CHARACTERISTICS OF SEVENTH-GRADE MIDDLE SCHOOL STUDENTS WHO ATTENDED A CONTINUATION HIGH SCHOOL

Rae Lynn Kit

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CHARACTERISTICS OF SEVENTH-GRADE MIDDLE SCHOOL
STUDENTS WHO ATTENDED A
CONTINUATION HIGH SCHOOL

A Dissertation
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Education
in
Educational Leadership

by
Rae Lynn Kit
June 2019
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A Dissertation
Presented to the Faculty of California State University, San Bernardino

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Approved by:

Donna Schnorr, Committee Chair, Education

Nancy Acevedo-Gil, Committee Member

Becky Sumbera, Committee Member
ABSTRACT

This study explored pre-existing quantitative data for 55 students when they were in the seventh grade who eventually attended a continuation high school years later. There were 101 students at a particular continuation high school, and this research explored pre-existing data looking solely at the students who were in the same district while they were in seventh grade. Attendance and grades from the pre-existing data in the district’s software system were analyzed using a descriptive methodology followed by a cluster analysis through SPSS. Attendance findings for the 55 students revealed that nine students (16%) were absent with a frequency of 10 or more days in each semester. Reasons given for some absences were bereavement for four students (7%) and suspensions for 10 students (18%). Eight out of these 10 students (80%) declined in their grades from the first semester to the second semester. Overall, 33 students (60%) declined in their grades from the first semester to the second semester regardless. Findings related to grades looked at the number of Fs over the two semesters of the seventh-grade school year and at the number of Fs earned in each course. Forty-four students (80%) earned at least one F either semester. Language Arts was the highest failed academic class second semester, with 32 out of 55 students (58%), and Computer Applications was the highest failed elective class for 5 out of 9 students (56%) who took this class second semester. Other findings related to grades were that 0 students (0%) failed only the elective, and only 2 students
(4%) failed Physical Education. Additional findings through cluster analysis revealed a connection between failing an elective in combination with failing Language Arts: 81.8% first semester (9 out of 11 students) and 83.3% second semester (5 out of 6 students). Using a cross-tabulation, the highest pattern between the two semesters was for 10 students of the overall 55 (18%) with no Fs both semesters, and the second-highest pattern was for 6 students (11%) with no Fs first semester and 1 F second semester.
ACKNOWLEDGEMENTS

I would like to acknowledge the Cal State University, San Bernardino, Alumni of the Doctorate Program.
DEDICATION

I dedicate this research to future generations of middle school staff. It is important for us to know how our role continues to influence our kids for years after they are with us.
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CHAPTER ONE

INTRODUCTION

When a student has been kicked out of a comprehensive high school and pushed into a continuation school, or if the student drops out altogether, it has negative implications for the individual student as well as for society. Before even entering high school, 10% of students are already at risk for dropping out (U.S. Department of Education, 2007). While in high school, some students are facing personal and significant social issues that are so challenging that often it is easier for them to drop out (Christle, Jolivette, & Nelson, 2007). If a student decides to drop out of high school, his/her opportunities in life will be limited, his/her unemployment rate will be four times higher than a high school graduate, and his/her income when he/she does work will be on average one third less than those with a diploma (U.S. Census Bureau, 2006). When employed, high school dropouts typically have lower-paying positions with lower-skilled requirements (U.S. Department of Education, 2007). Additionally, they have more health issues and often lack the resources to get additional help when they need it. Prison has been an unfortunate path many of these students will end up on at some point in their lives (U.S. Department of Justice, 2002).

The reasons why students drop out of school are often complex. Often, the factors that started this thought process happened subconsciously years earlier and more factors were added in as the years progressed. It may be difficult for a
young person to give a single reason as to why he dropped out because there was no casual connection (Rumberger, 2001). The fields of economics, sociology, psychology, and anthropology have all weighed in with theories to explain why students drop out.

A continuation high school is sometimes considered to be one step away from dropping out. Looking at the commonalities of continuation students while they were in middle school could offer insight regarding strategies and interventions that middle school administrators and counselors might employ in order to proactively support students before they are on a trajectory toward a continuation high school.

Problem Statement

The state prisons across the United States are 75% full of people who dropped out of high school. Additionally, people without a high school diploma are 350% more likely to be arrested at some point in their lifetime (Harlow, 2003). The need to help students stay in school has been a paramount focus for both the individual but also society as a whole which is a well-known problem; however, being pushed out of the comprehensive high school to a continuation high school has not.

Failing Courses

When examining the risk factors of students leaving a comprehensive high school either for a continuation school or dropping out altogether, typically the main two factors considered are academic and social (Lee & Burkam, 2003).
These two categories are interrelated and, once compounded, can intensify any situation. Academic failure can quickly become an unbreakable cycle for students. Because many classes build upon one another, if a student fails the first semester, he or she is more likely to fail the second semester. This means even if the student was trying the second semester, she would fail based on the lack of knowledge from the first course failure, creating a pattern. High school academics are actually more about the credits earned per course rather than GPA, which means that if students fail a course, they do not earn the credits needed to graduate. Academic risks also include the standardized achievement tests often given by the state or the district. Research has shown that the strongest predictors of a student dropping out of high school are ninth-grade GPA, course completion (credits earned), and attendance (Allensworth, Gwynne, Moore, & De La Torre, 2014).

