Participation in Summer School and High School Graduation in the Sun Valley High School District

By

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ABSTRACT

This study examines the effectiveness of a summer school credit recovery program in the Sun Valley High School District. Using logistic regression I assess the relationship between race, gender, course failure, school of origin and summer school participation for a sample of students that failed one or more classes in their first year of high school. A second set of models examines the association between the variables listed above and high school graduation. While most students that failed one or more classes did not graduate from high school, the findings indicated that these students are more likely to graduate from high school if they participate in the summer school program than if they do not. As the number of times that students participated in the summer school program increased, the more likely they were to graduate from high school. This study's findings also identified course failure as a predictor for both summer school participation and dropping out of high school. The students who failed one course during their initial semesters of high school were more likely to attend the summer school program than students who failed multiple courses. The same trend was noted with high school graduation. Students who failed multiple courses during their initial semester in high school were less likely to participate in the summer school program and graduate from high school than students who only failed one course. The findings suggest that the Sun Valley High School District should: re-examine the current format of implementing the summer school credit recovery program, create and implement a freshman orientation program, and examine the main causes of course failure for freshman.

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INTRODUCTION

A matter of great concern in American society is the drop out rate of students in high school. School personnel and education policy makers should be alarmed by increasing high school drop out rates due to their negative effects on individuals, general society, and the economy. When high school students drop out, the social and personal effects can be catastrophic. Students who drop out of high school are most likely to have lesser paying jobs, higher rates of unemployment, and lower living standards than students who do graduate from high school (Caterall, 1985; Rumberger, 1987; Rumsberger & Lim, 2008). A considerable number of studies indicate that students who live in low socio-economic inner city communities are the most likely to drop out of high school within five years of their promotion from eighth grade (Allensworth & Easton, 2007; Balfanz & Neild, 2006a; Roderick & Nagaoka, 2004; Roderick & Camburn, 1999; Roderick, 1996). These same inner city students show significantly higher rates of early pregnancy, drug use, drug dealing, and delinquent behaviors than children residing in more affluent areas (Sum, Khatiwada, McLaughlin & Palma, 2009; Adger & DeAngelis, 1994; Feigelman, Stanton & Ricardo, 1993; Hernandez, 1993; Rhodes & Jason, 1990). While it is true that graduating from high school does not guarantee that a person possesses the necessary academic skills to be a successful member of the workforce, failing to graduate most often signifies the person does not (Rumberger, 1987; Rumberger & Lim, 2009).

Purpose of the Study

I analyzed a commonly used strategy for dropout prevention, the effectiveness of summer school credit recovery programs in large urban high schools servicing high minority student populations in economically depressed areas. Specifically, this study addressed the following research questions: (1) Are race, gender, number of course failures, and school of origin associated with the likelihood of participating in a credit recovery program for 9th grade students failing core courses during their initial semester of high school? (2) What is the relationship between participating in a credit recovery program and graduating from high school for 9th graders failing core courses during their first semester of high school? (3) Are race, gender, number of course failures, and school of origin associated with graduating from high school?

To answer these questions, I analyzed quantitative data from a four- year cohort group of students in a large urban high school district. My goal was to test the theories of institutional departure and school effects that are associated with students' participation in credit recovery programs and the completion of high school. Present research on credit recovery programs and their success rates is limited. For this purpose, this analysis provides insight into factors associated with students' participation in credit recovery programs and the effects of participating in these interventions on students' high school graduation and completion.

Problem Statement

The most serious ramification of dropping out of high school, is that these students leave schools without a key credential and with few academic skills, both of which will limit a young person's social and economic advancement throughout the remainder of their working lives (Rumberger, 1987). Approximately half of all dropouts consistently cite factors such as disliking school, expulsion, suspension, or problematic relationships with adults in the school as reasons for their early departure (Rumberger, 1987; Rumberger & Lim, 2009). One third of all females who drop out cite personal reasons for departing school, like marriage and pregnancy (Rumberger, 1987). Current studies of dropout programs and the literature on the reasons students dropout, even though still not complete, do propose some factors necessary to develop an efficient approach of dropout deterrence and recovery. These factors include (1) various programs constructed for various kinds of dropouts; (2) a suitable mix of non-educational and educational assistance in every program; (3) precise and timely clarification of high risk students of dropping out; and (4) programs constructed for early avoidance, late avoidance and recovery (Rumberger, 1987; Rumberger & Lim, 2008).

Background and Significance of the Study

Dropping out of high school has been connected to increasing social costs in the manner of elevated crime rates, higher rates of welfare receipt, health care expenditures and other kinds of government assistance (Caterall, 1985; Rumberger & Lim, 2008). U.S. Census data from 2010 state that high school

students who dropout gain lesser annual income than high school graduates (U.S. Census Bureau, 2011). This leads to an overall lower taxable income, negatively affecting the national tax base. In 2009, adults ages 25 and older who had dropped out of school or had not acquired a GED earned up to 41 percent less than those who had completed high school or had GEDs, according to the 2010 United States Census. The gap widened when comparing the incomes of high school dropouts with individuals who had attained bachelor's degrees.

In 2009, male and female college graduates earned $57,714 and $39,263 respectively, while male and female high school dropouts earned $21,629 and $13,943, respectively. In addition to potential earning power, dropping out of high school also negatively affects one's employability. Among adults, ages 25 and older, a lower percentage of dropouts are in the labor force compared with adults who earned a high school diploma (U.S. Department of Labor, 2010). In July 2009, the unemployment rate for high school dropouts was 15.4 percent, compared to 9.4 percent for high school graduates, 7.9 percent for individuals with some college credits or an associate's degree, and 4.7 percent for those with a bachelor's degree or higher (U.S. Bureau of Labor Statistics, 2009).

The highest drop out rates in the nation can be found in its largest cities. One third of all ninth graders in Philadelphia public schools fail to accumulate enough credits for graduation (Balfanz & Neild, 2006a). In the Chicago public school system, more than 40% of all freshmen fail at least one major subject during the first semester of high school (Allensworth & Easton, 2007; Roderick & Camburn, 1996). According to the National Center for Educational Statistics,

almost half a million young people drop out of high schools every year (NCES, 2004).

Over the last three decades expansive research has been conducted aimed at identifying the characteristics of students most likely to drop out of high school and the characteristics of the most successful drop out prevention programs. A comprehensive review of the literature for this study also provided insight into the demographic characteristics of the students most likely to drop out. Currently there is no research present that measures the success of credit recovery programs at the high school level.

The most significant statistic regarding urban high schools is the quantity of students who depart school without graduating. Although the phenomenon of students dropping out of high school is not restricted to just urban districts, the highest high school drop out rates continue to occur in large cities like Chicago, Baltimore, New York, Philadelphia and Detroit (Balfanz & Legters, 2001). The process of approximating the quantity of high school dropouts varies across both cities and school districts. Research examined for this study indicates that it is not unusual for dropout rates in urban districts to be well above 30 percent. District wide averages don't convey the story of a good number of seriously distressed urban high schools wherein fewer than half of freshmen gain a diploma in four to five years. Dropping out of high school is not a kind of "social deviance" in schools (Wehlage & Rutter, 1986), but a well-traveled direction. Students who depart school without completion or graduation usually have encountered an early

crisis in high school, particularly severe scholastic challenges during their first year, and in many cases, their first semester of high school.

The inadequate efforts of numerous big urban high schools to address the inaccurate scheduling of students in courses either above or below their ability levels in core subjects often contributes to further academic failures (Riehl, Pallas & Natriello, 1999; Weiss, 2001). A noteworthy observation is that the procedure of shifting between schools, from middle school to high school, is perhaps a root cause of the academic difficulties students experience at the ninth grade level, as opposed to any specific academic limitations inherent in the students as they arrive in high school (Werblow & Duesbery, 2009). Although research (Werblow & Duesbery, 2009) suggests that the transition to high school is a challenging one for urban students, and that a strong correlation between 9th grade retention and eventual high school non-completions exists, such research has yet to establish that a student's 9th grade experience alone is the single most influential factor in a student's eventual decision to drop out of high school (Balfanz & Neild, 2006a; Roderick & Nagaoka, 2004). Overall, this research suggests that a main starting point for overall dropout prevention is the ninth grade.

Research Questions

The purpose of this study was to examine the effects of participation in a summer school credit recovery program on high school completion for a cohort of ninth grade students who failed one, two or three core courses during their initial semester of high school work at an inner city high school. This study assessed the relationship between gender, race, course failure, and school of origin and

summer school credit recovery program participation and the relationship between race, gender, course failure, and school size and high school graduation. Lastly, this study will assess the relationship between participating in a summer school credit recovery program and graduating from high school.

I conducted a multivariate analysis of a cohort's summer school course taking history across a four- year period of time, from the 2006-2007 school year to the 2009-2010 school year. The sample consisted of approximately 1,878 ninth grade students, enrolled as first time freshmen during the fall 2006 semester, who failed one, two, or three core courses during their initial semester of high school.

(1) Are race, gender, number of course failures and school size associated with the likelihood of participating in a credit recovery program for 9th grade students failing core courses during their initial semester of high school?

(2) What is the relationship between participating in a credit recovery program and graduating from high school for 9th grade students failing core courses during their initial semester of high school?

(3) Are race, gender, number of course failures and school of origin associated with graduating from high school for 9th grade students failing core courses during their initial semester of high school?

Definition of Terms

The following significant terms will be used in this study:

High school completion: For the purposes of this study, high school completion consists of accruing the appropriate amount of academic credits (20) and passing scores on the Math, Reading, and Writing portions of the Arizona Instrument to Measure Standards (AIMS) assessment.

Credit Recovery Program: A program devised to provide students an alternative method of instruction that allows them to recover academic credits lost because of course failure.

Dropout: A student who quits school before graduation as defined by accruing the necessary amount of academic credits and passing the Arizona Instrument to Measure Standards in the areas of reading, writing, and mathematics.

Academic Performance: This term refers to how a student is performing in his or her prescribed coursework, generally measured on an A-F scale. Additionally the term refers to how well a student's performance on standardized assessments such as the Arizona Instrument to Measure Standards or the Stanford 9.

*Academic Failure***:** This term refers to students' failure to perform adequately enough to earn academic credit in a particular course. The term also refers to students' failure to perform adequately enough to pass the Arizona Instrument to Measure Standards as well as other standardized examinations.

Conceptual Perspectives

Presently there does not exist any one single theory addressing the specific reasons students choose to participate in various high school credit recovery programs or how these various programs differ in their success and participation rates. Several existing dropout theories state that the process of dropping out of high school is influenced by numerous factors, which include: social behaviors, academic and over-all school performance, educational environment, and general behavior. A few theories suggest that a student's decision to drop out of high school is the concluding stage, and final action taken in a long- term process of detachment or departure from school (Newmann et al., 1992; Whelage et al., 1989; Finn, 1989).

I have chosen to examine dropout theories for two main reasons. First, participation in a credit recovery program such as summer school requires a significant modification to the student's current educational setting. Most importantly, because student participation in credit recovery programs represents a departure from a traditional education program, dropout theories may prove useful in understanding these situations as well. In both instances, whether a student is dropping out of school all together or dropping out of their current instructional format to pursue their education in an alternative setting, such as through a credit recovery program, students are dissatisfied with their current educational setting.

Existing models vary on their views of how student background and school level variables interrelate to promote a slow detachment from school that

will eventually lead to a student choosing to drop out of school (Rumberger and Larson, 1998). Finn (1989) laid out two alternative models: (a) "frustration-self-esteem" model and (b) "the participation identification" model. The frustration self-esteem model states that the antecedent to school retreat is premature academic failure, which sequentially leads to a depletion of students' self-esteem. This depletion of self-esteem is manifested in the form of behavioral difficulties. As a result of these behavioral difficulties, students either voluntarily depart from school or are removed from school through the disciplinary process.

The second model proposed by Finn is the "participation-identification" model. Finn argues that the key antecedent for school dropout is an overall lack of involvement in scholastic programs and activities, which can result in a low level of academic performance and eventually concludes with isolation from school. The intention of this model is to acknowledge the importance of involvement in school programs and activities in a student's overall school experience. Finn's model also stresses that the gradual process of departing from school also includes several behavioral and emotional factors as well. The major limitations with Finn's model are that it fails to address the potential role that school policies and teacher preparedness could play in a student's decision to drop out of high school.

Finn's model, particularly his "frustration-self-esteem" model, is relevant for my study as it could address the high percentages of students in the Sun Valley High School District (the district of study) who fail core courses during the first semester of their ninth grade year, yet fail to graduate by their 12th grade year. As the descriptive statistics will show in Chapter 3, many of these study

participants experiencing early academic failure don't graduate at all. With regard to my study, Finn's "frustration-self-esteem" model is limited as it also purports that students experiencing early academic failure slowly become isolated from school, eventually dropping out. As my study is quantitative the extent to which study participants may have felt isolated from school will not be addressed.

Roderick (1996) discussed two theoretical viewpoints that address the gaps in Finn's model. According to Roderick there exist two theoretical viewpoints with regard to student achievement, the "intake perspective" and "school effects perspective" (Roderick & Camburn, 1999; Roderick, 1996). The intake perspective ascribes the elevated degree of academic failure amongst students to external factors beyond the school's control. These aspects include poverty, non-preparedness for high school, a lack of parental involvement in the child's education and engagement with the school, the transition from middle school to high school, and lack of adequate funding for public education (Roderick & Camburn, 1999; Roderick, 1996). The intake perspective additionally contends that students' function weakly at the high school level because they lack the academic abilities they need to be successful (Roderick & Camburn, 1999). Consequent policy arguments concentrate on the matter of recognizing which students are most vulnerable and what strategies are most effectively utilized to "remediate" these students (Roderick & Camburn, 1999). The basis of this perspective is that the challenges facing urban high schools and inhibiting their effectiveness are the result of societal and student factors rather

than factors related to the school's instructional practices and overall organization (Roderick & Camburn, 1999).

