression models were estimated and parsimonious sets of factors were chosen using the selection procedure described in Chapter Three. The first model compared participants with a degree (either diploma or GED) to those with no degree. In the second model, the sample was isolated to participants who had received high school credentials, in order to compare those with a high school diploma to those with a GED. The next two sections describe results from these models.

Degree vs. no degree. Socioeconomic status, test scores and age at dropout were the only variables shown to be significantly related to returning for a degree. Table 4 describes this model. Socioeconomic status was positively associated with degree attainment, with a one point increase on the SES scale associated with an increase in the odds of returning of 1.34. A participant's test scores were positively related to degree attainment. A one point increase in average test score increased the odds of gaining a

high school degree by a factor of 1.02, while a 10 point increase in test scores increased the odds of gaining a high school degree by a factor of 1.21 ($1.21 = 1.02^{10}$). Participants who dropped out as older adolescents were more likely to gain some form of high school credentials. For every year of age, the odds a participant would return for a degree was increased by 1.28. Thus, a participant who dropped out at age 18 was 2.12 times more likely to get a degree than a participant who dropped out at age 15 ($2.12 = 1.28^3$).

Table 4
Final Model Describing Degree Attainment – Variables From Previous Dropout Literature

Factor	95% Confidence Interval			β	se(β)	t	df	p
	Odds Ratio	Lower Bound	Upper Bound					
SES	1.34	1.01	1.79	0.29	0.145	2.03	91	0.045
Test scores	1.02	1.01	1.03	0.02	0.005	4.07	50	0.000
Age at dropout	1.28	1.12	1.47	0.25	0.069	3.57	117	0.001
Intercept	0.01	0.00	0.10	-4.68	1.199	-3.90	104	0.000

Note. Dependent variable is degree/no degree.

High school diploma vs. GED. Socioeconomic status, test scores, children and grade at dropout significantly predicted the choice between a diploma or GED. Table 5 displays these results. Socioeconomic status was positively associated with GED attainment. A one-point increase in the SES score was associated with an increase of 1.47 in the odds of GED attainment (an increase of .68 in the odds of diploma attainment). Higher test scores were also associated with GED attainment. A one point increase in test scores was associated with an increase in the odds of GED attainment by a factor of 1.02, (an increase of .98 in the odds of diploma attainment) while a 10-point increase raised these odds by a factor of 1.22. Having or expecting a child at the time of dropout was also associated with GED attainment. Degree holders having or expecting

children were 1.92 times as likely to have a GED than a diploma (.52 times as likely to have a diploma than a GED). The amount of school a participant completed was a strong predictor of the type of degree held. A participant was approximately twice as likely to have a diploma for each increase in grade at dropout. To illustrate, someone who dropped out in 11th grade was estimated to be 7.46 times more likely to have a diploma than someone who dropped out in 8th grade.

Table 5
Final Model Describing Choice of Degree – Variables From Previous Dropout Literature

Factor	Odds Ratio	95% Confidence Interval		β	se(β)	t	df	p
		Lower Bound	Upper Bound					
SES	0.68	0.47	0.99	-0.38	0.188	-2.01	93	0.047
Test scores	0.98	0.97	0.99	-0.02	0.006	-3.11	68	0.003
Grade at dropout	1.95	1.52	2.51	0.67	0.126	5.31	79	0.000
Children	0.52	0.28	0.95	-0.65	0.305	-2.14	111	0.035
Intercept	0.00	0.00	0.03	-6.26	1.296	-4.83	79	0.000

Note. Dependent variable is diploma/GED.

Note. Children is Y/N.

Factors Associated with Educational Resilience

Research Question Two asks how factors associated with educational resilience explain returning for a high school degree. To answer this question, eight logistic regression models were estimated, four predicting degree attainment versus no degree attainment, and four predicting diploma attainment versus GED attainment. For each dependent variable, the four logistic regression models consider separately variables from the personal, peer, school and family dimensions of educational resilience. Variables for the final models were chosen using the selection procedure described in Chapter Three.

Degree vs. no degree. Table 6 displays results for the model which considered personal factors. Socioeconomic status discerned degree holders from those with no

degree, with a one point increase in the SES score associated with an increase in the odds of degree attainment of 1.55. Competence, a component of self-esteem, was also positively related to degree attainment. A one-point increase in the competence scale was associated with a 1.11 increase in the odds of gaining a degree. Thus, participants at the high end of the competence measure (12) were 2.69 times more likely to gain degrees than those at the low end (3). Dropouts who claimed to still be a student in school were 1.50 times more likely to eventually get a degree.

Table 6
Final Model Describing Degree Attainment – Personal Factors

Factor	Odds Ratio	95% Confidence Interval		β	se(β)	t	df	p
		Lower Bound	Upper Bound					
SES	1.55	1.17	2.06	0.44	0.142	3.07	87	0.003
Competence	1.11	1.01	1.23	0.11	0.050	2.11	80	0.038
Still a student in school	1.50	1.02	2.20	0.41	0.193	2.11	78	0.038
Intercept	0.46	0.18	1.17	-0.77	0.469	-1.64	97	0.103

Note. Dependent variable is degree/no degree.

Note. Still a student in school is Y/N.

Table 7 displays results for the peer factor model. When controlling for peer factors, SES was similarly related to degree attainment, with a change of one SES point associated with a change in odds of degree attainment of 1.54. Of the peer items, only peer educational support, measured as presence of friends in school, was found to be significant. This variable was originally included as a four-level categorical variable. The final model showed this factor to be significant, but indicated that collapsing the variable into a yes/no dichotomy (yes = friends in school, no = no friends or no friends in school) would be equally as informative. The model was re-estimated with this new dichotomous variable (controlling for SES) and indicated that dropouts with friends in

school are 1.51 times more likely to gain high school degrees than those who have no friends or who have friends who are not in school.

Table 7
Final Model Describing Degree Attainment – Peer Factors

Factor	Odds Ratio	95% Confidence Interval		β	se(β)	t	df	p
		Lower Bound	Upper Bound					
SES	1.54	1.17	2.02	0.43	0.138	3.11	96	0.002
Friends in school	1.51	1.01	2.26	0.41	0.202	2.05	87	0.043
Intercept	1.05	0.74	1.50	0.05	0.179	0.29	81	0.771

Note. Dependent variable is degree/no degree.

Note. Friends in school is Y/N.

Table 8 displays results for the school factors submodel. SES was again significantly related to degree attainment, but the relationship was weaker than in the personal and peer submodels. When controlling for school factors, increasing one point on the SES scale is associated with an increase in degree attainment odds of 1.40. The student's perception of his/her school success was positively related to degree attainment such that a one-point increase in school success was associated with an increase of 1.17 in the odds of gaining a degree. Thus, those participants who scored at the high end of this scale (8) were 2.61 times more likely to get a degree than those who scored at the low end (2). Also, the relationship between degree attainment and participants' rating of their relationship with their teachers was significant, but differed according to ethnicity. Positive teacher relationships were more influential for non-Latino white participants than Mexican American participants. Non-Latino white participants who rated their relationship with teachers at the high end of the scale (a score of 8) were more than five times as likely (5.32) to gain degrees than those on the low end (a score of 2). This odds ratio was only 1.24 for Mexican American participants.

Table 8
Final Model Describing Degree Attainment – School Factors

Factor	95% Confidence Interval			β	se(β)	t	df	p
	Odds Ratio	Lower Bound	Upper Bound					
Ethnicity	0.39	0.10	1.57	-0.95	0.704	-1.34	89	0.182
SES	1.40	1.02	1.91	0.33	0.158	2.11	83	0.038
Teacher relationship	1.04	0.90	1.19	0.04	0.071	0.51	105	0.608
School success	1.17	1.03	1.33	0.16	0.065	2.46	66	0.016
Ethnicity by Teacher relationship	1.27	1.01	1.61	0.24	0.119	2.04	97	0.045
Intercept	0.47	0.19	1.16	-0.76	0.459	-1.66	71	0.101

Note. Dependent variable is degree/no degree.

Note. Ethnicity is MA/nLw.

None of the family factors considered were significantly associated with degree attainment.