**Absenteeism**

Absenteeism is considered an academic risk because it is difficult to pass a class that has not been attended. High absenteeism has been directly linked to a high risk of not graduating high school (Allensworth & Easton, 2007). Students who attend less than 80% of the school year have a 78% probability of eventually dropping out of high school (Neild & Balfanz, 2006a). Educators already know the importance of attendance, and yet the statistics can still be staggering. If an elementary student misses 15% of his school year on average, his absenteeism jumps to 55% in the middle school years (Baltimore Neighborhood Indicators
Alliance, 2007). Dropping out of high school can be traced back to sixth-grade absences (Kerr, Zigmond, Schaeffer, & Brown, 1986). Absenteeism has long been proven to negatively affect a student’s grades and overall academic achievement (deJung & Duckworth, 1986).

Lack of Academic Skills

Writing has long been an essential skill for successful students; however, it is a problem for students who have not mastered it. Additionally, a lack of reading skills also affects the success of students. The sooner the school knows about a struggling student, the sooner interventions can be put in place to help. If a student continues to fail at writing, she can be at an even greater risk for academic difficulties, which can span all subjects or even lead to dropping out (Graham & Perin, 2007). The middle school years are attended more than high school (Epstein & Mac Iver, 1990; Valentine, 2004), which makes it that much more important to keep the student engaged and interested during this time of schooling. Because students’ attendance in middle school is higher, this is the time to develop the academic skills that are essential to high school success: reading, writing, and math.

Demographics

Students who attend high-poverty middle schools are also dealing with high levels of bullying and fighting. Often, these schools are in districts with high teacher turnover and vacancies (Balfanz, Ruby, & Mac Iver, 2002; Ruby, 2002; Useem, Offenberg, & Farley, 2007). According to Loutzenheiser, “Students who
arrive in continuation high schools have experienced life-changing events or have felt ‘othered’ in some way which has resulted in them being termed ‘at risk’ (2008, p. 223). To add to the feeling of “othered,” often the continuation high school itself is referred to as “the other school.” A student may drop out of high school for reasons other than academics such as social risks, which are demographics such as gender, age, and nationality, as well as socioeconomic factors (Croninger & Lee, 2001).

Summary

These factors are not isolated and should be used to look at the whole person while in middle school, not just early high school. When schools ignore students’ problems, those problems only intensify into larger problems. Often, the only thing the school personnel know to do has been to get the student off the campus any way possible (Skiba & Peterson, 2003). Some students are acting out from boredom or lack of understanding of the classroom material, and these are the students who may be labeled emotionally disturbed or behaviorally disordered. The cycle of a negative learning environment is difficult to break out of, and students who have a high number of referrals for discipline issues are also the students who tend to leave the comprehensive high school (Janosz, Le Blanc, Boulerice, & Tremblay, 2000). The decision to drop out of school is one that students make over time, often beginning subconsciously in middle school (Aab, 2011; National Association of State Directors of Special Education, 2005).
Purpose Statement

A plethora of research is available regarding the phenomenon of dropping out of high school. Many studies have been conducted on middle school indicators that place students at risk of dropping out of high school, but fewer connect middle school students to a continuation high school. This marginalized group of continuation high school students is underserved and underrepresented across the country (Theoharis, 2007).

When students have been identified as having a social or academic risk, they are not automatically considered at-risk students; however, when a student has multiple risk factors, it is important for a school to provide support and help him/her to remain in a comprehensive high school. This study explored a data set of 55 students as seventh graders who eventually attended a continuation high school, in an effort to identify unique factors that could be addressed through early interventions.

For years to come, any middle school administrator or counselor can gather these data points and analyze the risk of their students. Because descriptive statistics focus on organizing and summarizing data to be simple and easily understood (Narkhede, 2019), this quantitatively oriented descriptive research design serves as a model for a comprehensive data collection approach that administrators and counselors could utilize to inform practice. The purpose of this study was to find indicators that suggest a seventh grader may be on a path
to attending a continuation high school, in order to create possible interventions and disrupt that path.

Research Questions

**Overarching Research Question**

1. What does a pre-existing data set reveal regarding middle school students’ eventual need for a continuation high school?

**Underlying Research Questions**

2. What are the attendance and the suspension data of these students?

3. What is the nature of the electives that these students took and the grades earned in those electives?

Significance of the Study

There is plenty of research across the world examining the dropout phenomenon, and there is some research on this phenomenon beginning in middle school. There is also research about continuation high schools and their students. However, there is little research connecting a middle school student to a continuation high school. The significance of this study is to make that connection. Although the continuation school itself is a tremendous help to students who want to avoid dropping out completely, middle school site leaders need to intervene early in a student’s education to help students avoid the need to attend a continuation high school.
Assumptions

The assumption is that the path leading a student to continuation high school begins at the middle school level. There are many students who do not begin this path until their ninth- or even 10th-grade year; however, it is known that some students begin as early as elementary school. It is also assumed that the factors causing this direction are something identifiable in their written record.

Delimitations

This research does not take into account any social, emotional, or psychological impacts of the students’ lives. There were no interviews or surveys; only pre-existing data were explored. This research looked only at the 55 students who were in the same district in which they eventually attended a continuation high school. Furthermore, this study did not attempt to explore those students who attended the same middle school and who may have attended a continuation high school in another district.