The "school effects" is a second theoretical perspective that describes the effect of school policies, instructional practices, and leadership on student achievement. School effects research proposes that organizational, environmental, and school instructional practices are the strongest determinant of student achievement apart from aspects of students' personalities, academic abilities, socio-economic status, ethnicity or gender (Battistich, Solomon, Kim, Watson, & Schaps, 1995; Lee & Bryk, 1989). A school effect may also be the degree that a pupil's enrollment in a specific school impacts student results (Raudenbush & Willms, 1996). For the said causes, the authors created two kinds of school effects, Type A and Type B (Willms & Raudenbush, 1989; Raudenbush & Willms, 1996).

Type A effects describe the disparity between the academic performance of a student at the student's current school and the student's performance if he/she were to be enrolled in a different school (Willms & Raudenbush, 1989; Raudenbush & Willms, 1996). The Type A effects are commonly what parents contemplate when choosing a school for their children (Willms & Raudenbush, 1989; Raudenbush & Willms, 1996). Examples of Type A effects include: the school's physical environment, racial and socio-economic demographics of teachers, staff, student population, school site, the environment around the school, socio-economic status of the surrounding community, and the quality of the school's athletic programming. Many parents choose a school that produces the

highest Type A effects, in spite of the school's teaching practices or student achievement (Willms & Raudenbush, 1989; Raudenbush & Willms, 1996).

While Type A effects are intended to describe external characteristics separate from a school's organizational structure, the Type B effects highlight the characteristics of a school's organizational structure that influence student achievement. Common Type B effects are school disciplinary procedures, organizational leadership, resource utilization, classroom settings, instructional practices, teacher preparedness, and school safety (Willms & Raudenbush, 1989; Raudenbush & Willms, 1996). Type B effects attempt to address the disparity between a student's academic performance in a specific school and the academic performance that might be expected if the student studied in another school, which has the same context, but may be less effective due to many of the aforementioned Type B effects. Most commonly, larger schools located in urban areas that serve high poverty, high minority student populations could likely generate Type B effects through effective instructional leadership, instructional practices and the overall abilities of the staff (Willms & Raudenbush, 1989; Raudenbush & Willms, 1996). While such a school may gain a well-deserved level of respect and admiration from school evaluators and colleagues, parents predominantly focused on Type A effects would not choose such a school for their children.

Roderick's "school effects perspective" and Raudenbush and Willm's "type B school effects" are highly applicable to my study. The creation of a summer school credit recovery program as an intervention for ninth grade

students experiencing early core course failure during their initial semester in high school is the result of a school's organizational leadership. The content and alternative instructional strategies utilized in these summer school classes are also examples of "type B school effects" as they are instructional practices directly influenced by the school's leadership. Lastly, the utilization of non-instructional time, in this case, summer break, to administer the credit recovery program represents the type of resource utilization that characterizes "type B school effects".

Another theory that could provide some insight as to why students participate in different types of high school credit recovery programs and why some credit recovery programs are more effective than others is the "theory of institutional departure from higher education" developed by Tinto (1987). The model closely parallel's Roderick's distinction between an "intake perspective" and "school effects and argues that the process of dropping out is first influenced by a series of personal attributes that predispose students to respond to different situations or conditions in particular ways (p. 109). These personal attributes include family background, skills and abilities, and prior school experience, all of which shape students' (intentions) and motivation (commitments) to continue their schooling (pp. 109-111). Once students enroll in a particular school, two separate dimensions of that school determine whether or not the student remains at that school.

There is a social dimension that deals with the social integration of the student with the school and an academic dimension that deals with the academic

integration of the student and the school. Tinto's model argues that both dimensions are strongly and directly influenced by the informal, as well as the formal, structure of the school. This theory could offer some insights for understanding student participation and success rates in credit recovery initiatives because it distinguishes between the commitment to the goal of graduating from high school and the commitment to the high school itself and how both of these commitments can be influenced by students' experiences over time (Tinto, 1987, p. 115). This model also suggests that all that is needed to remain in school is for students to be integrated and connected, even minimally, to the school's social system or academic system. A student that is committed to the goal of graduation, but is not integrated into the academic system of the traditional instructional program of the high school, might elect to participate in various credit recovery initiatives.

Although this theory has been widely cited in college dropout prevention research it can provide some additional insight to the high school drop out phenomenon. High schools almost mirror colleges and universities structurally. Both systems emphasize departmentalized instruction, an emphasis on the student's responsibility to negotiate and utilize resources within each system, and near-identical grading practices and policies. High schools also share commonalities with colleges and universities in the opportunities they offer students, through sports, clubs, and activities, for "student connectedness". Both settings offer students opportunities for both social and academic integration.

An additional strength of this theory, as it applies to high schools, is that it accounts for schools having multiple communities and subcultures (p. 119) to accommodate and support the different needs of students. This is especially true of the traditional comprehensive high school with its myriad of extra-curricular programs and activities.

It is Tinto's model that has most influenced my study in a few key areas. First, in acknowledgement of Tinto's assertion that personal attributes such as family background, skills and abilities, and prior school experience, shape students' (intentions) and motivation (commitments) to continue their schooling (pp. 109-111), my study assessed the relationship between race, gender, course failure and high school completion. I also analyzed the summer school course taking patterns, across a four-year period, of ninth graders experiencing core course failure during their initial semester of high school. Some of these students, after experiencing early academic failure, chose an alternative instructional setting (summer school) as opposed to dropping out of school.

It is this portion of my study that could validate Tinto's claim that students need only to be connected minimally to a school's social or academic system to remain in school. The students that successfully participate in the summer school credit recovery program recover credits lost due to previously failed courses. By getting "back on track" and reducing credit deficiency, such students may become re-connected to the school's academic system, thus remaining in school.

In summary, the aforementioned theories provide some insight into why students participate in credit recovery initiatives and why such initiatives may or

may not be successful. The relevancy of these theories to my study was also addressed, and I identified Tinto's model as the most influential upon the proposed study. With the exception of Tinto's work, the key limitation that all of the aforementioned theories share is that they seek to explain why students drop out of school all together, but not why some students leave a traditional instructional environment for a modified instructional environment in the same school.

Conceptual Framework

To carry out this study, I have constructed a conceptual framework that utilizes a combination of the theories explored in the previous section. The framework is illustrated in Figure 1. In reference to Tinto's and Wehlage's work, the framework distinguishes between two engagement types in school, social engagement and academic engagement. Absenteeism and disciplinary problems are characteristics of social engagement while course failure and credits earned are the main characteristics of academic engagement. Absenteeism and course failure both affect the student's scholastic stability, academic attainment, and certainly, the overall educational achievement of a student.

Both excessive absenteeism and academic course failure influence a student's educational stability. For the purposes of my study, course failure will be defined as a negative form of academic engagement, which if not intervened upon, will lead many students to eventually drop out of high school. The summer school credit recovery program will serve as "a type B school effect" for students experiencing course failure. If students successfully participate in the summer

school credit recovery program, they will successfully complete courses. When students successfully complete courses, they are engaged in a positive form of academic engagement that may eventually lead to high school graduation. Students accruing the necessary amount of academic credits per year are educationally stable. In the Sun Valley High School District, these students earn approximately 6 credits a year per grade level and generally do not experience issues related to absenteeism, truancy or discipline.

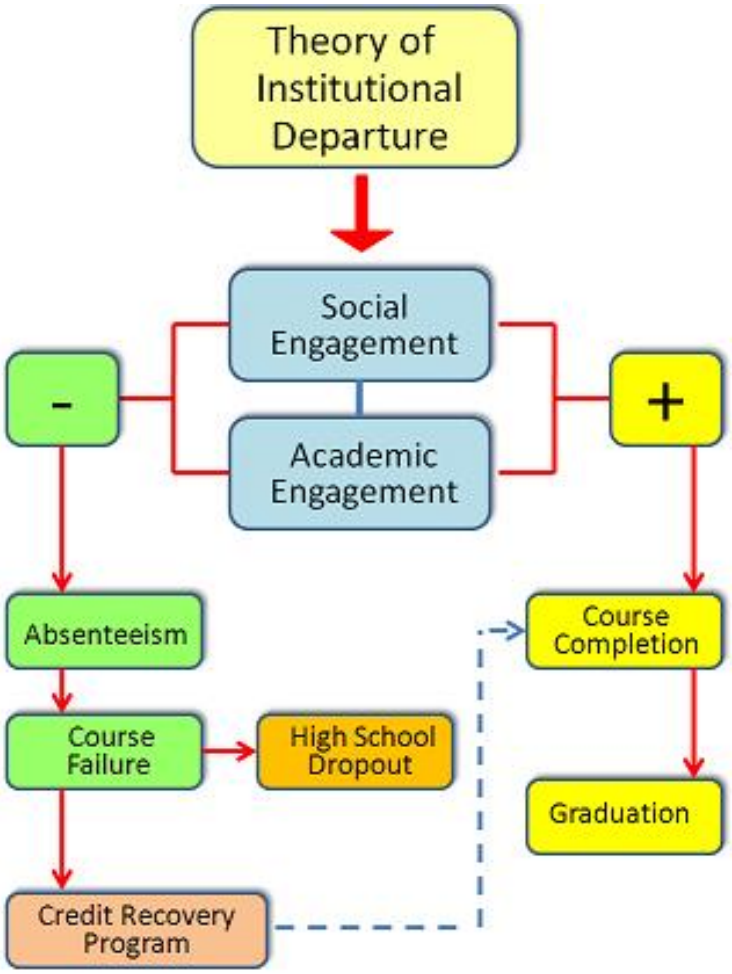

Figure 1. Correlation of Tinto's Theory of Instructional Departure to Course Failure that requires Credit Recovery Program

Students engaging in both high absenteeism and course failure fail to accumulate the necessary academic credits to graduate from high school "on track". On track is defined as accumulating at least 5 academic credits per grade level from the ninth to 12th grades. As credit deficiencies mount, student educational attainment is negatively impacted as such students are not able to graduate from high school with their entering class. Based on the work of Raudenbush and Willms (1986, 1996) my framework finally posits that credit recovery initiatives are examples of type B effects in schools that ultimately lessen or negate the impact of course failure on educational attainment. One important question about credit recovery initiatives this research attempts to address is: To what extent is student participation in school credit recovery opportunities beneficial or detrimental to high school completion?

Summary

The researcher believes there is a need to examine whether or not participation in a high school credit recovery program could influence a 9th grader's eventual graduation or departure from high school when the 9th grader experiences course failure during the initial semester of high school. Moreover, the study seeks to determine whether the implementation of credit recovery programs, such as the summer school credit recovery program in this study, will help increase high school graduation rates. Lastly, this chapter concluded with a discussion of various theories relating to a student's decision to drop out of high school as well as a conceptual framework, combining elements of Tinto's Theory of Institutional Departure from Higher Education, Finn's Frustration-Self-Esteem

model and Raudenbush and Wilm's Theory of School Effects to conduct the proposed study.

The next chapter will focus on past and recent research that examines the underlying reasons for dropping out of high school, the students most likely to drop out of school before the 12th grade, the role of school size as a variable influencing a student's decision to drop out of school, and the limited research conducted on summer school recovery programs and how they may or may not improve graduation rates.

In Chapter 3 I will present the rationale for my quantitative study to answer the research questions, the process for data collection, and the statistical analyses to be utilized. Chapter 4 will present and discuss the findings. In Chapter 5 I will provide an overview of the major findings, discuss the implications of my findings, and suggest some policy recommendations.

CHAPTER 2

LITERATURE REVIEW

The objective of this research is to explore the outcomes of a summer credit recovery program for high school students in a large, urban, high school only district for 9th graders who experienced core course failure during their initial semester in high school. An increase in high school dropout rates nationwide has resulted in schools developing and implementing credit recovery programs to battle the dilemma. This research is intended to analyze the effects of a summer credit recovery program for a cohort group of 9th graders across a four-year period. This chapter will include past and recent research that examines the underlying causes for dropping out of high school, specifically in ninth grade, the characteristics of students most likely to drop out of high school, and the variables of students' middle school experience and school size as potential predictors for high school non- completion. This literature review also includes a discussion on research examining credit recovery programs and how they may or may not improve graduation rates.

Ninth Grade Failure

Numerous studies examined for this literature review established academic failure during the first year of high school as one of the strongest influences on a student's eventual decision to drop out of high school (Alspaugh, 1998b; Somers & Piliawsky, 2004; Balfanz & Neild, 2006a; Roderick & Camburn, 1999; Neild, Eby & Furstenberg, 2008). In the Chicago Public School system, more than 40% of freshmen fail multiple classes during the first semester of their high school

career (Roderick & Camburn, 1999). In Philadelphia's Public School system, only one third of all freshmen are able to earn the necessary academic credit to move on to the 10th grade (Neild, Eby & Furstenberg, 2008). A third of all 9th graders who fail multiple classes during the first semester of their 9th grade year, never graduate from high school (Balfanz & Neild, 2006a; Roderick & Camburn, 1999; Neild, Eby & Furstenberg, 2008).