High school diploma vs. GED. Table 9 displays results from the personal factors submodel. Three personal factors predicted who gets diplomas and who gets GEDs. One component of self-esteem, self-confidence, was positively associated with GED attainment. Each unit increase in self-confidence was associated with an increase in the odds of gaining a GED by 1.15 (an increase of .87 in the odds of diploma attainment), so a participant who scored at the high end of the self-confidence scale (16) was 5.37 times more likely to hold a GED than a person at the low end of this scale (4). Educational aspirations, measured both by intent to graduate and by considering one's self still in school, discriminated diploma-holders from GED-holders. A degree-holder who at the time of dropping out still considered her/himself a student in school was 1.87 times as likely to have a high school diploma than a GED. A one level increase in the response to the surety with which a student believed (s)he would graduate high school was associated with an 1.47 increase in the odds of having a high school diploma. Thus, students who

were “sure” that they would graduate from high school were 4.67 times more likely to have a diploma than students who said there was “no chance” they would graduate.

Table 9
Final Model Describing Choice of Degree – Personal Factors

Factor	Odds Ratio	95% Confidence Interval		β	se(β)	t	df	p
		Lower Bound	Upper Bound					
Self confidence	0.87	0.78	0.96	-0.14	0.051	-2.81	109	0.006
Intent to graduate	1.47	1.22	1.78	0.39	0.095	4.05	77	0.000
Still a student in school	1.87	1.16	3.02	0.63	0.241	2.61	133	0.010
Intercept	0.79	0.18	3.53	-0.23	0.750	-0.31	67	0.755

Note. Dependent variable is diploma/GED.

Note. Still a student in school is Y/N.

No factors from the peer subgroup were identified as being significantly related to the type of degree held.

Table 10 displays results from the school factors submodel. Of the school factors, only a participant’s perception of her/his school success discriminated obtaining a diploma from a GED. Those dropouts who saw themselves as successful were more likely to have diplomas. A one point increase on the school success scale was associated with a 1.23 increase in the odds of having a diploma, so a participant who scored highest on this scale (8) was 3.41 times more likely to have a diploma than a participant who scored lowest on the scale (2).

Table 10
Final Model Describing Choice of Degree – School Factors

Factor	Odds Ratio	95% Confidence Interval		β	se(β)	t	df	p
		Lower Bound	Upper Bound					
School success	1.23	1.07	1.41	0.20	0.071	2.90	112	0.005
Intercept	0.23	0.10	0.53	-1.46	0.417	-3.50	84	0.001

Note. Dependent variable is diploma/GED.

No factors from the family subgroup were identified as significantly related to the type of degree held.

Using factors identified as significant in the submodels for previous dropout research and educational resilience, overall models were estimated to discern the most parsimonious set of factors which describe degree attainment and the choice of which degree to obtain. The next section discusses these models.

Overall Models

Research Question Four asks which set of factors best explains the phenomenon of returning for a high school degree. Research Question Three asks how the study of factors from educational resilience adds to the knowledge from the research base on returning dropouts. Results from the final models, estimated considering factors significant in the submodels, answer both of these questions. Variables for the final models were chosen using the selection procedure described in Chapter Three.

Degree vs. no degree. Table 11 displays results from this model. Test scores, age at dropout, school success and friends in school were significantly associated with getting a degree.

Table 11
Final Model Describing Degree Attainment – Significant Factors From Submodels

Factor	Odds Ratio	95% Confidence Interval		β	se(β)	t	df	p
		Lower Bound	Upper Bound					
Test scores	1.02	1.01	1.03	0.02	0.005	4.22	48	0.000
Age at dropout	1.28	1.12	1.46	0.24	0.070	3.69	140	0.000
School success	1.20	1.05	1.36	0.18	0.064	2.70	56	0.009
Friends in school	1.70	1.12	2.59	0.53	0.275	2.05	74	0.043
Intercept	0.00	0.00	0.03	-5.99	1.281	-4.78	99	0.000

Note. Dependent variable is degree/no degree.

Note. Friends in school is Y/N.

Test scores and age were associated with degree attainment in the same magnitude as they were in the submodels (odds ratios of 1.02 and 1.28, respectively). The school success effect increased slightly when considering other significant variables, with an increase of one unit in the school success scale associated with an increase of 1.20 in the odds of gaining a degree. In controlling for these other variables, the strength of the effect of friends in school raised considerably, estimated in this model to be 1.70.

High school diploma vs. GED. Table 12 displays the results from this model.

Test scores, grade at dropout, self-confidence, intent to graduate and self-identification as a student were statistically significant. The effect of test scores remained the same, with an estimated odds ratio of .98. Consideration of other significant variables slightly weakened the effects of self-confidence, intent to graduate and self-identification over effects found in the submodels (odds ratios of .85, 1.45, and 1.78, respectively). The effect of grade at dropout was weakened considerably over that in the submodel, resulting in an estimated odds ratios of 1.73.

Table 12
Final Model Describing Choice of Degree – Significant Factors from Submodels

Factor	Odds Ratio	95% Confidence Interval		β	se(β)	t	df	p
		Lower Bound	Upper Bound					
Test scores	0.98	0.97	0.99	-0.02	0.006	-3.39	68	0.001
Grade at dropout	1.73	1.33	2.26	0.55	0.132	4.17	74	0.000
Self confidence	0.85	0.76	0.95	-0.17	0.056	-2.99	97	0.004
Intent to graduate	1.45	1.19	1.76	0.37	0.099	3.75	81	0.000
Still a student in school	1.78	1.06	2.98	0.57	0.262	2.19	112	0.031
Intercept	0.01	0.00	0.20	-4.54	1.463	-3.11	73	0.003

Note. Dependent variable is diploma/GED.

Note. Still a student in school is Y/N.

CHAPTER FIVE: DISCUSSION

Summary of Results

The present study was able to illuminate issues surrounding degree attainment in high school dropouts, within the framework of educational resilience. To do this, variables were identified which distinguished between dropouts with any type of degree and dropouts with no degree. Further, variables were identified which distinguished between dropouts with high school diplomas and dropouts with GED certificates. An analytic strength of this study was the use of multiple imputation to account for bias due to missing subjects, something no other study of returning dropouts has done. The study also included students who left school as early as seventh grade, something no previous study had done. Consequently, the present study provides for the first time return analysis which is unbiased by nonresponse and grade at dropout, in addition to conceptualizing returning dropouts as educationally resilient students. This has resulted in the most comprehensive comparison to date of dropouts with and without degrees.

Previous studies on returning dropouts identified variables significantly related to returning to high school, but questions remained regarding the overall importance of these factors, since no study had considered all in tandem. Therefore, one aim of this study was to clarify the importance of these factors. Socioeconomic status, achievement test scores and age at dropout discriminated between dropouts with and without degrees.

Analyses further showed that dropouts of higher socioeconomic status, with higher test scores, and who dropped out having or expecting children were more likely to have GED certificates than high school diplomas, while those who dropped out in later grades were more likely to have diplomas than GEDs. Commonly identified factors such as ethnicity and gender were not significantly associated with either dependent measure.

No previous study considered the returning dropout as a resilient student, so another aim of this study was to determine whether factors shown to be present in educationally resilient students were predictive of degree attainment. Factors were separated into personal, peer, school and family variables. No family variables were significantly associated with degree attainment, nor did they separate diploma holders from GED holders. Personal factors measuring self-esteem and educational aspirations predicted degree attainment and the type of degree held. Peer school support was the only peer factor found significant, and only in predicting degree attainment. Of the school factors, students' perception of their success was significantly associated with degree attainment and the type of degree held, while teacher support was associated only with degree attainment, more strongly for non-Latino white participants than for Mexican American participants.

Two other aims of this study hold the most importance. One aim was to demonstrate whether knowledge of educational resilience added to knowledge provided by previous return research. The other aim was to identify which factors from either paradigm provided the best predictive overall model. These two aims are best evaluated together. Factors from both paradigms were shown to be significant in the overall models, which indicated that a student's perception of school success and peer

educational support significantly predicted degree attainment, controlling for achievement test scores and age at dropout. Further, self-esteem and educational aspirations were predictive of the type of degree held, controlling for achievement test scores and grade at dropout (high self-esteem was associated with GED attainment, while high educational aspirations were associated with diploma attainment). Thus, information provided by the study of educational resilience does indeed extend knowledge provided by previous return literature, but certain factors from previous return literature cannot be ignored.

The remainder of this chapter will consist of a discussion and interpretations section which will elaborate on the meaning of the results from Chapter Four. Following that will be a section describing the research implications of these results. Finally, recommendations for future research will be presented.