Definitions of Key Terms

The following section defines terms used in this study.


Alternative school: Any school setting that is not traditional.

Art: An elective class that can be requested by the student, though it is most often automatically filled by the computer system for scheduling.
ASB: Associated Student Body, an elective of choice that requires an application process.

At-risk: A student who may drop out of school.

Attendance: Total days of school student attended or missed.

AVID: Advancement via Individual Determination, an elective of choice that requires an application process.

Band: An elective of choice that requires the approval of the teacher.

Choir: An elective of choice that requires the approval of the teacher.

Comprehensive high school or traditional high school: A school site for ninth- to 12th-grade students to prepare them for a high school diploma as well as for college. This school site also offers sports, performing arts, and high-achieving courses such as Advanced Placement and International Baccalaureate.

Computer Applications: An elective class that can be requested by the student, though it is most often automatically filled by the computer system for scheduling.

Connectedness: Student’s sense of belonging to the school.

Continuation high school: An alternative high school serving students 16 years of age and older who are critically behind in credits and will not graduate from the comprehensive high school. The site is usually much smaller than a comprehensive site, often 75–300 versus 1,500–3,500 students. Therefore,
individualized programs can fit the needs of individual students on a more remedial basis.

CST: California Standards Test.

Digital media: An elective class that can be requested by the student, though it is most often automatically filled by the computer system for scheduling.

Disengaged: Student is not involved in the day-to-day lesson or in the school activities as a whole.

Educational code or ed. code: The bylaws that govern education.

Elective of choice: A class that requires the student to apply for the class or go through a process such as ASB and AVID.

Electives: Selection of a variety of classes such as Art or Band. These are not the standard four academic courses.

Engagement: Student is actively involved in the lesson and/or school as a whole.

Indicators or factors: Data points and information about a student such as grades, demographics, attendance, and behavior.

Intervention elective: Selection of a variety of classes designed to catch a student up in a deficient weakness of academics such as Learning or SI Reading.

Learning: An intervention elective that students who qualify are forced to take despite their preference. This class focuses on math skills.

Literature Support: An intervention elective that students who qualify are forced to take despite their preference. This class focuses on reading and writing.
Non-intervention elective: A class that a student may request, though most often it is open enrollment for the computer to select the class on the behalf of the student. Includes classes such as Art and Computer Applications.

Nonrisk: A student who is not considered a possible high school dropout.

Othered: Refers to people being segregated or outside of the norm.

Project Essay Grade: A purchased program to grade essays for the teacher.

Pushed out: When students are on the cusp of not graduating due to credit deficiency, comprehensive high schools may push a student to the continuation rather than give him or her extra classes to make up the missing credit (Gray & Herr, 2006).

Push-pull: Situations or influences that either push or pull a student away from school.

Referral: Written report by any adult on campus when a student breaks a school rule or ed. code.

SBAC: Smarter Balanced Assessment Consortium standardized test.

Second chance school: Another term for a continuation high school.

SES: Socioeconomic status, determined by qualification of free or reduced lunch.

SI Reading: An intervention elective that students who qualify are forced to take despite their preference. This class focuses on reading and comprehension skills.

Social characteristics: Encompassing term that includes SES, ethnicity, parental educational level, and adults in the home.
SRI: Paid reading program, Scholastic Reading Inventory.

STEM: Science, Technology, Engineering, and Mathematics, an elective class that can be requested by the student, though it is most often automatically filled by the computer system for scheduling.

Student behavior: Determined by number of referrals and suspensions.

Student wellness: “Generally conceptualized as consisting of many constructs: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance” (Ryff & Keyes, 1995).

Study Skills: An intervention elective that students who qualify are forced to take despite their preference. This class focuses on a little of all four academic classes.

Suspension: A day a student is not allowed to come to school for breaking an ed. code bylaw.

Traditional high school: A school site for ninth- to 12th-grade students to prepare them for a high school diploma as well as for college. This school site also offers sports, performing arts, and high-achieving courses such as Advanced Placement and International Baccalaureate.

Summary

The dropout rate across the country is an epidemic (Rumberger, 2001). It not only changes the lives of those who drop out but also affects society as a whole. Often, the process begins in middle school. The lucky ones are those who decide to attend a continuation high school rather than dropping out.
Chapter Two will examine the literature currently addressing indicators of future dropouts and characteristics of a continuation high school.
CHAPTER TWO
LITERATURE REVIEW

Indicators and Risk Factors
Because there is limited literature connecting a middle school student to a continuation high school, this section of the literature review explores research on early identification and possible risk factors associated with students who may later drop out of school. The factors are examined here as possible indicators that a student who struggled in these academic and behavior skill areas at a young age will struggle with staying in school at a later age. These early identifiers and risk factors fall under subsections of comprehensive factors, behavior factors, optimal number of risk factors, and outside/environmental factors. As Balfanz, Herzog, and Maclver (2007) asked, “In other words, can we trace the intermediate roots of the dropout crisis in high-poverty neighborhoods to the start of the middle grades?” (p. 196).