The two aforementioned Philadelphia and Chicago studies yielded several significant findings regarding 9th grade academic failure. It was determined that the percentage of courses a student fails in the ninth grade is a significant predictor of dropping out of high school (Roderick & Camburn, 1999; Neild, Eby & Furstenberg, 2008). Much research in the area of 9th grade academic failure suggests that there exist key semesters within the academic career of a student, that if not negotiated successfully, can translate into academic failure (Alspaugh, 1998a; Somers & Piliawsky, 2004; Balfanz & Neild, 2006a; Roderick & Camburn, 1999; Neild, Eby & Furstenberg, 2008). The first semester of ninth grade is considered to be one of the most crucial semesters in a student's high school career. At this time students must adjust to increases in school size, and the size of their peer groups (Balfanz & Neild, 2006a; Roderick & Camburn, 1999; Neild, Eby & Furstenberg, 2008).

Lastly, research in the area of 9th grade academic failure identifies African American and Hispanic males as the 9th graders most likely to fail courses during their initial semester of high school. African American males are more likely to fail at least one class during their first semester in high school whereas Hispanic

males are more likely to fail multiple courses during their initial semester (Balfanz & Neild, 2006a; Roderick & Camburn, 1999; Neild, Eby & Furstenberg, 2008). The courses most likely to be failed during the crucial first two semesters are Math and English, with the non-completion of work, poor attendance, and poor performance on assessments cited as the main factors in course failure for this group (Balfanz & Neild, 2006a; Roderick & Camburn, 1999; Neild, Eby & Furstenberg, 2008).

School Size & Grade Span

Public schools are larger today than they have ever been, increasing in size by almost 400% in the last 70 years (Werblow & Duesbery, 2009). There exists a clear relationship between the population size of a high school and its drop out rate (Werblow & Duesbery, 2009; Balfanz & Neild, 2006a; Roderick & Camburn, 1999). The larger the school, the more drop outs it produces. In the large comprehensive high schools of major urban school systems, drop out rates at or near 50% could mean the loss of thousands of students per cohort year (Neild, Eby & Furstenberg, 2008). The most hazardous year in the high school system is the 9th grade, as students who fail multiple classes during the first semester and the first year, are more likely to drop out of school by the 12th grade than students failing courses at any other grade level (Neild, Eby & Furstenberg, 2008; Roderick & Camburn, 1999; Lever, Sander, Lombrado, Randall, Axelrod, Rubenstein, & Weist, 2004).

The negative correlation between school size and the increase in the percentage of students who drop out may be attributable to a break down in

school climate. A sizeable increase in a student's peer group and bureaucratic structures combine to make it difficult for students to negotiate the school's system and culture (Werblow & Duesbery, 2009; Balfanz & Neild, 2006a; Roderick & Camburn, 1999; Roderick, 1996). School size literature states that the larger the school is, the more "de-personalized" the experience becomes for the students.

Teachers have increased class loads across multiple sections and are not always able to develop the personal relationships that students enjoy during their elementary school years (Werblow & Duesbery, 2009; Balfanz & Neild, 2006a; Roderick & Camburn, 1999; Roderick, 1996). An overall departmentalized curriculum places the high school teacher in the role of "content specialist", versus teacher of the whole student. As a result, student deficiencies in reading, writing or math are largely viewed as challenges to be addressed by those departments. Bryk and Thum (1989) found that small school sizes are an important variable that facilitates a more social environment and encourages the formation of positive relationships between students and staff.

The lowest drop out rates have been found in small rural high schools with a longer grade span of 7-12, versus the traditional 9-12 or 10-12 high school (Werblow & Duesbery, 2009). Students in these smaller high schools with longer grade spans enjoy more positive, interpersonal relationships with their peers and teachers, with an additional two academic years to do so (Werblow & Duesbery, 2009). This is in stark contrast to the experience of the urban 9th grader who exits middle school or elementary school only to become a member of a 700-1000

student 9th grade class. Many elementary school students making a transition from one grade level organization to the next grade level organization experience a loss in student achievement (Asplaugh & Harting, 1995; Werblow & Duesbery, 2009).

Students who attend 10-12th grade high schools experience more school-to-school transitions than students attending 7-12th grade high schools (Werblow & Duesbery, 2009).

A deterioration in school climate occurs in larger comprehensive high schools when a larger selection of course offerings fractures the student body into isolated groups (Asplaugh & Harting, 1995; Asplaugh, 1998). Students unable to move from class to class with their friends, are more likely to disengage from the school culture, thus leading to a deterioration in school climate (Asplaugh & Harting, 1995; Asplaugh, 1998). The older students are that have to make these transitions, the more likely it is they will drop out of school (Asplaugh & Harting, 1995; Asplaugh, 1998).

Not much research has been conducted on the relationship between school size and core content area academic achievement. There is a limited amount of research that has established a correlation between school size and math achievement (Werblow & Duesbery, 2009). Smaller schools have been found to have a greater positive impact on the overall drop out rate than they do on student achievement in mathematics (Werblow & Duesbery, 2009). What this research has established is that the smallest schools and the largest schools had the largest math gains (Werblow & Duesbery, 2009).

Small schools with 674 students or less as well as large schools with 2,592 students or more experienced the largest gains in math and the least amount of course failure in math (Werblow & Duesbery, 2009). It is posited by Werblow and Duesbery (2009) that the same expansion of course taking responsible for the deterioration of school climate may simultaneously allow the school to reach more levels of students mathematically via a more varied course selection. The variables of socio-economic status, race, and "urbanicity" (the extent to which a school could be described as low socio-economic status and as serving a high minority student population) were found to be stronger influences on math learning than the size of the school (Werblow & Duesbery, 2009). As in some of the other aforementioned studies examined in this work, this area of research advocates for an emphasis on how much academic growth students show from year to year, as opposed to cumulatively (Werblow & Duesbery, 2009).

Dropping Out as the Final Decision

Perhaps the strongest theme to emerge from just about every major study examined for this literature review, and a theme consistent with the theoretical framework of this study, is that of the nature of a student's decision to end their academic career by dropping out of school. In previous decades, such research was non-existent, as student drop out decisions tended to be viewed more as "one time" actions. Several studies indicate that a student's decision to drop out of school is not merely an impulsive action, it's the result of a cumulative process marked by truancy, disciplinary problems, academic underperformance, changing from one school to another, and grade retention (Bowers, 2010; Christle, Jolivette,

& Nelson, 2007; Weir, 1996). For this reason, much of the literature examined argues for increased instructional support for the 8th and 9th grade years as well as focused early intervention programs that promote immediate academic recovery (Bowers, 2009; Roderick & Camburn, 1999).

Course failure, truancy and disciplinary problems have been identified as key variables that influence a student's decision to drop out of school. Poor course performance, as measured by teacher assigned grades has been identified as a distinguishing characteristic of the students most likely to drop out (Bowers, 2009; Balfanz & Neild, 2006a). Research primarily conducted in Philadelphia has shown that course performance, specifically in the 8th and 9th grades can be used to identify drop- outs several years before they leave school (Balfanz & Neild, 2006a). In addition to the use of teacher assigned grades, attendance for eighth and ninth graders was also used to identify the students most likely to drop out before the 12th grade (Balfanz & Neild, 2006a).

These results paralleled what was found in Chicago, that test scores were not as predictive of graduation as students' performance in their coursework (Balfanz & Neild, 2006a; Roderick & Camburn, 1999). Other risk factors that have been strongly associated with high drop out percentages are failing grades at the middle school level, coming from a single parent household, sibling dropout, absenteeism, disciplinary problems, and grade retention (Balfanz et al., 2007; Eckstein & Wolpin, 1999; Gleason & Dynarski, 2002; Roderick, 1993). Consistent with Tinto and Finn's work, the literature on students' lack of motivation to remain in school strongly suggests that the decision to drop out is

not based on one single factor or variable. It is instead the cumulative effect of multiple risk factors, influencing students over long periods of time within a district (Alexander et al., 2001; Jimmerson et al., 2000; Randolph & Orthner, 2006).

Credit Recovery Programs

Students experiencing a higher rate of academic course failure or truancy are at a higher risk of dropping out of high school than students who pass all or most of their courses. To reconnect these students academically, many schools provide additional academic assistance in the form of credit recovery programs (Dynarski et al., 2008). There are four types of credit recovery programs that are widely used in high schools across the country; mentoring/ tutoring, alternative school placement, service learning, and after school opportunities. Mentoring programs focus on fostering a supportive relationship between a mentor and a mentee that is based on trust.

In most mentoring programs mentors are successful and caring adults who take an active interest in working with young adults, particularly, those young adults at risk for dropping out of high school. In many mentoring programs, fellow students who are succeeding academically, serve as mentors for struggling peers. Tutoring differs from mentoring in that it focuses exclusively on academics. Tutoring is a commonly used strategy for addressing specific needs such as reading, writing, or math competencies. Though older, two major national studies have reported positive results from mentoring programs. Tierney and Grossman (1995) reported a 37% decrease in truancy among participants in

the Big Brother/Big Sister programs of the Philadelphia metropolitan area. The Commonwealth Fund's Survey from 1998 found a 52% decrease in truancy among participants of mentoring programs nationwide (McLearn, Colasanto, & Schoen, 1998).

Service learning is another commonly used type of credit recovery program that connects meaningful community service experiences with academic learning. This method emphasizes personal and social growth, career development, and civic responsibility. Studies of the effects of service learning on grades and attendance, and dropout reduction indicate that students who participate in these programs are more likely to graduate from high school than students who don't (Shumer & Duckenfield, 2004b, p. 156). In addition to mentoring, tutoring, and service learning programs, many schools opt for alternative schooling as an additional strategy for providing credit recovery opportunities.

Alternative schooling provides potential dropouts a variety of options that can lead to graduation. Many times, this requires the student to change schools. Many districts have designated "small schools" that serve as alternative educational settings for students not experiencing academic or behavioral success on their home campuses. The district examined in this study has such schools. Currently there are three "educational academies" that serve the comprehensive high schools of the Sun Valley High School District. These schools serve students who have been long term suspended, have experienced severe truancy, and those students deficient in credit accumulation.

The most prevalent method of academic intervention provided by schools is the utilization of additional study time and opportunities beyond the school day for credit accumulation. This type of credit recovery program most commonly consists of remedial courses (e.g., before or after-school or summer programs). A common characteristic of most after school credit recovery programs is that students can work closely with teachers individually or in small groups to complete coursework required to graduate.

In addition to utilizing a combination of mentoring, service learning, and after school programs an increasing number of schools utilize online learning as an alternative for credit recovery (Watson & Gemin, 2008). The utilization of technology as an alternative option to the conventional classroom setting individualizes the instruction and permits for flexibility of scheduling. Existing research on the effectiveness of online credit recovery programs cites that the main challenge of these programs is that many lack strategies necessary to sustain student motivation and engagement. Successful online learning programs focus on improving independent learning skills, discipline, and awareness of technology based skills needed to become more efficient online learners (e.g., Cavanaugh et al., 2004; Hannafin, 2002).

Limited but current research on the effectiveness of credit recovery programs overall indicate that they have a positive influence on attendance rates and passing rates on state standardized tests (Kemple, Herlihy, & Smith, 2005).

Effectiveness of Summer School Credit Recovery Programs

As mentioned in the previous section, the utilization of additional time before or after the school day, or week for academic recovery is one of the most widely used types of credit recovery programs used by high schools. This study focuses on a credit recovery program in the Sun Valley High School District that uses students' summer vacation time to offer them an additional credit recovery opportunity. Summer school is one of the most common and efficient approaches to credit recovery used by many schools across the nation. When assessing the level of success for any credit recovery program, it is important to focus on how "success" is defined.

Some programs are successful at keeping students enrolled in school, others are more successful at increasing student achievement, and some are more successful with course passing rates and credit recovery. The most general and widely used measurement of success for students in summer school programs is the conventional letter grade. Though more and more, summer programs have incorporated new summative assessment techniques including comprehensive final exams, online learning assessments, and portfolio based assessment, the letter grade is still the primary measure of academic achievement for students in these courses (Aiken, 2004; Baenen, 2000).

The most common types of summer school credit recovery programs offer students a chance to retake courses previously failed, thus, focusing on remediation. Though the research on summer school program effectiveness is still emerging, these programs have been found to be effective in improving

standardized test scores in reading and math (Walker & Vilella-Velez, 1992). Studies also indicate that high school students who take Algebra classes in summer school programs perform better than students who choose to retake their Algebra classes during the school day or year and that overall, summer school programs increase students' skill levels in math (Baenen & Lloyd, 2000; Haenn, 2001; Aiken, 2004). These findings are of particular interest to this study as Algebra was the course most commonly failed by study participants.

Summary

The research examined in this chapter addressed the factors most likely to influence a student's decision to drop out of high school, the different methods employed by schools to provide academic support and credit recovery opportunities to students, and the effectiveness of summer school credit recovery programs. The findings from significant studies in both Chicago and Philadelphia indicated not only that course failure the initial semester of 9th grade year is a significant predictor of a student likely to drop out of high school before the 12th grade, but also that African American and Hispanic males are the 9th graders most likely to fail multiple courses during the initial semester of 9th grade year.