Discussion and Interpretations

This section interprets the results of the present study, in light of the research base surrounding educational resilience and returning dropouts. Interpretation of results is guided by the thematic arguments of works such as Finn and Rock (1997) in educational resilience and Wehlage and Rutter (1986) in dropout research – that efforts should be focused on identification of manipulable characteristics of students and determination of practices in public schools which can be constructive in positively impacting these characteristics.

Discussion is first undertaken of the number of dropouts which obtain high school degrees. This is followed by an interpretation of the meaning of the final models for degree/no degree and diploma/GED, in response to Research Questions Three and Four.

Following that will be a discussion of factors specifically from previous return literature, in response to Research Question One. The section will conclude with a discussion of factors specifically from literature on educational resilience, in response to Research Question Two.

How Many Gain Degrees?

One of the most striking findings of the present study is perhaps the simplest, that an estimated 59.2% of the high school dropouts from this study have returned to gain either a high school diploma or GED certificate, a figure which is 15.2% higher than the 44% estimate given by Kolstad and Kaufman (1989). This difference is even more striking when one considers that the present study includes participants who dropped out between seventh and twelfth grades, while the Kolstad and Kaufman study only included participants who dropped out in the tenth through twelfth grades. Grade has been shown in both studies to be positively associated with degree attainment, so the Kolstad and Kaufman estimates should be biased upward.

This result supports the assertions of previous studies that dropping out does not represent the end of a student's education. Further, it gives evidence of an increasing trend in degree attainment over the last ten years. Despite these findings, the research devoted to dropping out of high school continues to weigh heavily toward studying causes and correlates of dropping out. The research community would be well served to perform more studies on dropouts who return for degrees. Not only will such research possibly lead to an increase in graduation rates, it also should contribute to the study of dropout prevention.

Also important to note from this finding is the role played by multiple imputation in reducing the bias introduced by participants who did not respond to the second wave of data collection. Unlike similar studies reviewed here, the present study was able to make use of the entire sample, providing for the first time information on degree attainment for the entire dropout population. It has been assumed (Kolstad, 1988) that dropouts who did not respond to subsequent waves of longitudinal data were “hard core” dropouts who were less likely to hold high school credentials. Such assumptions are admittedly conjecture, since degree estimates for this population were unavailable. The present study, however, estimated that dropouts who do not participate in subsequent data collection actually are slightly more likely to have some form of high school credential. Degrees were held by 57.2% of the participants who participated in the follow-up wave; estimates using multiple imputation indicated that 59.2% of the total sample holds high school credentials.

Interpretations of Overall Models

Research Question Four asks which set of factors best explains the phenomenon of returning for a high school degree. Research Question Three asks how the study of factors from educational resilience adds to the knowledge from the research base on returning dropouts. Results from the final models answer both of these questions. The processes by which a dropout decides to get a high school degree, and if so, which type of degree to get, have been shown by the present study to be different processes. The choice to forgo further education is influenced more by outside factors than is the choice of which degree to get, which is shown to be internal. Encouraging, though, is the fact that both choices are influenced by factors which can possibly be changed by educators.

Such factors were provided by inclusion of items from the study of educational resilience. Finn and Rock (1997) have argued that the research on academic success has placed undue focus on relatively constant characteristics of the individual, and more focus should be placed on factors which can be changed by educators. The present study supports this notion, newly discovering student characteristics which are more easily adapted for academic success, as shown by degree attainment.

Consideration of resilience factors provided depth to the explanatory models. The submodels estimated from previously studied return factors were sparse. Moreover, the few factors identified in the return submodels described relatively invariant characteristics of the individual. The significance of resilience factors provided an added dimension and elucidated the significance of factors, such as school success and educational aspirations, which can be affected by schools. Further, as suggested by Alva (1991), Alva and Padilla (1995) and Chavez, Oetting and Swaim (1994), the significance of these factors argues for the importance of subjective student appraisals in the evaluation of the student's educational experience.

Restricting return research to factors correlated with dropping out presents a discouraging problem to educators hoping to change the trajectory of a dropout's educational path. Adding knowledge of educational resilience lends depth to the description of returners and describes more about the changeable process within the person. In short, knowledge of educational resilience gives educators more to work with.

Decision: high school degree or nothing. Dropouts who do not go on to gain some form of high school degree are of lower school capability (as measured by test

scores), younger, perceive themselves as less successful in school, and are more likely to have no friends in school.

The conclusion that younger dropouts are less likely to gain degrees than older ones supports earlier findings by Kolstad and Kaufman (1989) and Kolstad and Owings (1986). The present study suggests that this is a robust finding, significant even in the presence of other predictive factors. The primary benefit of this finding is the reassertion that efforts must be concentrated on retaining students as long as possible, because the longer these students participate in school, the better the chance they will obtain a degree should they drop out. The discussion below outlines possibilities for impacting other significant factors, all which could aid in retaining these students longer.

The significance of school capability is not surprising, but is somewhat discouraging, because capability is largely an invariant characteristic of a student at the high school level. However, the additional significance of school success, even after accounting for capability, is encouraging because it provides a way for schools to mitigate the effects of capability on degree attainment. Over and above capability, dropouts who see themselves as able to do school work are more likely to return for degrees, or conversely, students with low perception of success are being driven away from school forever. The power of the perception of school success is more evident when it is considered that grade point average – the actual method schools use to assign success – was not significant in this model. Therefore, it is wise for schools to search for ways to communicate positive messages to each and every student about school success and to implement inclusive approaches which accommodate many types of learning.

Pollard (1989) stated that high expectations were part of strategies teachers could employ to promote resilience among their students. This may be especially true for potential dropouts, because by the time they reach high school, many dropouts are labeled negatively and teachers often have been trained to think of them as such (Fine & Rosenberg, 1983). More globally, promoting high teacher expectations implies that schools must become places which are able to respond to broad student diversity, as suggested by Wang, Haertel and Walberg (1997). As the authors pointed out, creating such schools will not come easily, and could require major institutional changes. Many reform efforts include heightened expectations as part of their guiding principles. The Comer model (Comer, Haynes & Joyner, 1996) does so by including families and communities in the student's education, aiming to improve not only the academic development, but the overall holistic development of the student. The philosophy of the Accelerated Schools Project (Hopfenberg & Levin, 1993) downplays remediation and promotes each student as capable of learning at an accelerated rate. The principles of the Coalition of Essential Schools (Sizer, 1984) include individualization of schools to reduce ability tracking. In sum, heightening teacher expectations may be an effective method of promoting school success in potential dropouts, and could be part of a school's overall reform effort.

The present study indicates that dropouts with any friends in school, regardless of how many, are almost twice as likely to gain degrees. Conversely, dropouts with no friends in school are unlikely to finish their high school education. This finding is consistent with much of the resilience literature, most specifically Horn and Chen (1998), who demonstrated this relationship for postsecondary education. However, Horn and

Chen (1998) found that higher numbers of friends in school translated into higher likelihood of attending a postsecondary institution, while the present study indicated a dichotomy sufficiently described high school degree attainment.

Peer influence on the decision to return can be problematic for educators, because choice of peers is difficult to influence. Although educators may not be able to directly influence a student's peer group, there are other avenues which may help mitigate this influence. To this end, it is important to remember the overall picture, that for dropouts who score low on the significant factors set forth in this section, school is a very foreign place. Such dropouts display low school capability, a low sense of school success, and no friends in school, so it is foolish to imagine that these individuals would return to education once they drop out. Therefore, efforts to make school a more familiar, better fitting place might help these dropouts to return and in turn reduce negative peer effects. Changing the way these students are involved in everyday school life is one option. Gonzalez and Padilla (1997) showed that a sense of school belonging was more prevalent in resilient students. Perhaps involvement in more school activities, such as special school programs or extracurricular activities, might familiarize the student with the school environment, or maybe these students could participate in in-school mentoring programs, pairing them with students at less risk of dropping out. On a larger level, it is possible that tracking practices may consistently group these potential dropouts with other potential dropouts. Maybe schools which minimize tracking and promote diverse class possibilities would be effective in turning these students toward returning if they drop out. All of these practices would primarily serve to attach and familiarize the student with the school, very possibly lessening the effect of peers on returning, and

might have the additional effect of exposing the student to a different, more school-oriented peer group.