Comprehensive Factors
The literature has indicated there is a need to understand the phenomenon of dropping out of school from a multidimensional perspective, which makes it difficult to pinpoint each factor in an isolated manner. For example, psychosocial factors (PSF) include motivation, friendships, and self-regulation, which have all been measured and found to be critical in the phenomenon of high school
dropouts (Casillas et al., 2012). Other researchers have identified some dropout predictors that have shown consistencies, such as grades, behavior, and attendance (Barrington & Hendricks, 1989; Morris, Ehren, & Lenz, 1991). In a large study of approximately 13,000 students, Casillas et al. (2012) identified five warning indicators of possibly dropping out for sixth- to 12th-grade students. They discovered that if a student had all five indicators, he or she had a 60% likelihood of dropping out of school. These indicators included an F in math, an F in English, attended school less than 80% of the academic year, received one or more suspensions, and had an unsatisfactory behavior grade regardless of the subject. Aab (2011) described four background issues that contributed to a student’s decision to drop out of school: academic achievement, social characteristics, student wellness, and student behavior. This subsection will examine indicators of dropping out of school from a comprehensive view to include a mix of psychosocial factors, disengagement, status variables, attendance, and academic factors.

**Adding Psychosocial Factors (PSF)**

Casillas et al. (2012) examined how different potential dropout indicators interplayed and how they affected a student’s academic risk of failing and potentially dropping out. The researchers had three questions:

- What are the effects of different facets of academic preparation, PSFs, behavioral, school level, and demographic factors when predicting high school academic performance, as measured by GPA? How well does the
system of measurements predict which students went on to obtain poor grades? Would PSFs and behaviors explain a substantial amount of variance in academic performance? (2012, pp. 410–411)

The sample included 13 districts in the Midwest and South that were chosen to encompass a broad range of achievement characteristics and demographics. The participants were spread over 24 middle schools and included 4,660 seventh- and eighth-grade students, of which the majority were Caucasian (64%). Their primary language was English, and 51% were male and 49% female.

The students were placed in intervention programs based on five categories, which measured academic achievement (grades and standardized scores), PSFs (motivation, social aspects, and self-regulatory factors), behavioral patterns (homework time, attendance, number of school moves), school factors (average class size, number of students receiving free or reduced lunches), and demographic factors (gender, race, parent education, family income). Dividing them allowed the researchers to compare each indicator separately (Robbins, Allen, Casillas, Peterson, & Le, 2006). By evaluating the data with a dominance analysis technique, the researchers were then able to analyze this comprehensive assessment system through a methodological-substantive approach. When analyzing the behavioral variable with the psychosocial variables, they tested the hypotheses using multiple linear regression.
Although the sample of participants was spanned over 13 districts, a limitation of this research was that each of the districts was relatively the same in type of community, both ethnically and economically; therefore, there was a lack of diversity. The findings showed a direct correlation between behavioral patterns and psychosocial factors such as stress that added incremental validity to a student’s GPA.

The importance of analyzing students’ behavior with the psychosocial variables was to explain why students were at risk and to detect them early (Casillas et al., 2012). Because this research could help find the timing of when to employ the interventions for the individual student, a recommendation for future research was to look at those interventions and their effectiveness between the psychosocial variables at school and with the family (Casillas et al., 2012).

Transitioning between each level of schooling is another stressor as it increases expectations of students, which in turn increases anxieties. Additionally, with each new transition to a new school, the social issues change, as do the academic issues. Aab’s (2011) purpose was to focus on the need for schools to build more positive experiences for students using a positive psychology framework rather than the current deficit model. Aab wanted to identify pathways that led to a student to dropping out. The research questions were as follows: “What impact does student wellness have on literacy? How does literacy impact student behavior and achievement? What effect do social
characteristics have on student wellness and literacy? What effect does gender have on student behavior and achievement?” This study was a comprehensive view from a psychological base. It took place in a large urban district in Southern California. The researcher chose to focus on the first transition of school, 2,547 sixth graders, with an end sample size of 706 students. The ethnic makeup was 65.1% Hispanic, 17.8% African American, 10.0% White, 4.7% Asian, and 2.4% other. A total of 48.7% of the students were female and 51.3% were male.

Aab used archival data in his research design. For example, he was able to identify whether students received free lunches. Academic achievement information was available through CST state testing and Scholastic Reading Inventory (SRI), a locally purchased reading program. Additionally, he was able to discover how many office referrals and suspensions each student accrued, if any. The data system the district utilized also provided the demographics, such as gender and ethnicity. His design for measuring was through the use of a survey with 10 constructs and 40 questions. Aab used the Child and Adolescent Wellness Scale (CAWS) and the Multidimensional Student’s Life Satisfaction Scale (MSLSS). Aab compared the relationships of independent and dependent variables, both observed and unobserved, using a Structural Equation Model (SEM). All of his archival data were collected over one standard semester of 18 weeks.

No significant correlation was found with ethnicity. Females felt more connected to the school than males, and they had more parental involvement.
Males had increased discipline issues. The social characteristics predicted wellness and achievement but did not predict behavior, although gender did have an impact on each. Literacy had a greater impact on student achievement than on student behavior.

Aab remarked that the educational system had both macro and micro levels of relationships along with interactive pathways that could lead a student to dropping out. The disconnects to behavior can be categorized into social characteristics, literacy, and student wellness. Aab noted that student wellness needed to be examined longitudinally and expanded to include such things as social characteristics, empathy, and mindfulness. Another recommendation was to look further into the relationship between achievement and behavior (Aab, 2011).