The size of a school was also noted to be a factor in the phenomenon of students dropping out of high school before the 12th grade. It is posited that small schools offer the best opportunities for drop out prevention as their size fosters a higher level of school connectedness for students and an opportunity for deeper and more positive relationships with adult staff members. Numerous studies examined in this chapter also established that a student's decision to drop out of

high school is not a one time, impulsive decision, but more the final action taken in a long process of negative school experiences marked by truancy, school disengagement, disciplinary problems, poor relationships with adults in school, and poor academic performance.

Research conducted in both the Chicago and Philadelphia public school systems identified academic and behavioral difficulties as early as the 6th grade as strong indicators of the students most likely to drop out of high school before the 12th grade. This same research also identified other risk factors that have been strongly associated with high drop out percentages such as failing grades at the middle school level, coming from a single parent household, sibling dropout, absenteeism, disciplinary problems, and grade retention. Lastly, research examined addressing the effectiveness of summer credit recovery initiatives indicated that students tend to be more successful with remedial courses in these programs than with remedial courses offered during the traditional school day. Study findings in both North and South Carolina indicated that Algebra, tended to be the course that students were most successful at completing during summer school than during the school year.

Chapter 3 will expound upon and rationalize my decision to use a multivariate analysis to answer the research questions, the process for data collection, the statistical analyses to be utilized for the study, a description of all independent and dependent variables, and the study population's descriptive statistics. Chapter 3 will conclude with a discussion of the limitations of this study.

CHAPTER 3

RESEARCH DESIGN AND METHODS

Introduction

The literature reviewed in the previous chapter noted that students who fail core courses during the first semester of ninth grade are more likely to drop out of high school than students who pass their core courses. African American and Hispanic males are the students most likely to fail multiple courses the initial semesters of their freshman years. Finally, students participating in summer school credit recovery programs tend to perform better in these courses than students who take these remedial courses during the school year and during the traditional school day. School size was also associated with school drop out rates. While there is some research on the effectiveness of summer school credit recovery programs, a significant research gap remains. The studies from North Carolina or South Carolina did not address the possible effects of the timing or frequency of summer school participation.

The goal of this study was to understand the possible impact of participation in a summer school credit recovery program for 9^{th} graders who failed one or more core courses the first semester of their freshman year. To do this I first determined if the number of courses failed, race, and gender are associated with the likelihood of participating in a credit recovery program. I also assessed whether or not there is a relationship between participating in a credit recovery program, race, gender, course failure, and graduating from high school.

The study population covers all 9th grade students in the Sun Valley High School District (SVHSD).

I studied one cohort's summer school course taking history across a four-year period of time, from the 2006-2007 school year to the 2009-2010 school year. I identified the number courses students failed and the number of times students participated in the district's summer school credit recovery program. This allowed me to assess the relationship between these variables and participants' high school completion.

Variables and Data Sources

I used student-level data for this analysis. The independent variables for this study are the number of core courses a student failed during the first semester of ninth grade, gender, race/ethnicity, school size and the frequency of participation in the district's summer school credit recovery program. High school completion is measured as a binary variable, which indicates that a student accrued at least 20 credits and passing scores on the Reading, Writing, and Math sections of the Arizona Instrument to Measure Standards (AIMS) standardized assessment. All of the variables are indicator variables. There are ten freshmen through senior grade level high schools in the Sun Valley High School District. Schools vary in size ranging from 1,300 students to almost 3,100.

The Sun Valley High School District

The participants selected for this study were first time 9th grade students during the 2006 – 07 school year in the SVHSD, who failed between one and three core courses throughout the 2006 fall semester. In SVHSD, core courses for

the 9th grade are Algebra 1, English 1 and Physical Science 1. SVHSD is a high school district situated in the inner city section of a major metropolitan area in the southwestern United States and is comprised of ten comprehensive high school campuses with each school site ranging from between 1,400 to 3,100 students during the first semester of this study (See Table 3.1).

Table 3.1

Quarterly Enrollment by School: SVHSD Fall 2006-2007

	Quarter 1 (9/5/06)	Quarter 2 (12/5/06)
3	3,015	2,828
7	2,985	2,810
6	2,170	2,022
4	2,331	2,162
5	2,376	2,195
1	2,632	2,486
2	2,668	2,453
8	2,283	2,090
9	2,872	2,697
10	1,394	1,349
11	322	373
14	135	126
15	76	80
13	63	61
Total	25,322	23,732

The district also features four small schools that specialize in alternative placement for special education, occupational education, and technological programs. I excluded the specialty schools from this analysis, as they are schools of choice for students who self select into specialized programs. The total enrollment for the 9th grade class of the SVHSD at the conclusion of the 2006 – 2007 fall semester was 7,453 students, the majority of which were African American or Hispanic (See Table 3.2).

Table 3.2

Fall Semester Student Enrollment by Race/Ethnicity, 2002-2007

	Asian	Afr. Amer.	Hispanic	Nat. Amer.	Anglo
2002-03	1.5%	10.5%	71.2%	3.0%	13.8%
2003-04	1.5%	10.1%	72.8%	3.2%	12.3%
2004-05	1.4%	9.9%	74.6%	3.5%	10.6%
2005-06	1.4%	10.0%	75.7%	3.6%	9.3%
2006-07	2.6%	10.0%	78.2%	3.1%	6.1%

The Sun Valley High School District has undergone a significant demographic shift in its student population since the 2002-03 school year. During the time period between the 2002-03 school year and the 2006-07 school year the percentage of Hispanic students increased by almost 8% while the percentage of Anglo students decreased by almost 8% (See Table 3.2).

The SVHSD offers summer school courses every summer to all students currently enrolled in its schools, free of charge. Summer school classes compress the conventional eighteen-week semester to four weeks while lengthening the instructional period in that subject from fifty-five minutes per day to approximately two hundred forty minutes per day. Summer school classes are offered in a Monday through Thursday format with Fridays serving as off days for both students and staff. Summer school participation offers students the opportunity to make up one class, for a .5 credit every summer school session. Study participants had three opportunities to attend summer school, the summer session following their ninth, tenth, or eleventh grade year. The district offers only one summer school session in June every year.

Sample and Descriptive Statistics

The sample is comprised of Sun Valley High School District (SVHSD) students who were enrolled as first time ninth graders during the 2006-2007 school year who failed one, two or three core courses during the Fall 2006 semester, what would have been the initial semester of their high school careers. For the purposes of this study, core courses for ninth graders were defined as Algebra 1, English 1 and Physical Science 1. Participation in the district's summer school credit recovery program was defined as a student's decision to take courses they previously failed during the school year, in the summer. Twenty-five percent of the 7,453 student freshman class in 2006-07, or 1,878 ninth graders failed between one and three courses in their first semester of high

school, which amounted to 8% of the district's 23,732 students and approximately 25% of its 7,453 student freshman class.

Of these students, 43% were female and 57% were male (See Table 3.3). Hispanic students comprised 79 % of the study population while African American students represented 11%, Anglo students 4%, and Native American students represented less than 1% (See Table 3.3). These demographics very closely mirror those of the district as a whole (see Table 3.2). Of the 1,878 participants identified for this study, 71.9% failed one core course, 24.7% failed two core courses, and 3.4% failed three core courses during the fall 2006 semester (See Table 3.3). 67% of the study participants did not attend the summer credit recovery program while 23.6% took one course in the program, 7.8% took two courses, and 1.8% of the study participants took 3 courses in the program (See Table 3.3). Of the overall study population, 25% of the participants met the district's high school completion requirements while 75% failed to meet these requirements and eventually graduate (See Table 3.3).

Less than a quarter of the study participants met the requirements for high school completion, which is consistent with the research examined for the literature review that suggested that 9th graders failing one or more core classes during their first semester in high school are the students most likely to drop out of school before the 12th grade. Freshmen failing one core course during the Fall Semester of 2006 represented 71.9% of the study population (See Table 3.3). Of this 72% of study participants, only 21% met the requirements for high school completion. Students failing two or more core courses constituted 25% of the

total population as well as a lower percentage of students meeting the high school graduation requirements than students who failed only one core course as 22% of these two course failure students graduated (See Appendix L). Lastly, ninth grade students who failed three core courses during the Fall Semester of 2006 represented 3% of the total study population and yielded the lowest percentage of students meeting the requirements for high school completion (See Appendix L). This data suggests that the more core courses freshmen in SVHSD fail their initial semester in high school, the less likely they are to graduate.

Perhaps the most notable observation made during my initial analysis of the data is that 66% of the 1,878 study participants never took a single course in the summer school credit recovery program (See Table 3.3). The vast majority of these students (88%) did not meet the requirements for high school completion (See Appendix J). High school completion was more likely for the 34% of the 1,878 study participants who did take courses in the summer school credit recovery program (See Appendix J). The highest percentage of students who met the high school completion requirements belonged to those study participants who took three summer school courses, one course in the 9^{th}, 10^{th}, and11^{th} grade (See Appendix L). Of the 33 study participants in this category, 25 of these students, or 75% met the requirements for high school completion in the SVHSD (See Appendix L). All ten schools in the study averaged close to a 50% high school completion rate for students electing to participate in the summer school program.

Table 3.3

Descriptive Statistics

Variable	Mean (SD)
Completed high school	.25 (.43)
Attended summer school	.33 (.47)
Race	
Black	.11 (.31)
Hispanic	.79 (.41)
White	.06 (.23)
American Indian	.04 (.20)
Asian	.01 (.08)
Male	.57 (.50)
Course failure	
One course failed	.72 (.45)
Two/three courses failed	.28 (.45)
Summer school attendance	
Never attended	.67 (.47)
Attended once	.24 (.42)
Attended 2-3 times	.10 (.29)
School of Origin	
School A	.12 (.33)
School B	.09 (.29)
School C	.16 (.37)
School D	.39 (.49)
School E	.08 (.27)
School F	.09 (.29)
School G	.12 (.33)
School H	.12 (.33)
School I	.10 (.30)
School J	.04 (.19)

Logistic Regression Analysis

Binary logistic regression is the method that best addresses this study's research questions as it will model the relationship between high school completion and high school non-completion. It will also model the relationship between summer school participation and summer school non-participation (binary outcome variables of high school completion and summer school participation) and the independent variables of school size, race, gender, frequency of summer school participation, and course failure.

Logistic regression has the advantage of not requiring the strict statistical assumptions that linear regression requires. The few assumptions typically considered are as follows: linearity (linear relationship between any continuous predictor and the logit of the outcome variable), independence of errors (cases of data should not be related), and multi-collinearity (predictors should not be too highly correlated) (Field, 2009). As the predictors for this study were all categorical the above listed assumptions were not a concern.

For both analyses sample size requirements, especially when the categories of the predictor variables were considered, were reviewed. The next chapter will discuss the contingency tables used to cross tabulate the frequency counts of all variables. The first research question addressed the relationship of summer school program participation with race, gender, school attended, and course failure. The second research question addresses the relationship between student background variables, course failure, and school size with high school graduation. The last research question addresses the relationship with

participation in a summer school credit recovery program and high school graduation. A total of 1,878 cases were analyzed. My goals were to better assess the factors associated with students' participation in the summer school credit recovery program and the relationship between participating in a credit recovery program and graduating from high school.

The descriptive statistics described above suggest the need to conduct a multivariate study to address the proposed research questions. The summer school credit recovery program is offered on a yearly basis however, participants' summer school participation rates varied considerably. A participant may fail numerous courses during their 9th grade year yet not participate in the summer school program until the 11th grade.

The main analyses were conducted using binary logistic regression. In particular, utilizing the same sample, two main analyses were conducted. First, I analyzed the relationship between three sets of variables and summer school participation in three models. Model 1 included race and gender to assess if student background characteristics predicted summer school program participation. Model 2 added the variable of course failure to assess the relationship between this variable and participation in the summer school credit recovery program. Model 3 added the indicator variables for course failure while observing the two or three courses failed group as the omitted comparison category. Lastly, Model 4 added the indicator variables for the schools the students attended.

In my second analysis I analyzed the relationship between six sets of variables and high school graduation in six models. Model 1 included race and gender to assess if student background characteristics were predictors of high school graduation. Model 2 added the number of course failures in order to assess the relationship between this variable and graduating from high school. Model 3 added the variable of summer school participation in order to assess the relationship between attending or not attending the summer school program and graduating from high school. Model 4 added the indicator variables for course failure with the "two or three courses failed" group designated as the omitted comparison category. Model 5 added the indicator variables for summer school participation with the "never attended" group designated as the omitted comparison category. Finally, Model 6 added the indicator variables for the schools the students attended. Logistic regression analyses were conducted using SPSS (version 18).

Limitations

While this research examining the effectiveness of a summer school credit recovery program promises to contribute greatly to existing research, there are some key limitations to this study. One main limitation of this study lies in the area of middle school experience. As this project focuses on course failure during the first semester of high school for first time freshmen, information about the students' middle school experience would be extremely helpful. Though limited, there does exist research, some of which is mentioned in the literature review, which suggests differences in academic performance exist during the first year of

high school for students coming from traditional K-8 elementary middle schools and those coming from traditional 6-8th grade middle schools.

This research suggests that school-to-school transitions impact student achievement. Because students in traditional 6-8th grade middle schools experience an extra school transition between elementary school and middle school, they often experience more difficulties during the first semester of high school. There are 13 elementary school districts that feed into the Sun Valley High School District, districts that use both traditional K-8 models and traditional middle schools. These elementary school partner districts were unable to provide any of the participants' course failure information for their years of middle school.