The fact that ethnicity was not found to be significant in these models should not be construed as a statement that ethnicity is unrelated to degree attainment. The univariate relationship between degree attainment and ethnicity indicates that non-Latino white dropouts are 1.73 times more likely to return to earn some form of high school degree (95% CI: 1.23, 2.43). However, the multivariate models indicated that achievement test scores, age at dropout and friends in school sufficiently explain the ethnic differences shown by the univariate effect. Further inspection of these results reveals that Mexican American dropouts display more risk in these factors than do non-Latino white dropouts. The test scores of Mexican American dropouts were on average 15.56 percentile points less than non-Latino white dropouts (95% CI: 12.08, 19.03), Mexican American dropouts were 2 months younger than non-Latino white dropouts (95% CI: .08, 3.85), and 12.8% fewer Mexican American dropouts had friends in school than did non-Latino white dropouts (95% CI: 6.1%, 20.4%). Thus, these three factors help explain why Mexican American students return to gain degrees less frequently than non-Latino white students. That these factors account for the univariate effect helps clarify some contradictory findings from previous literature on returning dropouts – if a study includes sufficient covariates, ethnic effects should be rendered insignificant.

There are encouraging facets of these results, however. First, the model presented here illuminates conditions responsible for lower degree attainment in Mexican American dropouts. These conditions are dispiriting to be sure, but concise, clear description of these conditions is an early step toward improving such conditions and increasing degree

attainment. Armed with the results presented here, educators should strive to make efficient use of continued research on causes of low school capability, early dropout and peer effects in Mexican American students. Second is the fact that no interaction between ethnicity and the above factors was found to be significant. In other words, the effects of the significant factors are similar for both ethnicities. This means that prevention efforts can be simplified, targeting test scores, age at dropout and peer school support, regardless of ethnicity. Third, school success averages were almost identical for Mexican American dropouts and non-Latino white dropouts, indicating that Mexican American students are able to retain positive beliefs in their ability to perform in school, though immediate results may suggest otherwise.

As cautioned by Nettles and Pleck (1994), identification of conditions which describe educational resilience should not be interpreted that individual fortitude, rather than social conditions, determines academic success. Turner, Laria, Shapiro and Perez (1993) are more blunt: "An emphasis on personal characteristics of minority groups such as African Americans and Latinos both protects and perpetuates an unjust social system" (p.210). The present study has shown that test scores, age at dropout and friends in school explain ethnic differences in degree attainment, but has further shown that Mexican American dropouts possess negative levels of these circumstances in greater magnitude than do non-Latino white dropouts. Certainly, the social conditions which have influenced these factors are still in place and continue to merit close attention.

Decision: diploma or GED. Dropouts who chose to get a high school diploma instead of a GED generally dropped out at a later grade, expressed an intent to graduate from high school at the time they dropped out, and were less likely to admit they had left

school. Dropouts who chose to get a GED instead of a diploma were generally of higher capability and displayed higher levels of self-confidence. Hence, the present study indicates that once a student decides to return to get a high school degree, the choice of which degree to get is nearly uninfluenced by outside elements.

Attainment of a high school diploma is associated with more labor and economic success than is attainment of a GED certificate. People with high school diplomas have been shown to work more, have better jobs and earn more than people with GED certificates (Cameron & Heckman, 1993; Passmore, 1987). This is not to say that for all students, a high school degree is a better choice than a GED. However, it is a safe assumption that a high school degree is better for most students, unless there is a demonstrated situation where the GED would be better. The following discussion will proceed under this assumption.

The grade in which a student drops out of high school is a strong predictor of which degree (s)he will attain. Dropouts with less school to finish are inclined toward diplomas, while those with more school to finish are drawn toward GED certificates. This is consistent with the findings of Kolstad and Kaufman (1989) and is not unexpected – for a student who dropped out early in her/his high school career, finishing a high school diploma takes more time and effort than would attaining a GED. The strength of the grade/attainment relationship is stronger in the present study than shown in Kolstad and Kaufman (1989), possibly due to the inclusion of younger dropouts in the present study. The stronger relationship demonstrated here argues strongly for the importance of early dropout prevention efforts.

The significance of the educational aspiration variables stresses the importance of continued efforts by the school to motivate students to finish school, lending validity to students' appraisals of their school experiences. All too often, societal systems, and most proximally, school systems, are too willing to characterize dropouts as "losers" with no aim or sense of their future (Fine & Rosenberg, 1983). Students generally have honest and accurate insights into their school experiences, and the significant relationship between aspirations and degree attainment shows that many dropouts indeed have a certain acumen regarding the future state of their education. Floyd (1997), among others, has noted that educationally resilient students have a clearer sense of purpose about their education than do nonresilient students. This sense of purpose must be capitalized upon and promoted, as these student insights can be utilized to help dropouts gain degrees.

The aspirations finding is an encouraging one because of its simplicity. Other studies (Kolstad (1988); Kolstad & Kaufman (1989)) showed aspirational differences using more complicated measures of educational aspirations. Similar to the resilience study by Catterall (1998), the results from the present study suggest that complicated measures may not be needed – simply identifying whether a dropout believes (s)he will finish high school is helpful in predicting if the dropout will gain a diploma.

This result also holds promise because of the potential for impact. Turner et al. (1993) note that low educational aspirations may be the result of a student's lack of appreciation of his or her potential. That may be true to an extent, but it is important to remember that the educational aspiration factors studied here are significant even after accounting for the effects of self-confidence and capability. Certainly, this knowledge is a valuable tool for promoting high school education, because while educators may find it

difficult to impact and improve a student's self-confidence or capability, these results show that merely helping students to view themselves as high school graduates can increase their chances of gaining a diploma. Alva (1991) argued for the need for early and continued contact between counselors and students to motivate students to attend college, maintaining that a student preparing for college performs better academically. In the same sense, the results of the present study argue for early and continued contact between school personnel and students to motivate students to finish high school. Simple solutions may be available, such as renewed focus on helping students see the value of a high school education by extending education on the vocational and educational opportunities that they have available to them.

In increasing aspirations, it may be helpful to study the communication patterns of teachers toward dropouts. Geary (1988) and McMillan and Reed (1993) reported results which indicated the acuity that students present in perceiving messages given by teachers. Buriel (1983) showed that students who were less involved in school received less attention from their teachers, while Fine and Rosenberg (1983) report that teachers hold low expectations of dropouts. Perhaps dropouts less frequently hear the expectation that they finish high school. Possibly, efforts so simple as continued assertions toward the potential dropout such as, "you can finish high school," "we want you to finish high school," and "we expect you to finish high school" can change students' views so that they see themselves finishing school. It is further encouraging to note that the aspiration/degree relationship was not demonstrably different for Mexican American participants. Previous literature has argued that this relationship may be critical for minority students, who may be under the impression that for them, a diploma is not

necessarily an avenue to success (Alva & Padilla, 1995). The present study concludes that heightened aspirations can be as helpful for a Mexican American dropout as for a non-Latino white dropout.

A specific form of educational aspiration, the denial of having left school, is interesting to note. This study shows that many dropouts see themselves as “on vacation”, or merely taking a break from school, and that these dropouts are more likely to gain diplomas than they are GEDs. If a student leaves school, that school may be well served to ask the simple question, “are you still a student in school?” of their students, and target those who respond negatively, or even ambiguously. Further research should be performed to find out exactly why these students feel the need to exit school for a period of time. School characteristics have been shown to affect dropout rates (Bryk & Thum, 1989), and curricula tend not to reflect the experiences of dropouts (Fine & Rosenberg, 1983). Since these “vacationing” students do not intend to leave school permanently, it is possible that many of them are leaving because of factors directly or indirectly related to the school itself. Such research should be performed with accommodation in mind, to help shape the school as a place where all can feel comfortable, not just those who fit the societal mold of a student, hopefully retaining these students.