Adding Disengagement as a Factor

Disengagement at the middle school level can already be a challenge for educators; however, it is even more so in a high-poverty area, and erasing that gap requires reforms that are multidimensional, comprehensive, and intensive (Balfanz, Mac Iver, & Byrnes, 2006). Signs of disengagement, emotional issues, and discipline problems can all start well before high school (Balfanz & Boccanfuso, 2007). The most obvious signs of low engagement are absenteeism and misbehavior, which can be traced back to elementary school and connected to future dropouts (Garnier, Stein, & Jacobs, 1997; Goldschmidt &
Wang, 1999; Roderick, 1993; Rumberger & Larson, 1998; Swanson & Schneider, 1999).

In a 2007 study, Balfanz et al. sought to narrow down the predictive indicators at a middle school level for a student who would eventually drop out. Their research questions were the following:

How widespread and how early in the middle grades does serious student disengagement from schooling occur? In high-poverty urban schools with a high population of minority students, does the intersection of early adolescence and the environmental/social conditions of concentrated, neighborhood poverty, produce high levels of disengagement as early as sixth grade? (Balfanz et al., 2007, p. 224)

The researchers examined whether a status variable such as environment or social conditions was connected to disengagement and could be seen easily in sixth grade. The setting for their research was high-poverty middle schools in an urban area of Philadelphia (Balfanz et al., 2007). In 1996, these researchers began following 12,972 students for an 8-year period. The final sampling was \( N = 6,888 \). The sample’s ethnic makeup was 64% African American, 19% White, 12% Hispanic, and 5% Asian. Fifty percent were female. Four percent were English Language Learners, and 6% were special education students. Nineteen percent were overage for grade (already 12 or older upon entry to sixth grade). Ninety-seven percent of the students qualified for free/reduced lunch (Balfanz et al., 2007).
At the middle school level, some researchers found that when African American boys reported that they were engaged, they were more likely to continue through traditional high school, whereas those who reported being disengaged were more likely to attend a continuation high school or drop out altogether years after leaving the middle school (Connell, Halpem-Felsher, Clifford, Crichlow, & Usinger, 1995).

Additionally, Finn and Rock (1997) wanted to take out the variable of SES and race and measure only engagement. The argument was if students were engaged in school, they were connected and therefore they would speak up and be heard. Students’ engagement or disengagement could be completely unrelated to the teacher but rather real-life circumstances outside of school influence (Yazzie-Mintz, 2007). Engagement was described as “students [who] participate in school which leads to successful performance, promoting positive feelings of belonging, in school, which in turns promotes ongoing participation” (Stout & Christenson, 2009, p. 221).

Adding Status Variables as a Factor

Gleason and Dynarski (2002) also looked for a predictor with a high yield, something that when flagged by itself would lead to prediction of high school failure and even more so in combination with other flags. The top four comprehensive predictor variables the authors found were academic, behavior, attendance, and what they called “status variables.” After a two-pronged test, the authors found four flags during the students’ sixth-grade year with a strong
predictive power: attendance of 80% or less, failing English, failing math, or being suspended at least once. A fifth flag that did not score as high individually but did in combination with the top four flags was an unsatisfactory grade in citizenship/behavior in any subject in the sixth grade.

The researchers controlled for other flags and ethnicity; flags were 34% more likely to predict dropout rates than ethnicity. Overall, 68% of the students had chronic absenteeism, 56% had an unsatisfactory behavior grade, 54% had failed math, and 42% had failed English. However, if a student had one or more of these flags, it did not mean he/she was destined to drop out. From this cohort, 56% of the students who had no flags, 36% of those who had one, 21% of those who had two, 13% of those who had three, and even 7% of those who had four flags graduated.

The status variables were described as characteristics that separate students from the general population—for example, being older (overage) than the traditional sixth-grade student, being an English learner, or being in special education. Being overage was associated with additional challenges, as most of these students failed either English or Math or both. Statistically, they also had high rates of unsatisfactory behavior marks and attendance issues. Notably, only 29% of the overage students from this study graduated (Gleason & Dynarski, 2002).

Being African American or Hispanic is also a status variable, and although the school districts had the same results, the study failed to focus on why 11%
fewer Hispanics graduate compared with African American students. A study conducted by Neild and Balfanz (2006b) indicated that a possible reason for differences in student outcomes varying by race were that students chose to work instead of finishing high school. Another limitation was a lack of focus on gender gaps. Girls graduate 12% more often and have fewer behavior issues and fewer course failures than boys. Future research can focus on connecting the gender gap and the dropout rate of Hispanic students.

From a comprehensive view, by narrowing the focus to the top four indicators (behavior, attendance, failing Math or failing English, and suspension) at a middle school, educators can now predict with 60% accuracy the high school students who may drop out. This suggests that a proactive approach to addressing these variables at the middle school level is imperative (Mac Iver, 2007).

**Adding Absenteeism as a Factor**

When a sixth-grade student falls under the chronic absenteeism level of 80%, he or she has a 23% chance of failing to graduate from high school. Of high school dropouts, 60% of those students made it past ninth grade. Only 20% of the students who were suspended went on to graduate (Balfanz et al., 2007).