While course failure is the focus of this study, it should be noted that only course failure during the first semester of freshman year has been examined. The SVHSD is a high school district serving grades nine through twelve. The students that passed all of their courses during their initial semester in high school during the fall of 2006, yet failed one or more courses during the ensuing spring semester of 2007, or at any point during their 10th, 11th or 12th grade year were excluded from this study.

One final limitation to this study is that I cannot distinguish between mandatory and voluntary participation in credit recovery initiatives. Throughout the SVHSD, guidance counselors use a combination of both strategies. At some schools, grade or credit reports are generated, and students are simply registered for the summer school courses they need. In other schools, guidance counselors

go into homeroom classes and give presentations regarding the benefits of participating in summer school and students register voluntarily. I have no way to determine whether students volunteered for placement or if they were placed in these programs. Future research should examine whether or not voluntary or mandatory attendance influences students' summer school participation and high school graduation.

Summary

In this chapter, I have discussed the research design for my analysis of both summer school program participation and high school graduation. An initial review of the descriptive statistics suggested that a multivariate analysis would best address the research questions. I examined the study group's summer school course taking history across a four year period of time, from the 2006-2007 school year to the 2009-2010 school year. This allowed me to analyze patterns in courses failed and the number of times students participated in the district's summer school credit recovery program. In the next chapter I turn to the multivariate analysis, which will contribute to the limited, but growing, body of research regarding the effectiveness of credit recovery programs at the high school level.

CHAPTER 4

FINDINGS

The goal of this study was to understand the possible impact of participation in a summer school credit recovery program and high school graduation for 9th graders who failed one, two, or three core courses the first semester of their freshman year. My study sought to determine if the number of courses failed, race, and gender are variables associated with the likelihood of participating in a summer school credit recovery program and if participating in a summer school credit recovery program, race, gender, and course failure are associated with a higher likelihood of graduating from high school. In my analysis I address the relationship between race and gender and participation in the credit recovery program, and how all of these variables in turn are associated with the likelihood of graduating. I also address possible school effects on summer school participation and graduation.

Data Analysis Procedure

Given the research questions being addressed and the categorical nature of the measures of the variables the main analyses were conducted using binary logistic regression. Two analyses were conducted using the same sample of students. First, I analyzed the relationship between three sets of variables and summer school participation in three models. Model 1 included race and gender to assess whether or not student background characteristics predicted summer school program participation. Model 2 added indicator variables for course failure while observing the two or three courses failed group as the omitted comparison

category. Lastly, Model 3 added indicator variables for the schools the students attended.

In all models for this analysis indicator variables for race/ethnicity were white, Hispanic, black, Asian, and American Indian. White was the omitted comparison category for race and "female" the omitted comparison category for gender. The indicator variables for course failure were one course failed and two or three courses failed with "two or three courses failed" as the omitted reference category. The indicator variables for school of origin were schools A-J. "School G" was the omitted reference category.

My second analysis sought to analyze the relationship between six sets of variables and high school graduation in six models. Model 1 included race and gender to determine whether or not student background characteristics were predictors of high school graduation. Model 2 added the number of course failures in order to assess the relationship between this variable and graduating from high school. Model 3 added the variable of summer school participation in order to assess the relationship between attending or not attending the summer school program and graduating from high school. Model 4 added the indicator variables for course failure with the "two or three courses failed" group designated as the omitted comparison category. Model 5 added the indicator variables for summer school participation with the "never attended" group designated as the omitted comparison category. Finally, Model 6 added the indicator variables for the schools the students attended. As in the first analysis,

the indicator variables for race, gender, school of origin, course failure, and their omitted reference categories remained the same.

Logistic Regression Analysis

Logistic regression analysis was the statistical analysis most appropriate for this study as it allowed me to predict my two outcomes using the variables I described above: participation in credit recovery and high school graduation. Logistic regression has the advantage of not requiring strict statistical assumptions unlike other multivariate analysis tools. The few assumptions typically considered are as follows: linearity (linear relationship between any continuous predictor and the logit of the outcome variable), independence of errors (cases of data should not be related), and multicollinearity (predictors should not be too highly correlated) (Field, 2009). As the predictor variables for this study were all categorical the aforementioned assumptions were not a concern. Sample size requirement in all models where the categories of the predictor variables were considered were reviewed. Three contingency tables were generated which cross-tabulated the frequency counts of all variables. The first table cross-tabulated the frequency counts of gender, race, course failure, and summer school participation (Appendix J).

The second table cross-tabulated the frequency counts of summer school participation, school size, school of origin, and high school graduation (Appendix K). The third table cross-tabulated the frequency counts of gender, race, course failure, and high school graduation (Appendix L). Inspection of all three contingency tables indicated that the number of students who had three failures

(n=60) was substantially small and it would be problematic to break this category down further across variables such as designating three groups, those who failed one course, two courses, or three courses. To enhance the statistical power of the analysis, reduce sampling error, and improve identification, the variable "number of failures" was recoded so that those who incurred two and three course failures were combined under one category. In effect, the number of failures was reduced to two categories: one failure group, and the two or more failures group.

This adjustment did not affect the overall sample size of 1,878 participants remaining in the study, of which 75% (n=1,401) did not complete high school. Among study participants who finished high school (n=465), 85% (n=394) had one failure during their 9th grade year, 86% were Hispanics, 9% were Blacks, 4% Whites, and 2% were American Indian. The contingency table in Appendix C summarizes the resulting data cells.

An Analysis of Summer School Program Participation

The first analysis conducted examined the relationship between three sets of variables and summer school participation in three models. Table 4.1 provides the coefficients for the series of logistic regression models and the odds ratios for the predictor variables, which are the exponentiations of the coefficients. Model 1 assessed the association between race, gender and participation in the summer school credit recovery program (-2 Log likelihood = 2371.49 chi square = 13.673, df = 5, p<.018) (see Table 4.1). A test of the full model against a constant only model was not statistically significant. However, Nagelkerke's R2 of .010

and Cox and Snell's R2 of .007 (see Table 4.1) indicated a weak relationship between this set of indicator variables and summer school program participation.

Appendix A provides the coefficients, Wald statistic, associated degrees of freedom and probability values for each of the predictor variables. Model 1 predicted an overall summer school participation percentage of 66.9% indicating a .331 probability of attending summer school. The Wald criterion demonstrated that being an American Indian student made a significant contribution to the prediction (p= .045). Gender was not a significant predictor of summer school participation. The Exp (B) value in Table 4.1 indicates that American Indian students are .540 times less likely to participate in the summer school program than white students.

Course Failure and Summer School Participation

In Model 2 I added the indicator variable for course failure. The model fit the data well (-2 Log likelihood = 2349.640 chi square = 21.850, df = 1, p<.000) (see Table 4.1). A test of the full model against a constant only model was statistically significant. The Nagelkerke's R2 of .019 and Cox and Snell's R2 of .026 indicated a weak relationship between this set of indicator variables and summer school program participation but course failure did, however, account for an additional 1.9% to 2.6% additional summer school participation not explained by race and gender alone (see Table 4.1).

Even when I controlled for course failures, the results indicated that American Indian students are .540 times less likely to participate in the summer school program than white students and that students who only fail one core

course are almost twice as likely to participate in the summer school credit recovery program than students who fail two or three courses.

School of Origin & Summer School Participation

In Model 3 I added schools A-J as the indicator variables for school of origin. "School G" was the omitted comparison category. Once again the model statistics fit the data well (-2 Log likelihood = 2314.086 chi square = 35.554, df = 9, p<.000) indicating a weak relationship between the predictor variables and the prediction (see Table 4.1). A test of the full model against a constant only model was not statistically significant. The Nagelkerke's R2 of .052 and Cox and Snell's R2 of .037 indicated a weak relationship between this set of indicator variables and summer school program participation but did, however, account for an additional 2.7 to 3.7% additional summer school participation not explained by the variables included in Model 2.

Model 3 predicted an overall summer school participation percentage of 67.1% indicating a .339 probability of attending summer school. Appendix C reflects the coefficients, Wald statistic, associated degrees of freedom and probability values for each of the predictor variables. The coefficients for American Indian (p= .047), failing one course (p= .000), and attending schools E (p= .008) & J (p= .011) were all statistically significant. The Exp (B) values indicated that American Indian students are .537 times less likely to participate in the summer school program than white students after controlling for course failure and school attended, that students who only fail one core course are almost twice as likely to participate in the summer school credit recovery program than

students who fail two or three courses, and that students who attend school J are more than twice as likely to participate in the summer school program than students who attend school G while the students who attend school G are .459 times more likely to participate in the summer school credit recovery program than students who attend school E.

An Analysis of High School Graduation

My second analysis examined the relationship between six sets of variables and high school completion in six models. Table 4.2 provides the coefficients for the series of logistic regression models and the odds ratios for the predictor variables, which are the exponentiations of the coefficients. Model 1 assessed the relationship between race, gender and high school graduation. A test of the full model against a constant only model was statistically significant (-2 Log likelihood = 2066.270 chi square = 35.916, df = 5, p<.000). The Nagelkerke's R2 of .028 and Cox and Snell's R2 of .019 (see Table 4.2) indicated a weak relationship between race, gender and high school graduation.

Model 1 predicted a 33% probability of graduating from high school. The Wald criterion demonstrated that being African American and male were statistically significant (p= .045). The Exp (B) values in Table 4.2 indicate that black students are 1.5 times more likely to graduate from high school than white students after controlling for gender and males are .70 less likely to graduate from high school than females.

Course Failure and High School Graduation

For Model 2 the indicator variable of course failure was added. The model fit the data poorly (-2 Log likelihood = 2013.274 chi square = 52.996, df = 1, p<.000). A test of the full model against a constant only model was statistically significant. The model indicated a 33% probability of graduating from high school. Nagelkerke's R2 of .069 and Cox and Snell's R2 of .046 indicated a nominal relationship between race, gender and high school graduation. This model explains an additional 2.7 to 4.1% additional high school graduation not explained by race and gender alone. The Wald criterion demonstrated that being male (p= .001) and experiencing course failure (p= .000) were statistically significant. The Exp (B) values in Table 4.2 indicate that even after controlling for course failure female students are .70 more likely to graduate from high school than male students and that as the number of courses failed increases, the likelihood of high school graduation decreases.

Summer School Participation & High School Graduation

In Model 3 I added the predictor variable of summer school participation. The model again fit the data poorly (-2 Log likelihood = 1706.115 chi square = 307.159, df = 1, p<.000). A test of the full model against a constant only model was statistically significant. The Nagelkerke's R2 of .282 and Cox and Snell's R2 of .190 indicated a strong relationship between this set of indicator variables and high school graduation. Model 3 explains an additional 14.4 to 21.3% additional high school graduation not already explained by the variables included in Model 2

and an additional 18.1 to 25.4% additional high school graduation not explained by race and gender alone.

Model 3 indicated a 33% probability of graduating from high school. The coefficients for male (p= .002), black (p=.02), course failure (p= .000), and whether or not students attend the summer school program (p= .000) were all statistically significant. The Exp (B) values in Table 4.2 indicate that black students are almost twice as likely to graduate from high school than white students after having experienced course failure and attending summer school. They also indicate that females are .687 times more likely to graduate from high school than male students and that as the number of course failures increases, the likelihood of high school graduation decreases. Lastly Exp (B) values indicate that students who attend summer school are almost 8 times more likely to graduate from high school than students who do not attend.

Frequency of Course Failure and High School Graduation

In Model 4 "one course failed" was added as the indicator variable for course failure. "Two or three courses failed" was the omitted reference category. The model fit the data poorly (-2 Log likelihood = 2013.274 chi square = 52.996, df = 1, p<.000) (see Table 4.2). A test of the full model against a constant only model was statistically significant. The Nagelkerke's R2 of .069 and Cox and Snell's R2 of .046 indicated a nominal relationship between this set of variables and high school graduation. This model accounts for an additional 4.1 to 2.3% additional high school graduation not explained by the variables included in Model 1, almost identical to the variation explained in Model 2, when course

failure was added to the model as a predictor variable without the indicator variables of one, two, or three courses failed.

Model 4 indicated a 33% probability of graduating from high school. The coefficients for male (p= .001), black (p= .057), and one course failure (p= .000) were all statistically significant .The Exp (B) values indicated that black students are almost twice as likely to graduate from high school than white students after having experienced course failure and that females are .703 times more likely to graduate from high school than male students after controlling for the number of courses failed. They also indicate that as the number of course failures increases, the likelihood of high school graduation decreases.

Frequency of Summer School Participation, Course Failure & High School Graduation

In Model 5 "attending summer school once" and "attending summer school twice or thrice" were added as indicator variables for summer school participation. "Never attended summer school" was the omitted reference category. As with the previous models, this model fit the data poorly (-2 Log likelihood = 1681.140, chi square = 332.134, df = 2, p<.000). A test of the full model against a constant only model was statistically significant. The Nagelkerke's R2 of .298 and Cox and Snell's R2 of .201 (see Table 4.2) indicated a strong relationship between race, gender, the amount of courses failed, the frequency of summer school participation and high school graduation. The model explains an additional 18.2 to 27.0% additional high school graduation not explained by race and gender alone in Model 1.