High capability and high self-confidence are associated with GED attainment. The capability finding, while possibly surprising, is not unprecedented. One previous study (Kolstad & Kaufman, 1989) reported a similar result. Kolstad and Kaufman were not expecting this outcome, but guessed that it was a result of a group of dropouts with high capability who took the GED test in order to pass high school and continue on to an

early college education. A brief, informal analysis of the subjects in the present study who responded to the second wave of data collection did not support this notion, nor did these dropouts appear to be employed more, earn more or have better job security. These facts and the addition of the self-confidence finding from the present study raise the possibility of broader explanations. Possibly, these students do not have a specific goal in mind, such as further education, but feel they have the confidence and ability to succeed at something. However, they may not feel school affords them the opportunities to build on these dreams. Or maybe these students actually have specific goals in mind, such as a good job, but as time goes on have discovered that the lack of a high school diploma is hindering their advancement. Whatever the explanation, it is clear that these students have ability and ambition, and they believe in themselves, but did not find school to be a good fit for their lives. Schools should endeavor to identify these students and harness this ambition, directing these students toward a high school diploma and a better chance of success. Consistent with the theme of this discussion, schools should be places which are inclusive and supportive of all learners, always seeking to create a better fit for all students.

The primary aim of this study was to articulate differences in dropouts who attain high school diplomas, those who attain GEDs and those who attain neither. Results indicated that different types of degree attainment can be explained by relatively few factors. Further, many of these factors are ones which can be impacted by school systems. The present study also sought to clarify relationships among variables put forth by previous literature on degree attainment. The following section describes this undertaking. In interpreting these results, there are factors which were significant in the

submodels, but not significant in the overall models. These factors represent a “second level” of importance, but are still worthy of brief consideration. Consequently, although it is not appropriate to conclude that these factors are part of a parsimonious description of the returning dropout, these factors should still be considered as possible correlates unless their insignificance is substantiated by future research.

Factors From Previous Return Literature

Research Question One asks how factors shown to be significant in previous studies on returning dropouts describe attainment of high school credentials, when studied in tandem. Many factors have been identified in previous work to be significantly associated with gaining a degree, but the present study is the first to consider all of these variables in one analysis. Results from this analysis showed that only a few of these factors are needed to predict degree attainment, whether the aim is to predict degree/no degree or diploma/GED attainment. Of the nine variables included from previous research, only three were significantly associated with the choice to procure a degree. In predicting the type of degree obtained, only four factors were associated with the type of degree acquired.

Socioeconomic status was shown to be significant in both degree attainment submodels. Not surprisingly, participants of higher SES were more likely to get a degree than not. However, students of higher SES were more likely to get a GED than a high school diploma. These students may have better access to information on how to get a GED, such as GED programs. Also, given their higher social standing, these students may have access to better jobs or further training that require quick attainment of a high school credential. Socioeconomic status was significant only in the submodels, while in

the overall models, other factors accounted for enough variance to render SES insignificant. This suggests that although SES has been frequently shown to be significantly related to returning for a degree, there are other factors which are more salient in describing degree attainment.

Kolstad and Kaufman (1989) showed that participants who were parents were more likely to return for some kind of degree, while Kolstad (1988) showed these students more likely to stay out of school. The present study finds that accounting for other factors renders the children factor unrelated to attainment of some degree. However, for those students who did attain a degree, those who had or were expecting children at the time of dropout were more likely to get a GED than a diploma. This is a reasonable finding, as many of these students would not be able to put forth the time required to finish a high school diploma. There are two interesting facets of this finding. First, there is no interaction with this factor and gender, indicating that the effect is the same for males as it is for females. Many studies (e.g., Rumberger, 1983; Wehlage & Rutter, 1983) claim that females are more likely to drop out for child-related reasons. However, the return process is not that way. Second is the wide variance associated with this factor (the confidence interval estimates the true effect is likely between 3.57 or as low as 1.05). Although the children factor was not determined to be a significant effect in the overall model, it deserves further research in studies able to provide more precision than the present one.

Achievement test scores, grade at dropout and age at dropout were all associated with some form of degree attainment in the overall models and are discussed in the “Interpretations of Overall Models” section above.

Teacher caring was not found to be significant in either measure of returning. This is perhaps disappointing, because it superficially implies that a student's situation cannot be aided by the perception that teachers care about the participant. However, it should be noted that the teacher caring item only asks whether teachers cared about the participant in the last year. More informative teacher caring variables may yield different results. Therefore, the negative result reported here should not lead researchers to regard teacher caring as unimportant in the life of a dropout.

This study has demonstrated that when isolating variables from previous dropout research, only a few variables are significantly associated with returning for a degree. The present study also intended to examine the effects of factors commonly shown to be significant in educationally resilient children, an aim which is described in the next section. Again, in interpreting these results, there are factors which were significant in isolated submodels, but not significant in the overall models. These factors represent a "second level" of importance, but are still worthy of brief consideration.

Educational Resilience

The study of educational resilience has been advanced by the present study, as it is the first to consider resilience in high school dropouts. Further, this study has shown that knowledge of educational resilience adds to the knowledge of returning dropouts, over and above what has been considered previously.

Research Question Two asks how factors associated with educational resilience explain returning for a high school degree. A thorough evaluation of the effects of resilience factors on a dropout's decision for further education has provided information

on four dimensions of educational resilience - personal factors, family factors, peer factors and school factors. Discussion will be organized by these dimensions.

Personal factors. Self-esteem was shown to be associated with degree attainment, but varying depending on the type of self-esteem measured. The competence component of self-esteem was shown to be positively related to the decision to obtain some type of high school degree, but only in the submodel, when demographic factors and personal factors were considered. Self confidence was shown to be positively related to GED attainment, even when considering all possible factors. Social acceptability was not shown to be associated with either measure of degree attainment. Finn and Rock (1997) concluded that although self-esteem is associated with resilience, there are other factors, notably school engagement factors, which are associated more strongly. The self-esteem results from the present study do not contradict the conclusion of Finn and Rock (1997), but call it into question. Although the specific school variables found significant in the Finn and Rock (1997) study were not included here, many other variables were, including some school-related variables of a different nature. Results from the present study indicate that controlling for specific aspects of self-esteem, as opposed to a general self-esteem construct, provides the sensitivity needed to disentangle the self-esteem/resilience relationship, especially when considering a wide breadth of variables. Also of note is that there were no demonstrated interactions between ethnicity and any self-esteem measure. Finn and Rock (1997) cited research showing the relationship between academic achievement and self-esteem to be weaker for minority students, a phenomenon which was not demonstrated in the present study.

Educational aspirations were shown to be significant in both submodels, and were further shown to be significant in the overall model discriminating diploma and GED attainment. This effect is discussed above.

Gender, ethnicity and socioeconomic status were included in all submodels. Gender was never shown to be significantly related to degree attainment. Ethnicity typically was unrelated to degree attainment, with the exception of an interaction with teacher relationship in the school submodel (interaction discussed below). As discussed above, although ethnicity is not a significant factor in predicting the presence or absence of a degree, it is highly associated with the significant factors in the model. Socioeconomic status was found in different resilience submodels to be positively related to returning for some type of degree, and more so with GED attainment, but was not found significant in the overall model. Thus, results from this study suggest that, although SES and ethnicity are frequently shown to be associated with educational resilience, their effect on returning can be accounted for by carefully considering the dropout's entire situation.

One factor mentioned frequently in the educational resilience literature is optimism. However, the present study was unable to show optimism to be significantly related to any form of degree attainment. It is interesting to note that the studies reviewed here which support optimism as a resilience factor are all qualitative studies. Perhaps optimism is a factor which students believe plays a major role in their resilience, being unaware that there are more responsible factors. Also, the items used here to measure optimism were focused more on hopes for socioeconomic attainment, so it is

conceivable that this particular quantitative measure of optimism is not able to capture the spirit of optimism described in the qualitative studies.

Family factors. No family factors studied were found significantly related to degree attainment. Given the plethora of research touting the relationship between family and education, particularly in minority students, it seems unlikely that family is truly not related to degree attainment. Many explanations for this result are possible. First is the possibility that family factors are related to degree attainment, but are supportive of other significant factors, such as self-confidence and educational aspirations. Second, it may be possible that the present study did not consider a wide enough range of family variables. For instance, Waxman, Huang and Padron (1997) studied parental school involvement, Waxman et al. (1997) and Horn and Chen (1998) studied parental educational expectations, Turner et al. (1993) studied family alienation and Gonzalez and Padilla (1997) studied parental monitoring. None of these measures was included in the survey used in the present study. Third, it is possible that the sensitivity of the measures of family caring and family school support used here was not precise enough to distinguish effects. Both measures were heavily skewed toward high levels of family support, and although transformations were considered, they were of no help. Alva (1991) had similarly skewed measures and concluded the skew was responsible for the negative result.