Another study looked at absenteeism and truancy (Chau et al., 2012) by looking at 58,000 students from seventh grade to ninth grade. The sample was 66.1% African American and 14.9% Latino, and 46% were eligible for free or reduced lunch. Students had an average of 19 days of unexcused absences and
an average of four days excused. The researchers created five subsets on various trajectories: very-low (37%), low (43.4%), declining (3.3%), rising (13%), and chronic (4%). Balfanz and Byrnes (2007) also wrote about high school dropouts who, as middle school students, had low attendance and were in a high-poverty area. One third of high-poverty students were absent more than 10% of the school year, which was considered chronic.

Balfanz and Byrnes (2006) focused on how attendance and behavior can significantly affect the achievement gap of high-poverty middle schools. Neild and Balfanz (2006a) focused on eighth graders, looking at the connection between course failings and low attendance. When these two were taken together, they found a strong predictor of becoming a high school dropout. Educators know attendance can affect the probability of a student graduating or dropping out, and recent research can now connect the problems with attendance with other factors, making this a comprehensive issue of why a student will drop out.

**Adding Academic Skills as Factors**

Although standardized tests fall under the flag of academic achievement, they are not a good predictor of dropping out of school, especially in comparison with failing a course (Balfanz & Boccanfuso, 2007; Byrnes, 2007). Failing a course in middle school can be an indicator of a student struggling to graduate from high school years later. An eighth grader's academic achievement has more impact on future college and career readiness than any grade in high
school (ACT, 2011). Reading and writing are essential skills to build a student’s overall academic skills across each subject area.

**Adding Writing Skills as Academic Factors**

Research on early identification factors of future dropouts has examined writing skills as an important factor (Balfanz et al., 2007; Rumberger, 1995; Wilson, Olinghouse, McCoach, Santangelo, & Andrade, 2015). The negative consequences that arise from struggling in writing can follow a person all through his school years. According to the National Center for Education Statistics (2012), the majority of students across the United States fail to achieve a score of proficiency in writing at their grade-level state exams. Wilson et al. (2015) conducted a study to identify struggling writers at an early age in order to help the students avoid future issues linked to poor writing skills, such as being transferred to a continuation high school or dropping out of school. Their research question was regarding two types of scoring methods for the writing samples in order to identify the best way to find these young, struggling writers. One method was having two raters (teachers) grade holistically, while the other method was through a software program called Project Essay Grade (PEG).

The research was conducted in the fall of the 2012 school year. For the at-risk group, there were 15 school districts and 18 schools represented with 66.9% males. The ethnic breakdown was 63.9% White, 21.5% Hispanic, 8.3% Black, 1.4% Asian, and 4.9% other. The students were 44.9% free/reduced lunch, 5.9% English Language Learners, and 41.9% special ed. For the not-at-risk group,
there were 13 school districts and 15 schools represented with 41.9% males. The ethnic breakdown was 71.5% White, 9.0% Hispanic, 11.0% Black, 4.2% Asian, and 4.9% other. The students were 30.1% free/reduced lunch, 0.7% English Language Learners, and 8.8% special ed. All 272 sixth-grade students were reclassified in accordance with the Family Educational Rights and Privacy Act.

The researchers began with 1,666 sixth-grade students who were given an appropriate standard topic of persuasive prompt as a benchmark writing exam and told to compose it on a computer. The essay was written in the Project Essay Grade (PEG) software program. The test had two sections, a writing portion and an editing/revising portion. The total test time was 45 minutes. There were two raters who scored the exam holistically on a scale of 1–6 and then summed the scores together. Both forms of grading gave a score for each essay. Then the students were identified as at-risk or non-risk solely based on whether they passed their written exam in the previous spring and were given a dichotomized score of either 1 or 2. Then the researchers chose equal sampling sizes of each group, 136.

The ROC curve analysis was employed, as was logistic regression to find the predictive factor. Logistic regression was used with a multivariate prediction model, which had seven predictors. Sparseness was an issue and would determine how to analyze each predictor independently using crosstabs, at times requiring a conversion to a quartile measure.
Using chi-square to test independence, the researchers found significant statistical results of the most at-risk student for struggling in writing and being below grade level to be a Hispanic male, an English Language Learner, a special education student, a recipient of free/reduced lunch, or a student of a charter or magnet school. Including all seven predictors, the full model of the deviance was 213.09, which was a better fit with the data than the null model.

Although the writing test came from the state, it was not a rigorous technical exam. Additionally, a single writing prompt would not be able to measure the whole of a student’s ability to write. This exam measured only the final product of writing; it did not analyze another skill connected to writing. One future research recommendation was to analyze the writing portion of a more rigorous exam such as the SBAC, the California state testing. Another possibility would be to compare this research, which focused on one writing prompt, to another exam that requires multiple prompts. A different researcher might also want to analyze an exam that covers other aspects of writing, such as grammar and sentence syntax.

Although both ways of scoring the essays met the objective of finding struggling writers at the sixth-grade level, PEG scoring was superior by $z = 1.98$, $p = .048$, in comparison with the human holistic scoring. With these findings, districts have more information when deciding how to spend their resources. From this study, the researchers were able to create a predictive formula that they could apply to the original 1,666 students who took the essay exam and find
the struggling writers. They predicted >.35 were at risk of failing the state writing exam, which then would put them at risk for failing high school (Wilson et al., 2015). Writing therefore is a small part of the larger comprehensive factors for a student possibly dropping out.