Table 4.1

Summer School Participation Analysis

	Model 1 B (Odds Ratio)	Model 2 B (Odds Ratio)	Model 3 B (Odds Ratio)
Black	-.05 (.95)	-.07 (.93)	-.01 (.10)
Hispanic	-.49 (.61)	-.45 (.63)	-.44 (.65)
American Indian	-.62 (.54)	-.63 (.53)	-.62 (.54)
Asian American	-1.78 (.17)	-1.86 (.16)	-1.73 (.18)
Male	-.09 (.91)	-.09 (.91)	-.07 (.93)
One Failure		.53 (1.70)	.53 (1.71)
A			.04 (1.04)
B			-.23 (.80)
C			-.19 (.83)
D			-.26 (1.30)
E			-.78 (.46)
F			.17 (1.19)
H			.18 (1.20)
I			.07 (1.08)
J			.78 (2.17)
Constant	-.55 (.58)	-.93 (.39)	-1.08 (.34)
Chi-Square	13.67	21.85	35.5
DF	5	6	15
Sig.	.02	.00	.00
-2 Log Likelihood	2371.49	2349.64	2314.09
Nagelkerke R-square	.01	.03	.05
Cox & Snell R- square	.01	.02	.04

Table 4.2

High School Graduation Analysis

	Model 1 B (Odds Ratio)	Model 2 B (Odds Ratio)	Model 3 B (Odds Ratio)	Model 4 B (Odds Ratio)	Model 5 B (Odds Ratio)
Black	.38 (1.46)	.36 (1.43)	.50 (1.64)	.36 (1.43)	.53 (1.70)
Hispanic	-.17 (.85)	-.11 (.90)	.21 (1.24)	-.11(.90)	.30 (1.35)
American Indian	-.67 (.51)	-.70 (.50)	-.47 (.63)	-.70 (.50)	-.49 (.61)
Asian American	-19.79 (.00)	-19.89 (.00)	-19.22 (.00)	-19.89 (.00)	-19.106 (.00)
Male	-.36 (.70)	-.35 (.70)	.38 (.69)	-.35 (.70)	-.38 (.68)
Course Failure		.97 (.38)	-.86 (.42)	*********	**********
SS Attend or Not			2.03 (7.61)	*********	**********
Attend SS Once					1.77 (5.87)
Attend SS Twice or Thrice					2.70 (14.88)
One Course Failed				.97 (2.63)	.88 (2.40)
Constant	-1.18 (.31)	.01 (1.01)	-1.139 (.32)	-1.93 (.15)	-2.90 (.06)
Chi-Square	35.91	88.91	396.07	88.91	421.05
DF	5	6	7	6	8
Sig.	.00	.00	.00	.00	.00
-2 Log Likelihood	2066.27	2013.27	1706.12	2013.27	1681.14
Nagelkerke R-square	.03	.07	.28	.07	.30
Cox & Snell R-square	.02	.05	.19	.05	.20

Appendix H reflects the coefficients, Wald statistic, associated degrees of freedom and probability values for each of the predictor variables. The full model indicated a 22.1% probability of graduating from high school. The Wald criterion demonstrated that being male (p= .002), being black (p= .013), experiencing one course failure (p= .000), attending summer school once (p= .000), and attending summer school twice or thrice (p= .000) were all statistically significant. EXP (B) values indicate that black students are almost twice as likely to graduate from high school than white students after experiencing course failure and attending summer school one or more times. They also indicate that females are 1.7 times more likely to graduate from high school than male students after having experienced course failure and attending summer school one or more times and that as the number of course failures increases, the likelihood of high school graduation decreases. Lastly EXP (B) values indicate that students who attend summer school once are approximately 6 times more likely to graduate from high school than students who never attend and students who attend summer school twice or more are almost 15 times more likely to graduate from high school than students who never attend.

Summary

In this chapter I discussed the findings of my analyses of the relationship between three sets of variables and summer school participation in three models and the relationship between six sets of variables and high school graduation in six models. Findings from my first analysis on summer school participation indicated that race and gender have little or no influence on a student's decision to

participate in summer school, and that Indian students are less likely to participate in the summer school program than white students. Course failure emerged as the indicator variable most likely to influence a student's decision to participate in summer school and that as the number of course failures increases the likelihood of summer school participation decreases. Findings further indicated that students who fail one core course are almost twice as likely to participate in the summer school program than students who fail two or three courses. Lastly, results from my analysis indicated that a student's school of origin has a nominal influence on whether or not a student participates in summer school as the students of School J are twice as likely to participate in the summer school program than the students of School G.

The second part of this chapter discussed the findings of my analysis on high school graduation. The results of this analysis indicated a weak relationship between race and gender and students' ability to graduate from high school. Black students, however, were identified as being almost twice as likely to graduate from high school than white students after controlling for gender while males were identified as being less likely to graduate from high school than female students. Course failure was identified as being statistically significant as a predictor of high school graduation. As the number of courses failed increases the likelihood of graduation decreases.

Summer school participation emerged as a key predictor (Exp (B)= 7,61) of high school graduation for study participants, accounting for between 18 to 25% of the variation in high school graduation than the predictor variables of race

and gender alone. The findings illustrated that students who participate in the summer school program once are almost six times more likely to graduate from high school than students who never attend the program and students who attend the program two times or more are almost 15 times more likely to graduate from high school than students who never attend the program. Lastly, a student's school of origin was not a statistically significant predictor of high school graduation. In the final chapter that follows I summarize and discuss these findings, present the implications of my study, and state my conclusions.

CHAPTER 5

SUMMARY, DISCUSSION, IMPLICATIONS AND CONCLUSIONS

As an aid to the reader, this concluding chapter of my dissertation restates the research problem and reviews the methodology used to conduct the study. The major sections of this chapter will summarize and interpret the results presented in Chapter 4 and discuss their implications. The chapter will also discuss the relationship of this study to existing research in the field of credit recovery effectiveness and will make some recommendations based on this study's findings. The chapter concludes with some suggestions for further study necessary to advance credit recovery program effectiveness research.

Research Problem & Methodology Review

As discussed in Chapter 3, this study analyzed the relationship between summer school program participation and high school graduation for freshman students in the Sun Valley High School District failing one or more core courses in the fall semester of 2006, the initial semester of their high school careers. The study also addressed the relationship between race, gender, school size, course failure and summer school participation as well as race, gender, school size, course failure, summer school participation, and high school graduation. Logistic regression analysis was used to analyze the relationship between three sets of variables and summer school participation in three models and the relationship between five sets of variables and high school graduation in five models.

Summary of Results

Summer School Participation Analysis

First, and most importantly, there were some disturbing findings regarding overall program attendance. Of the 1,878 study participants, all of whom were freshman who failed one or two or more core academic courses during their first semester of high school, 67% never attended the summer school program. The majority of these non-summer school-attending students (88%) did not meet the requirements for high school completion (See Appendix J). Making this finding more troubling is the fact that summer school participation increases a student's likelihood of graduation after students experience early course failure. The high school completion rate for students who participated in the summer school program was 51% versus a 12% high school completion rate for the 1,256 ninth graders who chose not to participate in the summer school program after failing one or more core courses during their first semester of high school (See Appendix K).

My first multivariate analysis addressed the relationship between race, gender, course failure, school size and summer school participation. With regard to summer school participation for study participants there were several key findings. First, while race and gender were not significant predictors of summer school program participation, course failure was associated with summer school participation. Course failure influenced summer school participation both positively and negatively. Study participants who failed more than one course during their first semester of high school coursework were less likely to participate in the program. These students were twice as likely to never attend the program than students who only failed one course. A student's school of

attendance also was associated with summer school participation. Students at one of the district's smallest campuses (School E) were more than two times more likely to participate in the summer school program than the students at one of its largest campuses (School G).

High School Graduation Analysis

My second multivariate analysis addressed the relationship between race, gender, course failure, school size, and high school graduation. It also addressed the relationship between summer school participation and high school graduation for study participants. First, contrary to research examined in Chapter 2, race and gender were not found to be predictors of high school graduation while the number of courses failed was associated with high school graduation. The more courses students failed the less likely they were to graduate from high school. Students who only failed one course during their initial semester of high school were almost three times more likely to graduate from high school than students who failed two or more courses. Course failure was even more detrimental as noted in the previous analysis. The more courses students failed, the less likely they were to attend the summer school program. Not only are students who fail multiple classes less likely to graduate from high school, they are also less likely to participate in the summer school program, a program shown to be effective at increasing the likelihood of high school graduation for students experiencing course failure.

Perhaps the most important finding from this analysis was that relating to the effectiveness of the SVHSD summer school program for students who

participated in it. The more students attended the summer school program, the more likely they were to graduate from high school. Students who attended the program were almost eight times more likely to graduate from high school than students who never attended the program, while students who attended the program two times or more were almost 15 times more likely to graduate from high school than students who never attended. In examining the influence of summer school participation on high school graduation for study participants, the program accounted for more than 20% the variation in high school graduation not explained by race, gender, and course failure.

Discussion of the Results

Interpretation of the Findings

Given the effectiveness of the summer school credit recovery program and the devastating effects of course failure noted in the previous section, it is clear that the "Type B" school effects discussed in Chapter 2 matter greatly. The good news for administrators and policy makers is that if an intervention program such as the SVHSD summer school credit recovery program can increase the likelihood of high school graduation for at risk students, then this finding provides evidence that school policies, practices, and intervention programs have a stronger influence on student achievement than student background variables such as race and gender. The bad news for administrators and policy makers is that if the SVHSD summer school program represents the best of "Type B" school effects, then course failure represents the worst of them.

Course failure is clearly the biggest obstacle facing the SVHSD in its mission of increasing student achievement. Not only does course failure decrease the likelihood that students will graduate from high school, it also decreases the likelihood of students participating in the intervention program most likely to guide them towards high school graduation. Consistent with the research examined in Chapter 2, which named course failure as a key predictor of the 9th grade students most likely to drop out of high school, 88% of the students who chose not to attend summer school did not graduate from high school.

The State of Summer School in the SVHSD

Summer school works in the SVHSD. Unfortunately almost 70% of the students who could benefit from the program the most never attend it. Each year the SVHSD spends $1.4 million to administer the summer school credit recovery program on each of its ten comprehensive campuses. The majority of these funds are utilized for teacher salaries, classroom materials, transportation, and student meals. The findings do not imply that SVHSD should eliminate the program. Rather, SVHSD should examine the student recruitment and selection processes utilized at each site to schedule students for summer school. The program, if attended by all students experiencing course failure, has the potential to dramatically increase the amount of students graduating from SVHSD schools each year. Due to such poor participation rates, summer school courses around the SVHSD average 16.2 students per class, almost 15 fewer students than the average number of students enrolled in SVHSD courses during the school year, so room for growth is not an obstacle for increased participation.

Relationship of the Current Study to Previous Research

This dissertation relates to and furthers existing research in the fields of dropout prevention and credit recovery program effectiveness in various ways. First, in my study, as noted in the literature examined in Chapter 2, African American and Hispanic males were the two groups of students most likely to fail multiple courses during their first semester of high school coursework. They were also students least likely to graduate after experiencing course failure. Next, my study also confirmed the identification of 9th grade course failure as an important predictor of dropping out of high school before the 12th grade. In the SVHSD, one fourth of its freshman class failed one or more core courses during the fall of 2012, their initial semester in the district. The vast majority of these students never graduated from high school.

This study also confirmed the existing literature's findings on the effectiveness of credit recovery programs. This research, examined in Chapter 2, indicated that students who participate in credit recovery programs are more likely to graduate from high school than students who don't. As the findings in the last chapter noted, the students of the SVHSD who participated in the summer school program, even just once, were more likely to graduate from high school than students who did not participate. Students who participated in the summer school program two times or more were the most likely to graduate from high school.

This dissertation contributes to existing research on the effectiveness of credit recovery program effectiveness in a few main areas. First, unlike existing

studies, my study focused on summer school credit recovery participation for ninth graders experiencing course failure. Next, this study established that the frequency of summer school participation increased the likelihood of graduation. Finally, this study established a relationship between the frequency of course failure and high school graduation; the more courses a student failed, the less likely they were to graduate.

Suggestions for Additional Research

While this research examining the effectiveness of a summer school credit recovery program contributes to existing research on the subject, some of its limitations suggest opportunities for additional research. One main limitation of this study lies in the area of middle school experience. As this project focused on course failure during the first semester of high school for first time freshmen, information about the students' middle school experience would be extremely helpful. Though limited, there does exist some research suggests that there are differences in academic performance during the first year of high school for students coming from traditional K-8 elementary middle schools compared to those coming from traditional 6-8th grade middle schools (Werblow & Duesbery, 2009). Because students who attend 6-8th grade middle schools experience an extra school transition between elementary school and middle school, they often experience more difficulties during the first semester of high school (Werblow & Duesbery, 2009). There are 13 elementary school districts that feed into the Sun Valley High School District, districts that have both traditional K-8 models and traditional middle schools. For this study, these elementary school partner

districts were unable to provide any of the participants' middle school course failure information. A follow up study might look at the relationship between type of middle school attended, course failure in middle school, ninth grade course failure and high school graduation.

While this study focused on the experiences of students who experienced ninth grade course failure, only course failure during students' first semester of freshman year was examined. The SVHSD is a high school district serving grades nine through twelve. Members of the class of 2010 who passed all of their courses during their initial semester in high school during the fall of 2006, yet failed one or more courses during the ensuing spring semester of 2007, or at any point during their tenth, eleventh, and twelfth grade years were excluded from this study. Considering that my findings have confirmed the effectiveness of the summer school program in the SVHSD for ninth graders, the program's impact upon tenth through twelfth grade students experiencing course failure should be explored. Such a study could potentially indicate the grade level in which students are most likely to participate in the summer school program, what year of participation is most influential upon graduation, and the grade level in which students are least likely to participate in the program.