Peer factors. Peer factors were not commonly shown in the present study to be predictive of returning for a degree. The only instance of a peer factor significantly related to a degree outcome was the number of friends in school, which significantly

predicted the choice to return for some kind of degree or not. The significance of this factor is discussed in the “Interpretations of Overall Models” section above.

Of course, the insignificance of the other peer variables in this study is possibly because they are not impactful after considering the other variables. However, the limited research on peer effects on educational resilience would suggest that inclusion of more variables directly related to peers and school outcomes might hold promise. The present study was unable to include measures of peer attitude toward school as Alva (1991) did, nor was it able to include the importance of education to friends, as did Horn and Chen (1998). Further research on educational resilience in returning dropouts would benefit from the consideration of more precise and more informative peer variables than have been presented here.

School factors. School success and teacher relationships were the only school factors found significantly related to degree attainment. It should be noted that although these are the only factors studied which are specifically related to school, all significant factors in the overall models were school-related except self confidence. Therefore, the school itself is a tremendously important factor in determining a dropout’s decision to continue and gain a degree, but the school effect is often indirect.

A student’s relationship with teachers was shown to be significantly related to the decision to obtain some type of degree, but varying by ethnicity. It was found that positive teacher relationships were more influential in the degree attainment of non-Latino white students than in Mexican American students. It has been speculated that Mexican American students receive less positive teacher interaction than do non-Latino white students (e.g., Alva, 1991; Buriel, 1983; Ogbu, 1983). It is possible that years of

such interaction has caused the Mexican American students to insulate themselves from teachers opinions, to avoid internalizing these messages. Further, Ogbu (1983) theorizes that schools sometimes communicate to minority students a weak link between success and social mobility. Therefore, it is possible that minority students may believe that a high school degree will not do them much good, so teacher relationships do not affect their degree attainment as much. It is important for schools to recognize that teachers influence the degree attainment of dropouts even before they leave school, and that this influence may be different depending on the ethnicity of the student. Schools and teachers could enhance diversity efforts, learning how to better respond to the needs of minority students, all the while cultivating what appears to be a strong influence on non-Latino white students. Given the high variance associated with this effect, it is one which should be studied further, as the lack of significance in the overall model may possibly be due to the lack of power introduced by this variability.

School success was found to be significant in both submodels and in the overall model predicting degree attainment versus nothing. The school success relationship is discussed in the “Interpretations of Overall Models” section above.

Extracurricular involvement has been shown to be associated with resilience in many studies, but was not found significant in the present study. This result is consistent with Finn and Rock (1997), but conflicts with Catterall (1998). The measure of extracurricular involvement used here is similar to the one used by Finn and Rock (1997), simply whether the participant was involved in extracurricular activities. Catterall (1998) used a more complicated measure, measuring numbers of activities and hours spent. It is possible that the contradiction seen here is due to the different measures used, just as it is

possible the contradiction is due to different kinds of resilience studied. As suggested by Catterall (1998) and Finn and Rock (1997), further research should be conducted using more informative measures of extracurricular activities before definitive conclusions can be drawn.

School liking, teacher caring, and supportive school environment were also not shown to be significantly related to any return measure. The non-significance of teacher caring is surprising, given the teacher relationship finding. However, teacher caring was measured asking about teacher caring over the last year, and is possibly not a precise enough measure.

This study showed that factors associated with educational resilience are influential in the degree attainment of dropouts. The greatest quantity of significant factors come from the personal factors dimension. Some factors, such as individual perception of school success, self-confidence and number of friends in school are influential even when other significant factors from previous return literature are controlled. Other factors, such as teacher relationships and self-esteem, are worthy of practical consideration, and merit future study, but were only shown to be significant when considered along with selected factors.

Conclusion

Previous research on returning dropouts had been conducted assuming that returners possess less of what characterizes a dropout. The present study accepted this precept, but expanded it through incorporation of a more positive area of study, educational resilience. The present study was able to bring together many significant factors from both areas. This, along with inclusion of younger dropouts and elimination

of sample bias due to nonresponse, produced the most comprehensive comparison to date of dropouts with and without degrees.

The present study supports the contentions of previous literature that dropping out of high school does not signal the end of a student's education. In doing so, this study indicated that many students return to gain a diploma or GED, and possibly at a much higher rate than previously thought. Thus, it is surprising that more research efforts have not been focused on identifying theories and correlates of returning dropouts. The results of this study demand immediate attention toward this issue.

Results described here indicate that the decision to obtain or not to obtain a high school degree is partially a function of factors which are relatively intractable at the high school level. These include school capability (as measured by test scores), age at dropout and whether the dropout has friends in school. However, it is also a function of a potentially malleable factor, the student's perception of his or her school success. This factor gives hope to redirecting the course of a returning dropout in that it can potentially mitigate the effects of other factors. Also promising is the realization that early dropout and peers in school can possibly be impacted by making schools more responsive to the special needs of potential dropouts.

Dropouts can gain high school degrees by returning to gain a diploma or by earning a GED certificate. The present study showed that grade at dropout and educational aspirations were positively associated with diploma attainment, while school capability and self confidence were positively associated with GED attainment. Assuming that a diploma is better for most students than is a GED, these results are quite useful. First, they show that helping a student to see themselves as a high school

graduate can be an aid in promoting diploma attainment. Second, they suggest that channeling the ambition held by many GED holders may be a way to increase diploma attainment in dropouts.

This study has also shown that some characteristics commonly shown to be related to returning and resilience are explained by considering the factors discussed above, which are more impactful. Socioeconomic status, along with some family, peer and school factors, were determined to be statistically insignificant when considered in the presence of factors such as school capability and perception of school success. Also, although returning to get a degree is less likely for Mexican American dropouts than non-Latino white dropouts, ethnicity was also shown insignificant, because other factors explained the ethnicity effect. Further, these factors influenced return similarly for both ethnicities. In short, dropouts are dropouts, but returning is more of a problem for Mexican American dropouts because this group displays more risk factors than do non-Latino white dropouts. Generally, then, this study finds that it is very important to respond to the entire situation of the individual, but this response can be made often in terms of a few important individual factors.

These findings have implications for the study of returning dropouts, the study of educational resilience and the conduct of public education. These implications are summarized in the next section.

Implications

Expansion of Educational Resilience and Dropout Research

The findings from this study will hopefully lead the fields of educational resilience and dropout research to more thoroughly investigate degree attainment in high

school dropouts. A dropout who returns to gain a high school degree has not before been considered to be a resilient student, although such a student meets the definition of resilience, especially as put forth by Catterall (1998). Catterall is one of the first to define resilience in terms of a specific school failure, so perhaps these studies signal a trend in this direction.

Studies of high school dropouts have practically ignored comparisons between dropouts who gain credentials and dropouts who do not. The new findings of the present study present cause for optimism and hopefully will spark interest in discovering more about these students and the factors which influence them to return. Such students may be an untapped resource in the battle to reduce dropout rates.

Expansion of Dropout Prevention and Recovery Programs

The findings described here should also cause architects of dropout prevention and dropout recovery programs to consider promotion of characteristics (specifically, ones identified here) which will encourage returning if a student does leave school. No matter how good a prevention program is, some students will drop out anyway. Therefore, it is wise for such programs to “plan ahead” and build protective characteristics in potential dropouts that can make it easier for them to gain a degree if, in fact, they do drop out. In addition, this strategy will likely enhance prevention efforts and prevent some of these students from ever dropping out. Even after a student drops out, dropout recovery programs may experience success by concentrating on building the resilience characteristics described as significant by this study.

School Policy and Practice

Perhaps the most important implication of this research for the field of education is a change in the policies and practices of schools toward dropouts. Many researchers (e.g., Finn & Rock, 1997; Wehlage & Rutter, 1986) believe that the secret to educating at-risk students lies in the alteration of factors related to school rather than factors related to the individual. In fact, Fine and Rosenberg (1983) and Wehlage and Rutter both state that such identification of individual characteristics can make it too easy for schools to abdicate the responsibility of educating at-risk students, to the point of forcing out students who do not fit the educational mold created by schools. Unquestionably, accommodation of these students can be difficult, and altering school characteristics can be hard. However, schools are resourceful and the public is accepting when the cause is right, so creation of schools which educate these students is within reach. As an example, we need look no further than successful efforts to accommodate students with special needs. If policy and practice can be structured to accommodate students with special needs despite their challenging situations, policy and practice can be structured to accommodate potential dropouts despite their challenging situations.