**Adding Reading Skills as Academic Factors**

The National Assessment for Education Progress reported that only 25% of students were at grade level in 2003, with very little improvement by 2008 (Salahu-Din, 2008). One such identifier is reading comprehension or reading ability. In addition to writing skills, reading has also emerged from the literature as an important academic factor related to early identification (Ashcroft, 2004; Olinghouse & Wilson, 2013). Ashcroft (2004) designed and conducted a research study with 20 students to learn how to use decodable text in their reading. The 20 elementary students were all struggling readers in a suburban area of Southern California. Ashcroft broke up the larger group of 20 into two groups of 10 students, one in a comparison group and one in an experimental group. After taking the pretest, it was apparent that one young boy had scored too far below to be included in the study as it was designed. Therefore, he became a case study for Ashcroft.

The researcher wanted to find a consistent improvement for individualized tutoring through teaching how to decode a text. Although this student scored far below where he should have been, the question asked was whether a tutoring program using decoding would still benefit the student. Additionally, his behavior
was a challenge both in the classroom and outside at recess; therefore, the researcher wanted to know if his behavior would change if his reading level changed. This would be an important variable to examine when trying to predict future placement in high school.

The intervention program was a one-on-one tutoring program for 15 minutes a day over a 4-week period. During these tutor times, the topic was teaching reading through decoding, which included the students reading aloud to themselves. The researchers placed dividers between the students to avoid eye contact and to create a small degree of privacy for the read-aloud portion.

A pre- and post-reading test was given to measure reading outcomes. Observations were used to measure behavior changes. With this case study student, Ashcroft spent time designing a behavior plan. First, the tutors paid attention to him when only he was actually reading; otherwise, they ignored his behavior. Second, while he was reading, the tutors would move close next to him and move away when he was not. Third, the researcher wanted him to see his accomplishments, and one way to do that was for him to count how many words he read.

Ashcroft observed engagement by watching. She also kept track of the student’s misbehaving acts such as being tardy or having outbursts in the classroom. The reading improvement was collected through the pre- and posttest, and analysis was on Slosson Oral Reading Test-Revised. The student went from reading at a third-month first grader to a seventh-month second grader.
level. He also went from being late on a regular basis to not at all, as well as from having many outbursts in class to hardly any.

The researcher was unable to assess the relationship and bonding that occurred through the tutoring, and therefore merely acknowledged those variables played a part in this student’s success. However, reading abilities were directly correlated with a student’s engagement and therefore were connected to his behavior. One affected the other; reading affected behavior. Ashcroft recommended that future research examine whether decoding can be taught in the classroom on a larger scale rather than the one-on-one tutoring success of this research.

There is a possible comprehensive connection with motivation and its effect on reading, and one system, a Brief Experimental Analysis (BEA), has been used to find that connection through data of possible risk factors to interventions. Because there are different reasons why a student would perform poorly on any assessment, the BEA was designed to uncover that reason, such as ability versus motivation to complete a reading task (Jones, 2002). This assessment could be useful in narrowing down exactly the type of intervention the student needs. Guthrie, Lutz Klauda, and Ho (2013) conducted a study involving 1,159 seventh graders, with 854 in the sample and the rest in the control group. They compared the intervention program, Concept-Oriented Reading Instruction (CORI), with the traditional Language Arts classroom. This program focused on seven motivation ideals. Four deal with positive motivation such as intrinsic
motivation and self-efficacy, while three deal with negative motivation such as perceived difficulty. The program was designed specifically to help reading, and the results did show the students’ motivation and engagement was higher in the experimental group than in the control group. The researchers concluded that if a person is self-motivated to improve, he/she will learn (Guthrie et al., 2013).

Behavioral Issues as Factors

In terms of predictors, an unsatisfactory behavior/citizenship grade was a strong predictor for approximately half of high school dropouts (Balfanz et al., 2007). From the students who received at least one unsatisfactory behavior grade in any subject, only 24% of those students went on to graduate. If the student had dual flags of failing either math or English and an unsatisfactory behavior score, the dropout rates were 87% and 89%, respectively. Interestingly, students who failed math were 77% likely to also have an unsatisfactory behavior grade, and this was also true for 80% of the students who failed English.

Although behavior problems, including the inability to sit still and follow directions, tend to surface in second and third grades, research has shown that most students are not referred for a behavior screening until grade 9 (Walker, Nishioka, Zeller, Severson, & Feil, 2000). There is no universal process to screen for behavior issues, which can put a student at risk for years as teachers pass around this misbehaved student just to make him or her someone else’s responsibility (Severson, Walker, Hope-Doolittle, Kratochwill, & Gresham, 2007).
As with most issues, the sooner they are identified the better, and prevention is ideal (Kratochwill, Albers, & Shernoff, 2004).

If a student receives 10 or more referrals, then it is a chronic discipline issue, and that certainly places the student at risk of dropping out of school (Irvin, Tobin, Sprague, Sugai, & Vincent, 2004). Students in the middle school years receive more referrals than during the elementary school years. Forty percent of referrals in middle school, for example, come from the top 5% of referrals at the elementary school (Sugai, Sprague, Horner, & Walker, 2000). During the screening process, the educators need to distinguish if factors are predisposed. They need to know the student’s history and experiences. It is important to determine if the factors are precipitating or occurring in close proximity to the problem, such as a stressful event (Levine, Perkins, & Perkins, 2005). Contextual factors, which can also be used in the screening process, are what surround the child: family, community, school (Lochman, 2004).