Another possible area for additional research comes is mandatory placement in credit recovery initiatives versus voluntary participation. Throughout the SVHSD, guidance counselors use a combination of both strategies. At some schools, participation in the summer school program is mandatory for students failing to meet credit accumulation guidelines at each

grade level. In other schools, guidance counselors go into homeroom classes and give presentations regarding the benefits of participating in summer school and students register voluntarily. For this study, I was unable to determine whether students volunteered for placement or if they were placed in these programs. Future research should examine whether or not voluntary or mandatory attendance influences students' summer school program performance, high school graduation, and additional course failure. Such a study's findings could indicate whether or not students who are mandated to attend the summer school program, or those who volunteer to attend the program are more or less likely to experience less course failure after attending the program and graduate at a greater frequency. Ideally, a qualitative study would best be able to explore students' overall experience in summer school, examine relationships with teachers, class size, courses selected, as well as the students' mandatory or voluntary participation.

Suggestions for Fellow Educators

Freshman Orientation

As supported by this dissertation's findings, and the "*school effects*" literature reviewed for this study, the policies, practices, and interventions implemented by schools have a greater impact on high school graduation for this group of students than their race and gender. As the findings detailed in Chapter 4 indicated, school conditions such as course failure and summer school program participation are key predictors of high school graduation for ninth graders experiencing first semester course failure. The biggest challenge facing the Sun Valley High School District is the course failure of its ninth graders, during their

initial semesters of high school in the district. According to my findings, if ninth grade course failure can be reduced, the need for summer school can be reduced, and students will be more likely to graduate from high school.

The Sun Valley High School District, and other inner city high school districts like it, may benefit from district wide freshman orientation programs. Such programs could help students form and sustain positive relationships with teachers, navigate the support structures and resources available at their schools, and focus on understanding credit requirements and impact of course failure. The research examined in my review of the literature on dropout prevention research indicated that problematic relationships with adults in school and students' general lack of understanding how to navigate the support structures and resources available in schools increase the likelihood of dropping out of high school. As each student entering the high school system is accountable for accumulating a certain amount of elective credits, such a program could be formatted into a yearlong class specifically designed to give first time ninth graders these valuable skills.

Summer School Program Implementation

If the Sun Valley High School District seeks to maximize the program's benefits for all students, especially the students experiencing the greatest amount of course failure, it must re-examine its current implementation of the summer school program. The majority of students who would benefit most from attending the program never attend. The SVHSD summer school program is an effective credit recovery program and should not be eliminated or downsized. An analysis

of the average class size of summer school courses between the 2006-07 school year and the 2012-11 school year indicated that each teacher services an average of close to 17 students, half the average class size of courses offered during the school year in the Sun Valley High School District. There is room for the effectiveness of the program to reach more students. The district would benefit most by exploring other ways to provide access to this program during the school year or during the school day because many students are not completing the summer school program in its current format.

It is this finding that has impacted me most as a practitioner. Knowing the challenges of the summer school format at my school, which like the schools of the SVHSD, required students to take course work during the summer, I modified its format during the 2010-2011 school year. My high school now features an evening school opportunities program. In essence, it is the summer school model re-formatted into 3 hour periods, four days a week over a six week session. With the traditional 18 week semester, there are 3 six week sessions built in to both the fall semester and the spring semester.

Students now have six different extended day opportunities sessions to meet their credit recovery needs each year, without having to rely exclusively on the once occurring summer school session in June. Though only entering into its third year, the program has already almost doubled the amount of students enrolled per class for each six-week session with a class size average of 31 students for the 2012-2013 school year. Taking into account some of the literature reviewed in Chapter 2 regarding effective credit recovery program

formats, I re-formatted my school's summer school program in an attempt to increase student participation and enhance its effectiveness. The schools of the Sun Valley High School District would benefit greatly by doing the same as the message from this study's findings is clear: the program is effective but its current format may need to be re-visited. An important step in this assessment would be an analysis of the participation and graduation rates of students that participate in the extended day credit recovery compared to the summer school credit recovery program.

Addressing Course Failure

Course failure is deadly in the Sun Valley High School District, especially for first year students. The more courses a student fails, the less likely they are to graduate from high school, and even worse, the less likely they are to participate in a credit recovery program proven effective at helping students recover from academic failure. The SVHSD could take significant steps at reducing the number of ninth grade students experiencing course failure by researching and analyzing the main causes of course failure throughout the district. Such research should begin with the students who have failed classes as well as those who continue to fail.

These findings regarding course failure moved me to action as a high school principal who serves a student population similar to that of the SVHSD. During the 2011-2012 school year, my school implemented a student advisory period. Modifying our long existing daily bell schedule, we were able to create an additional 60 minute period on Wednesday of each week. Every teacher on

campus is assigned 23 students, of the same grade level, and the same counselor, for this one period. The teachers' role is to check grades and attendance for their assigned advisory students on a weekly basis and to contact parents and counselors accordingly for academically struggling students, especially ninth graders. While my own research into why students continue to fail courses in the school I lead continues, this initiative is only a first step in our attempts to meet this challenge. Only by identifying and understanding the factors that most influence course failure, whether it is student absenteeism, lack of high school readiness, or restrictive grading practices, can the SUVHS design and implement a targeted intervention aimed at successfully reducing course failure.

I close my dissertation with a renewed feeling of hope. It is clear that in the case of the SVHSD, for students that experience course failure in the ninth grade, the practices, policies, and interventions employed at each school are a stronger predictor of high school graduation than race and gender. The summer school program is effective at lessening the negative impact of course failure and guiding students toward high school graduation. These findings renew my hope and faith in our system of public education, and affirm the moral responsibility that my colleagues and I share as educational leaders to create student centered instructional, operational, and disciplinary practices and policies in the schools we lead. For these very conditions will determine the academic fate of the students we lead. In a very real way, we as educational leaders, hold our students' future not in our hands, but in our schools.

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APPENDIX A

SUMMER SCHOOL PARTICIPATION ANALYSIS: MODEL 1 SUMMARY

Table A.1

Student Background Variables & Summer School Participation

	B	S.E.	Wald	df	Sig.	Exp(B)
Black	-.052	.158	.106	1	.745	.950
Hispanic	-.489	.271	3.252	1	.071	.613
Indian	-.615	.307	4.024	1	.045	.540
Asian	-1.783	1.055	2.856	1	.091	.168
Male	-.101	.099	1.045	1	.307	.904
Constant	-.548	.158	12.009	1	.001	.578

Table A.2

Omnibus Tests of Model Coefficients

	Chi-square	df	Sig.
Step	13.673	5	.018
Block	13.673	5	.018
Model	13.673	5	.018

Table A.3

Model Summary for Student Background Variables and Summer School Participation

-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
2371.491[a]	.007	.010

APPENDIX B

SUMMER SCHOOL PARTICIPATION ANALYSIS: MODEL 2 SUMMARY

Table B.1

Race, Gender, Course Failure and SS Participation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Black	-.069	.159	.185	1	.667	.934
	Hispanic	-.454	.273	2.774	1	.096	.635
	Indian	-.629	.308	4.159	1	.041	.533
	Asian	-1.861	1.056	3.103	1	.078	.156
	Male	-.091	.100	.824	1	.364	.913
	one_failure	.530	.116	20.955	1	.000	1.699
	Constant	-.933	.181	26.585	1	.000	.393

Table B.2

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	21.850	1	.000
	Block	21.850	1	.000
	Model	35.523	6	.000

Table B.3

Model Summary for Gender, Race, Course Failure

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	2349.640[a]	.019	.026

APPENDIX C

SUMMER SCHOOL PARTICIPATION ANALYSIS: MODEL 3 SUMMARY

Table C.1

Race, Gender, Course Failure, School of Origin, and Summer School Participation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Black	-.009	.165	.003	1	.958	.991
	Hispanic	-.438	.277	2.498	1	.114	.645
	Indian	-.622	.313	3.960	1	.047	.537
	Asian	-1.726	1.060	2.651	1	.103	.178
	Male	-.070	.101	.476	1	.490	.933
	one_failure	.534	.117	20.839	1	.000	1.706
	A	.040	.241	.028	1	.868	1.041
	B	-.226	.260	.758	1	.384	.798
	C	-.185	.186	.997	1	.318	.831
	D	.258	.238	1.179	1	.278	1.295
	E	-.780	.292	7.120	1	.008	.459
	F	.170	.252	.455	1	.500	1.185
	H	.182	.239	.582	1	.445	1.200
	I	.072	.207	.121	1	.728	1.075
	J	.776	.305	6.470	1	.011	2.172
	Constant	-1.083	.258	17.669	1	.000	.339

Table C.2

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	35.554	9	.000
	Block	35.554	9	.000
	Model	71.077	15	.000

Table C.3

Model Summary for Race, Gender, Course Failure and SS Participation

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	2314.086[a]	.037	.052

APPENDIX D

HIGH SCHOOL GRADUATION ANALYSIS: MODEL 1 SUMMARY

Table D.1

Race, Gender and High School Graduation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Black	.378	.187	4.091	1	.043	1.460
	Hispanic	-.167	.315	.283	1	.595	.846
	Indian	-.673	.397	2.883	1	.090	.510
	Asian	-19.787	11572.352	.000	1	.999	.000
	Male	-.362	.108	11.253	1	.001	.696
	Constant	-1.184	.185	40.772	1	.000	.306

Table D.2

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	35.916	5	.000
	Block	35.916	5	.000
	Model	35.916	5	.000

Table D.3

Model Summary for Race, Gender and High School Graduation

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	2066.270[a]	.019	.028

APPENDIX E

HIGH SCHOOL GRADUATION ANALYSIS: MODEL 2 SUMMARY

Table E.1

Race, Gender, Course Failure and High School Graduation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Black	.361	.189	3.634	1	.057	1.434
	Hispanic	-.108	.319	.114	1	.735	.898
	Indian	-.700	.400	3.069	1	.080	.496
	Asian	-19.892	11489.672	.000	1	.999	.000
	Male	-.353	.109	10.389	1	.001	.703
	recode_no_of_fails	-.966	.142	46.417	1	.000	.381
	Constant	.012	.252	.002	1	.962	1.012

Table E.2

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	52.996	1	.000
	Block	52.996	1	.000
	Model	88.911	6	.000

Table E.3

Model Summary for Race, Gender, Course Failure, and High School Graduation

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	2013.274[a]	.046	.069

APPENDIX F

HIGH SCHOOL GRADUATION ANALYSIS: MODEL 3 SUMMARY

Table F.1

Summary School Participation, Race, Gender, Course Failure and High School Graduation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Black	.499	.208	5.736	1	.017	1.647
	Hispanic	.214	.344	.385	1	.535	1.238
	Indian	-.466	.430	1.175	1	.278	.627
	Asian	-19.216	11184.360	.000	1	.999	.000
	Male	-.376	.121	9.593	1	.002	.687
	recode_no_of_fails	-.858	.153	31.479	1	.000	.424
	attend_or_not	2.029	.122	278.579	1	.000	7.605
	Constant	-1.139	.282	16.259	1	.000	.320

Table F.2

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	307.159	1	.000
	Block	307.159	1	.000
	Model	396.070	7	.000

Table F.3

Model Summary for Summer School Participation, Course Failure, Gender, Race and High School Graduation

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	1706.115[a]	.190	.282

APPENDIX G

HIGH SCHOOL GRADUATION ANALYSIS: MODEL 4 SUMMARY

Table G.1

Race, Gender, Frequency of Course Failure and High School Graduation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Black	.361	.189	3.634	1	.057	1.434
	Hispanic	-.108	.319	.114	1	.735	.898
	Indian	-.700	.400	3.069	1	.080	.496
	Asian	-19.892	11489.672	.000	1	.999	.000
	Male	-.353	.109	10.389	1	.001	.703
	one_failure	.966	.142	46.417	1	.000	2.627
	Constant	-1.920	.220	75.926	1	.000	.147

Table G.2

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	52.996	1	.000
	Block	52.996	1	.000
	Model	88.911	6	.000

Table G.3

Model Summary for Race, Gender, Frequency of Course Failure and High School Graduation

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	2013.274[a]	.046	.069

APPENDIX H

HIGH SCHOOL GRADUATION ANALYSIS: MODEL 5 SUMMARY

Table H.1

Race, Gender, Frequency of Course Failure, Frequency of SS Attendance and HS Graduation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Black	.528	.212	6.183	1	.013	1.695
	Hispanic	.296	.346	.732	1	.392	1.345
	Indian	-.489	.439	1.240	1	.266	.614
	Asian	-19.106	11257.293	.000	1	.999	.000
	Male	-.383	.123	9.762	1	.002	.682
	one_failure	.877	.155	31.875	1	.000	2.403
	once	1.770	.133	178.242	1	.000	5.871
	twiceorthrice	2.700	.186	210.284	1	.000	14.877
	Constant	-2.896	.257	126.851	1	.000	.055

Table H.2

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	332.134	2	.000
	Block	332.134	2	.000
	Model	421.045	8	.000

Table H.3

Model Summary for Race, Gender, Frequency of Course Failure, Frequency of SS Participation and HS Graduation