Wehlage and Rutter (1986) suggested some general reforms of policy and practice which they believed necessary if schools are to become places which respond to the needs of the potential dropout. Two of these reforms hold promise for promoting degree attainment in dropouts, in light of the results discussed in the present study.

First, the authors suggest an enhanced sense of professional accountability among educators toward all students. The results of the present study indicate that such dedication may work wonders in promoting return in dropouts. Returning for a high

school degree has been shown to be a simple process in terms of the number of effective factors, and these factors lend themselves well to change under an enhanced sense of accountability. The present study has advocated educating teachers to promote higher teacher expectations of students, along with proper preparation to promote the belief that, despite their seeming failures, these students are capable of the scholarship necessary to complete high school. Further, this preparation could encompass communication patterns, ensuring that teachers continually send the message to all students that they can and are expected to succeed. Such preparation should be an outcome of the heightened accountability stressed by Wehlage and Rutter (1986).

Second, the authors argue for a redefinition of school work for students and teachers that will allow more students to achieve academic success and satisfaction, but not sacrifice quality. The present study has advocated searching for broader circumscription of school success, arguing for implementation of more inclusive instructional approaches which accommodate many types of learning. Of course, the current educational model properly educates many students, but augmenting these techniques with more diverse opportunities for success should go a long way toward creating schools which are familiar to more students and allow students greater opportunity to find a comfortable place where they fit.

The results, conclusions and implications of the present study suggest opportunities for further research regarding dropouts who return for high school degrees. These opportunities are discussed in the next section.

Recommendations for Future Research

Although the work presented here has advanced the study of returning dropouts, there is still much more to be learned. Future studies could be designed which could build upon the work of this study. For instance, the present study considered many variables, but there are other variables which could not be included which may provide added information. Unclear from the analyses presented here was whether the minimal effects of family, peer and school factors indicated true reticence of these factors, or whether a greater amount of more precisely measured factors would show significance in these areas. Especially important would be the investigation of the effects of peer attitudes toward school, family attitudes toward school, a more in-depth measure of family school support, a more precise measure of extracurricular involvement, a teacher caring measure which consists of multiple items, and assessment of the degree of personal special interest taken in the student by school personnel. Also informative may be examination of the role of internal locus of control, which many studies have shown to be characteristic of resilient students.

Factors which were included in this study were often measured by scales constructed by equally weighting a number of items which help measure the construct in question. Methods which can measure these constructs more precisely might prove helpful. Structural equation modeling is a method which may improve measurement of these constructs. Care should be used in implementing this method, as the dimension of the problem in the current study could present estimation difficulties.

The present study considered only variables which were descriptive of the dropout's situation at the time of dropout. With this knowledge in hand, a logical next

step would be to identify the effects of particular variables measured at a later time in the participant's life. Such data would not necessarily need to be collected to measure cause, but could provide a unique view, as it would afford the participants an opportunity to consider life experiences retrospectively, in addition to describing their lives at a later point in time.

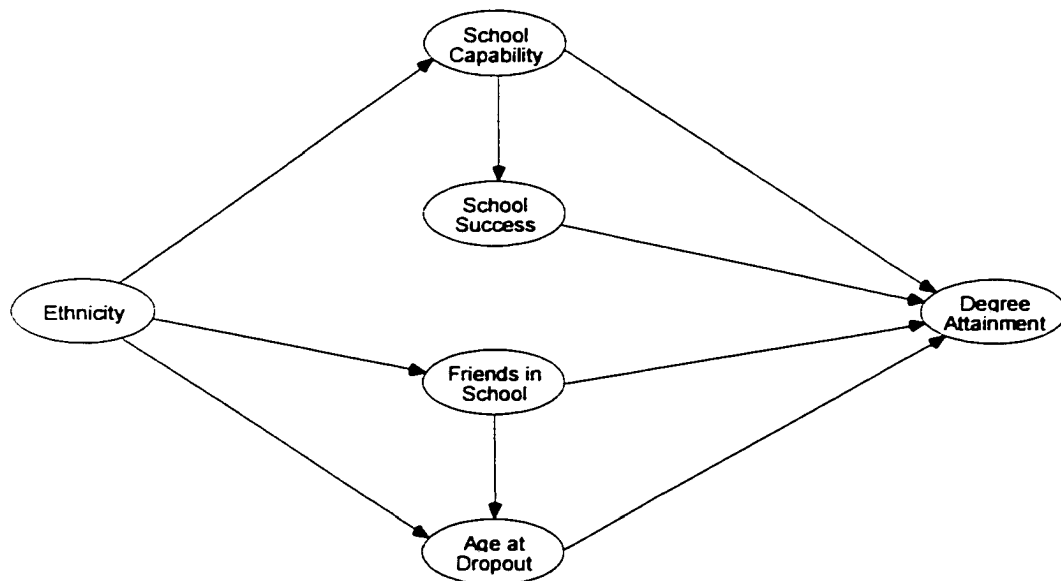
Such data would also allow a comparison of the employment, life, health and psychological characteristics of dropouts who attained diplomas and those who attained GEDs. As noted earlier, studies have shown differences in students with diplomas and those with GEDs. Based on this information, the assumption was made that for dropouts, a diploma was better than a GED, but in truth, no study has examined this comparison for returning dropouts. Therefore, a study is needed which compares the life statuses of diploma holders who graduated on time, diploma holders who had dropped out, and GED holders.

Given the information in the present study, the most important next step would be to begin to identify causes of degree attainment, or lack thereof, in dropouts. The present study, and others like it, have presented cross-sectional data which describe correlates of degree attainment. From these results, one can speculate as to the causes of returning, but no longitudinal data has yet been presented which is designed to demonstrate cause. Ideally, such a study would be designed so the participants could be queried frequently, possibly as often as once per year. Frequent assessment would ensure that changes and growth could be properly assessed. With such data, researchers would be able to test causal models describing the process of degree attainment in dropouts. Given the information set forth in the present study, enough is known to suggest possible models to

be tested. Following are two pairs of competing models which may best describe degree attainment.

Models 1 and 2 describe factors which influence the decision to attain some sort of high school degree. Figure 1 graphically represents Model 1. In this model, school capability, school success, presence of friends in school and age at dropout directly affect degree attainment. Since school capability, friends in school and age at dropout have been shown to be lower in Mexican American dropouts, ethnicity is conceived as influential to these factors. It is also proposed that friends in school influence the age at which a student drops out. Further, school capability is posited to influence the dropout's sense of school success. The present study has suggested that the perception of school success can be affected by educators, as it is uncorrelated with ethnicity and is correlated with return even after controlling for other effects. The model proposed here would

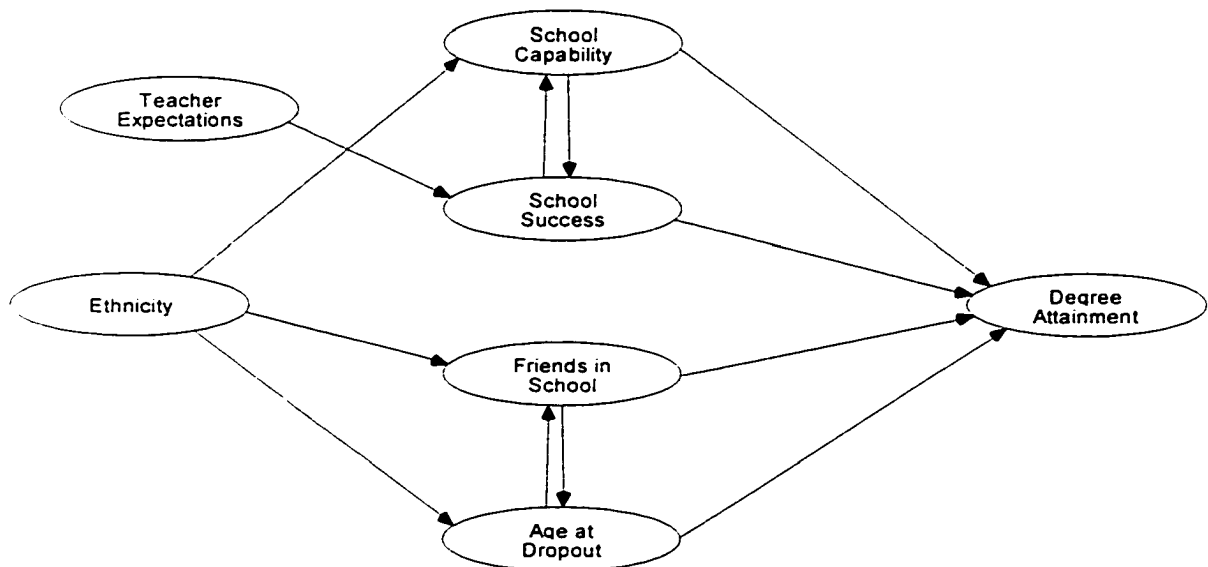
Figure 1. Degree Attainment, Model 1.



provide information as to the degree to which school capability leverages the perception of school success and may hold the key to the impact schools can have on this perception.

Figure 2 graphically represents Model 2, a competing model to describe the decision to attain some sort of high school degree. This model is similar to Model 1 in that school capability, school success, friends in school and age at dropout all directly influence degree attainment, and that friends in school influences age at dropout, while capability influences school success. However, this model posits these relationships to be more complicated than does Model 1. This model suggests that age at dropout also affects whether a dropout still has friends in school – dropping out may cut off social ties to peers still in school, so it is possible that dropping out actually changes one’s peer group. This model also implies that school success affects school capability. It may be that early intervention to boost a student’s perception of her/his school success creates a greater desire to participate in schoolwork, thereby increasing school capability.

Figure 2. Degree Attainment, Model 2.

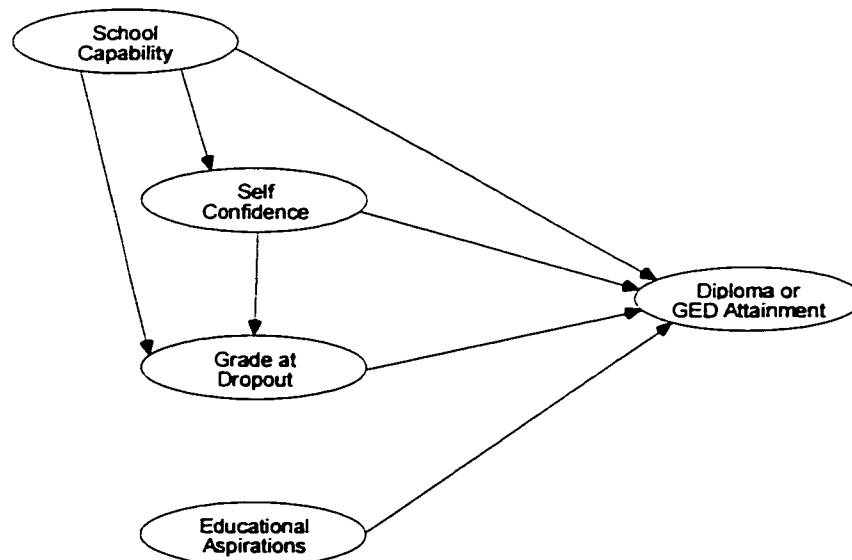


Additionally, Model 2 proposes that teacher expectations influence the perception of school success. As discussed above, heightening expectations of potential dropouts may

result in increased schoolwork and thus, increased perception of the value of this work. Further, the effect of teacher expectations may mitigate whatever effect school capability may have on the perception of school success.

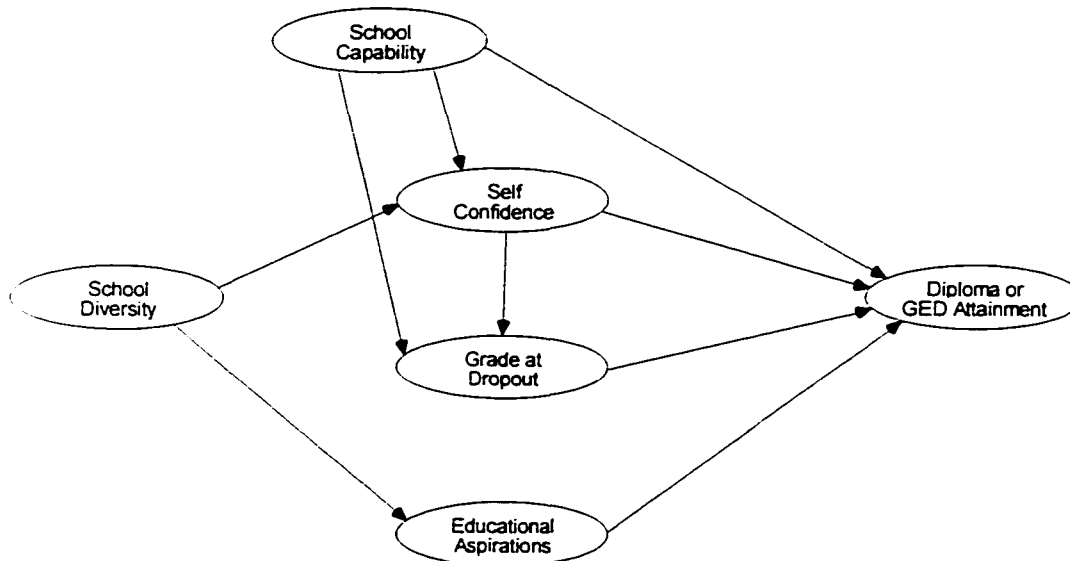
Models 3 and 4 describe processes by which a dropout might choose to graduate by way of obtaining a diploma or by way of a GED. Figure 3 graphically represents Model 3. In this model, school capability, self-confidence, grade at dropout, and educational aspirations directly affect the decision to get a diploma or a GED. Specifically, capability and self-confidence are associated with GED attainment, while grade at dropout and educational aspirations are associated with diploma attainment. Capability is believed to influence self-confidence. In addition, capability and self-confidence are hypothesized to act upon the grade at which a student drops out, because many students of high capability and self-confidence are thought to drop out because they believe they can do better things with their lives.

Figure 3. Diploma or GED Attainment, Model 3.



Model 4 is more complicated than Model 3, and is graphically represented in Figure 4. In this model, it is posited that school capability, self-confidence, grade at dropout, and educational aspirations directly affect the decision to get a diploma or a GED. that capability influences self-confidence and that capability and self-confidence both affect grade at dropout. However, the outside influence of the school is added to this model. The capability that a school has to provide opportunity for the potential dropout, or help the dropout “find a niche” is posited as mediating the effects of self-confidence and educational aspirations. Such capability is labeled “School Diversity” in the model. As described above, it may be that expanding school opportunities for potential dropouts with high self-confidence actually reverses the effect self-confidence has on the diploma/GED choice, helping to channel this confidence toward school attainment, resulting in a diploma rather than a GED. Enhanced school diversity should also help the potential dropouts to view school as a place they want to be, making it more plausible to see themselves as graduates with diplomas.

Figure 4. Diploma or GED Attainment, Model 4.



Epilogue

My mother was a high school business teacher. In talking with her about teaching in general, and my own classroom specifically, Mom has often advised, “A kid will do *something*. Your job is to make sure it’s productive schoolwork.” My father is a common-sense observer of human behavior. Dad has often told me, “Different people have different ways of staying alive in this world.” These two statements, perhaps as well as any, capture the findings, interpretations and implications of the present study.

Some of the factors which influence the return to high school are beyond the control of the educational system, or are at best difficult to impact. However, the present study also has shown there are influential factors which can be impacted by educators and school systems. To create situations which are conducive for a dropout’s return to school, it is incumbent upon schools to become places where these students are expected to do well and which provide diverse opportunities for these students.

In such schools, a potential dropout’s actions are not automatically expected to be counterproductive, and educators in such schools will be committed to finding positive outlets for these actions. There will exist shared responsibilities, such that students will be expected to act in a fashion which is conducive to productive schoolwork, with the school system working to find a way to meet the needs these diverse actions present. To this end, successful school systems and educators should continually reinvent under the precept that students do not all come from one mold. Students’ actions should be encouraged and channeled positively, and this is best done by realizing that learning and expression of this learning occurs uniquely in each individual.

This study and others have presented irrefutable evidence that high school dropouts do not have to remain high school dropouts. There are things that can be done by schools to retain many of these students, and if some still drop out, to help smooth the path for their return. Schools which recognize that “a kid is going to do *something*” and that “different people have different ways of staying alive in this world” are those most likely to help these students toward the degrees they will need to survive in the coming century. As usual, Mom and Dad were right.

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