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	1681.140[a]	.201	.298

APPENDIX I

HIGH SCHOOL GRADUATION ANALYSIS: MODEL 6 SUMMARY

Table I.1

Race, Gender, Frequency of Course Failure, Frequency of SS Attendance, School of Origin, and HS Graduation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Black	.527	.219	5.795	1	.016	1.695
	Hispanic	.308	.350	.774	1	.379	1.361
	Indian	-.439	.450	.951	1	.329	.645
	Asian	-18.969	11255.659	.000	1	.999	.000
	Male	-.370	.124	8.929	1	.003	.690
	one_failure	.885	.156	32.111	1	.000	2.424
	once	1.758	.134	171.409	1	.000	5.800
	twiceorthrice	2.691	.189	202.179	1	.000	14.742
	A	.342	.294	1.351	1	.245	1.408
	B	.111	.319	.120	1	.729	1.117
	C	-.285	.230	1.537	1	.215	.752
	D	.215	.296	.526	1	.468	1.240
	E	-.472	.359	1.728	1	.189	.624
	F	-.376	.325	1.337	1	.248	.686
	H	.319	.296	1.164	1	.281	1.376
	I	-.316	.261	1.458	1	.227	.729
	J	.629	.363	3.008	1	.083	1.877
	Constant	-2.978	.346	74.010	1	.000	.051

Table I.2

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	20.677	9	.014
	Block	20.677	9	.014
	Model	441.722	17	.000

Table I.3

Model Summary for Race, Gender, Frequency of Course Failure, Frequency of SS Participation and HS Graduation

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	1660.464[a]	.210	.311

APPENDIX J

CONTINGENCY TABLE/ CROSS TABULATION #1: GENDER / RACE / COURSES FAILED / SS PARTICIPATION

Gender	Race		Course Failure	SS Participation Never	Attended	Total
Female	White	1	Count	33	30	63
			Expected Count	36.1	26.9	63.0
			%	52.4%	47.6%	100.0%
		2-3	Count	18	8	26
			Expected Count	14.9	11.1	26.0
			%	69.2%	30.8%	100.0%
		Total	Count	51	38	89
			Expected Count	51.0	38.0	89.0
			%	57.3%	42.7%	100.0%
	Black	1	Count	286	185	471
			Expected Count	304.4	166.6	471.0
			%	60.7%	39.3%	100.0%
		2-3	Count	127	41	168
			Expected Count	108.6	59.4	168.0
			%	75.6%	24.4%	100.0%
		Total	Count	413	226	639
			Expected Count	413.0	226.0	639.0
			%	64.6%	35.4%	100.0%
	Hispanic	1	Count	25	3	28
			Expected Count	25.2	2.8	28.0
			%	89.3%	10.7%	100.0%
		2-3	Count	11	1	12
			Expected Count	10.8	1.2	12.0
			%	91.7%	8.3%	100.0%
		Total	Count	36	4	40
			Expected Count	36.0	4.0	40.0
			%	90.0%	10.0%	100.0%

Gender	Race		Course Failure	SS Participation Never	Attended	Total
	Indian	1	Count	18	8	26
			Expected Count	18.4	7.6	26.0
			%	69.2%	30.8%	100.0%
		2-3	Count	6	2	8
			Expected Count	5.6	2.4	8.0
			%	75.0%	25.0%	100.0%
		Total	Count	24	10	34
			Expected Count	24.0	10.0	34.0
			%	70.6%	29.4%	100.0%
	Asian	1	Count	3		3
			Expected Count	3.0		3.0
			%	100.0%		100.0%
		2-3	Count	1		1
			Expected Count	1.0		1.0
			%	100.0%		100.0%
		Total	Count	4		4
			Expected Count	4.0		4.0
			%	100.0%		100.0%
Male	White	1	Count	49	26	75
			Expected Count	53.0	22.0	75.0
			%	65.3%	34.7%	100.0%
		2-3	Count	28	6	34
			Expected Count	24.0	10.0	34.0
			%	82.4%	17.6%	100.0%
		Total	Count	77	32	109
			Expected Count	77.0	32.0	109.0
			%	70.6%	29.4%	100.0%

Gender	Race		Course Failure	SS Participation Never	Attended	Total
	Black	1	Count	392	219	611
			Expected Count	408.1	202.9	611.0
			%	64.2%	35.8%	100.0%
		2-3	Count	173	62	235
			Expected Count	156.9	78.1	235.0
			%	73.6%	26.4%	100.0%
		Total	Count	565	281	846
			Expected Count	565.0	281.0	846.0
			%	66.8%	33.2%	100.0%
	Hispanic	1	Count	24	12	36
			Expected Count	23.6	12.4	36.0
			%	66.7%	33.3%	100.0%
		2-3	Count	18	10	28
			Expected Count	18.4	9.6	28.0
			%	64.3%	35.7%	100.0%
		Total	Count	42	22	64
			Expected Count	42.0	22.0	64.0
			%	65.6%	34.4%	100.0%
	Indian	1	Count	24	6	30
			Expected Count	24.7	5.3	30.0
			%	80.0%	20.0%	100.0%
		2-3	Count	13	2	15
			Expected Count	12.3	2.7	15.0
			%	86.7%	13.3%	100.0%
		Total	Count	37	8	45
			Expected Count	37.0	8.0	45.0
			%	82.2%	17.8%	100.0%

Gender	Race		Course Failure	SS Participation Never	Attended	Total
	Asian	1	Count	6	1	7
			Expected Count	6.1	.9	7.0
			%	85.7%	14.3%	100.0%
		2-3	Count	1	0	1
			Expected Count	.9	.1	1.0
			%	100.0%	.0%	100.0%
		Total	Count	7	1	8
			Expected Count	7.0	1.0	8.0
			%	87.5%	12.5%	100.0%

APPENDIX K

CONTINGENCY TABLE/ CROSS TABULATION #2: SS PARTICIPATION / SCHOOL SIZE / SCHOOL OF ORIGIN / HS GRADUATION

SS Participation	School Size		School of Origin	HS Graduation No	HS Graduation Yes	Total
Never	Medium (1800-2299)	F	Count	106	6	112
			% school population	94.6%	5.4%	100.0%
		H	Count	126	22	148
			% school population	85.1%	14.9%	100.0%
		J	Count	30	6	36
			% school population	83.3%	16.7%	100.0%
		Total	Count	262	34	296
			% medium schools	88.5%	11.5%	100.0%
	Large (2300-2799)	A	Count	122	30	152
			% school population	80.3%	19.7%	100.0%
		B	Count	116	14	130
			% school population	89.2%	10.8%	100.0%
		D	Count	81	9	90
			% school population	90.0%	10.0%	100.0%
		E	Count	109	9	118
			% school population	92.4%	7.6%	100.0%
		Total	Count	428	62	490
			% large schools	87.3%	12.7%	100.0%
	Comprehensive (2800-3100)	C	Count	189	19	208
			% school population	90.9%	9.1%	100.0%
		G	Count	123	23	146
			% school population	84.2%	15.8%	100.0%
		I	Count	107	9	116
			% school population	92.2%	7.8%	100.0%
		Total	Count	419	51	470
			% comprehensive schools	89.1%	10.9%	100.0%

SS Participation	School Size		School of Origin	HS Graduation No	HS Graduation Yes	Total
Once	Medium (1800-2299)	F	Count	30	12	42
			% school population	71.4%	28.6%	100.0%
		H	Count	29	29	58
			% school population	50.0%	50.0%	100.0%
		J	Count	6	17	23
			% school population	26.1%	73.9%	100.0%
		Total	Count	65	58	123
			% medium schools	52.8%	47.2%	100.0%
	Large (2300-2799)	A	Count	31	27	58
			% school population	53.4%	46.6%	100.0%
		B	Count	19	14	33
			% school population	57.6%	42.4%	100.0%
		D	Count	11	12	23
			% school population	47.8%	52.2%	100.0%
		E	Count	11	8	19
			% school population	57.9%	42.1%	100.0%
		Total	Count	72	61	133
			% large schools	54.1%	45.9%	100.0%
	Comprehensive (2800-3100)	C	Count	45	31	76
			% school population	59.2%	40.8%	100.0%
		G	Count	32	28	60
			% school population	53.3%	46.7%	100.0%
		I	Count	30	21	51
			% school population	58.8%	41.2%	100.0%
		Total	Count	107	80	187
			% comprehensive schools	57.2%	42.8%	100.0%

SS Participation	School Size		School of Origin	HS Graduation No	HS Graduation Yes	Total
Twice or Thrice	Medium (1800-2299)	F	Count	3	15	18
			% school population	16.7%	83.3%	100.0%
		H	Count	9	14	23
			% school population	39.1%	60.9%	100.0%
		J	Count	4	11	15
			% school population	26.7%	73.3%	100.0%
		Total	Count	16	40	56
			% medium schools	28.6%	71.4%	100.0%
	Large (2300-2799)	A	Count	7	11	18
			% school population	38.9%	61.1%	100.0%
		B	Count	2	11	13
			% school population	15.4%	84.6%	100.0%
		D	Count	8	9	17
			% school population	47.1%	52.9%	100.0%
		E	Count	4	3	7
			% school population	57.1%	42.9%	100.0%
		Total	Count	21	34	55
			% large schools	38.2%	61.8%	100.0%
	Comprehensive (2800-3100)	C	Count	6	16	22
			% school population	27.3%	72.7%	100.0%
		G	Count	10	15	25
			% school population	40.0%	60.0%	100.0%
		I	Count	7	14	21
			% school population	33.3%	66.7%	100.0%
		Total	Count	23	45	68
			% comprehensive schools	33.8%	66.2%	100.0%

APPENDIX L

CONTINGENCY TABLE/ CROSS TABULATION #3: GENDER / RACE / COURSES FAILED / HS GRADUATION

				HS Graduation		
Course Failure	Race	Gender		No	Yes	Total
One	White	Female	Count	42	21	63
			Expected Count	46.6	16.4	63.0
			% within gender	66.7%	33.3%	100.0%
		Male	Count	60	15	75
			Expected Count	55.4	19.6	75.0
			% within gender	80.0%	20.0%	100.0%
		Total	Count	102	36	138
			Expected Count	102.0	36.0	138.0
			% within White	73.9%	26.1%	100.0%
	Black	Female	Count	301	170	471
			Expected Count	323.9	147.1	471.0
			% within gender	63.9%	36.1%	100.0%
		Male	Count	443	168	611
			Expected Count	420.1	190.9	611.0
			% within gender	72.5%	27.5%	100.0%
		Total	Count	744	338	1082
			Expected Count	744.0	338.0	1082.0
			% within Black	68.8%	31.2%	100.0%
	Hispanic	Female	Count	23	5	28
			Expected Count	23.2	4.8	28.0
			% within gender	82.1%	17.9%	100.0%
		Male	Count	30	6	36
			Expected Count	29.8	6.2	36.0
			% within gender	83.3%	16.7%	100.0%
		Total	Count	53	11	64
			Expected Count	53.0	11.0	64.0
			% within Hispanic	82.8%	17.2%	100.0%

				HS Graduation		
Course Failure	Race	Gender		No	Yes	Total
	Indian	Female	Count	20	6	26
			Expected Count	21.8	4.2	26.0
			% within gender	76.9%	23.1%	100.0%
		Male	Count	27	3	30
			Expected Count	25.2	4.8	30.0
			% within gender	90.0%	10.0%	100.0%
		Total	Count	47	9	56
			Expected Count	47.0	9.0	56.0
			% within Indian	83.9%	16.1%	100.0%
	Asian	Female	Count	3		3
			Expected Count	3.0		3.0
			% within gender	100.0%		100.0%
		Male	Count	7		7
			Expected Count	7.0		7.0
			% within gender	100.0%		100.0%
		Total	Count	10		10
			Expected Count	10.0		10.0
			% within Asian	100.0%		100.0%
Two or Three	White	Female	Count	24	2	26
			Expected Count	24.3	1.7	26.0
			% within gender	92.3%	7.7%	100.0%
		Male	Count	32	2	34
			Expected Count	31.7	2.3	34.0
			% within gender	94.1%	5.9%	100.0%
		Total	Count	56	4	60
			Expected Count	56.0	4.0	60.0
			% within White	93.3%	6.7%	100.0%

				HS Graduation		
Course Failure	Race	Gender		No	Yes	Total
	Black	Female	Count	143	25	168
			Expected Count	143.0	25.0	168.0
			% within gender	85.1%	14.9%	100.0%
		Male	Count	200	35	235
			Expected Count	200.0	35.0	235.0
			% within gender	85.1%	14.9%	100.0%
		Total	Count	343	60	403
			Expected Count	343.0	60.0	403.0
			% within Black	85.1%	14.9%	100.0%
	Hispanic	Female	Count	10	2	12
			Expected Count	9.9	2.1	12.0
			% within gender	83.3%	16.7%	100.0%
		Male	Count	23	5	28
			Expected Count	23.1	4.9	28.0
			% within gender	82.1%	17.9%	100.0%
		Total	Count	33	7	40
			Expected Count	33.0	7.0	40.0
			% within Hispanic	82.5%	17.5%	100.0%
	Indian	Female	Count	8		8
			Expected Count	8.0		8.0
			% within gender	100.0%		100.0%
		Male	Count	15		15
			Expected Count	15.0		15.0
			% within gender	100.0%		100.0%
		Total	Count	23		23
			Expected Count	23.0		23.0
			% within Indian	100.0%		100.0%

				HS Graduation		
Course Failure	Race	Gender		No	Yes	Total
	Asian	Female	Count	1		1
			Expected Count	1.0		1.0
			% within gender	100.0%		100.0%
		Male	Count	1		1
			Expected Count	1.0		1.0
			% within gender	100.0%		100.0%
		Total	Count	2		2
			Expected Count	2.0		2.0
			% within Asian	100.0%		100.0%