One example of early identification of behavior disorders is the Multiple-Gating Assessment Procedure for identification, which is a three-stage process. There are also teacher rating scales that can be used, such as the Child Behavior Checklist, Social Skills Rating Scale, and Behavioral and Emotional Rating Scale (Levine et al., 2005). Administrators should be using the referral system as an indicator of at-risk students. The sooner a student is identified with a behavior disorder, the sooner the student can receive help and prevent any long-term problems (Levine et al., 2005).
Separate from a behavior disorder, other researchers have also explored behavioral factors associated with dropping out by comparing resilient groups with nonresilient groups to determine if there are some key predictors. Finn and Rock (1997) distributed surveys to 800 public schools and 200 private, all with low socioeconomic status, to isolate groups based on resiliency and compare them with positive behaviors and engagement. The sample size of participants was about 24,500. The survey covered engagement questions and an achievement test. Data were collected at grades 8, 10, and 12. The participants were of African American and Hispanic origin. If a student dropped out of school, the researchers followed up with him/her to complete the survey and take the achievement test. The final count of participants was 1,803 after discarding some due to missing information. The control variables were economic status and biological parents living in the home. The survey data analyzed in this study were taken from the U.S. Department of Education’s National Educational Longitudinal Study of 1988 (NELS:88). Data collection and analysis, multivariate analyses of variance (MANOVAs), and multivariate analysis of covariance (MANCOVAs) were used to analyze the data.

The students were classified into three groups: Resilient (n = 332) were ones who passed high school with high grades of As and Bs; nonresilient completers (n = 1,301) were ones who passed high school but with Ds and were not involved in student activities; the third group was nonresilient dropouts (n = 170). The three groups had no differences prior to their eighth-grade year. The
main difference between the groups was in the area of discipline (suspensions) and the use of drugs (marijuana). Six percent of the dropout group, for example, had been arrested at least one time before tenth grade, whereas only two percent of the resilient group had been arrested. There were no listed limitations.

Regardless of which group the students fell into, they were not all at risk when beginning this study. One takeaway from this study is to look at suspensions and arrests as a help to identify early at-risk students before they reach the 10th grade (Finn & Rock, 1997). It is known that academic failure can lead to dropping out, but failure to behave can also lead to dropping out or to being pushed out (Balfanz et al., 2007). This is yet another area of concern when looking for the indicators of a student who may drop out of school years after an incident.

Finding the Optimal Number of Risk Factors

There is no single factor associated with a risk of dropping out, nor is there one factor more impactful than any other (Masten & Coatsworth, 1998). When schools are assessing the risk factors of students, it is important to remember that one particular risk factor does not represent the whole of a child’s life (Sameroff, Gutman, & Peck, 2003). Balfanz and Boccanfuso (2007) narrowed it down with a 60% identifiable rate by looking at attendance, behavior, and course failures, all in the sixth grade.

By focusing on the multiple risks that students are facing, the schools can more accurately intervene and provide interventions before the student is faced
with the challenges of high school. Lucio, Hunt, and Bornovalova (2012) asked, “What is the optimum number of risk factors for distinguishing between students who are at risk and not at risk of academic failure?” (p. 3). The researchers took their participants from the Educational Longitudinal Study (ELS:2002), which was operated by the National Center for Education Statistics. It took a national sample of 14,796 students with a mean age of 16.48 years old. The sample was taken from the 2001–2002 school year during the spring semester. There were 50.2% female and 49.8% male students. The ethnic diversity breakdown was 56.6% White, 14.7% Hispanic, 12.8% Black, 10.2% Asian, 4.8% multiracial, and 0.9% American Indian. This research design used 12 schools and academic variables that have been associated with at-risk failure in previous research (Lucio, Rapp-Paglicci, & Rowe, 2011).

The ELS:2002 had multiple measures within it, including school records of the students, interviews from the students, and surveys taken by the students. Academic achievement was defined by the GPA and was coded as a dichotomous variable, above a 2.0 and below. Socioeconomic status (SES) was a controlled variable. The Action Control Scale was used to measure academic engagement and academic self-efficacy. Academic expectations were measured by a response range from 1 to 7. Attendance and school misbehavior used items on a scale of 1 = “never” to 5 = “10 or more times,” while educational support also used a similar scale. Grade retention was a single item, and school mobility was a number of items. Homework completion was a range of 1 = “rarely” to 5 =
“all of the time.” School relevance, school safety, and teacher relationships were all measured on a scale of 1 = “strongly agree” to 4 = “strongly disagree” (Lucio et al., 2012).

Using Corapci’s (2008) five-step process to examine predictors of students’ at-risk level, Lucio et al. (2012) first compared each factor with the GPA and looked for a correlation. They then took those factors and categorized the lowest 25% of the sample as risk and the rest of the 75% as non-risk. The third step was to do a t test to look for any significant differences between the risk and non-risk groups and their GPA. Next, hierarchical linear regression analysis was used on the risk variables to determine which factors affected the overall student. The fifth step was to take the factors that passed the first four steps and create a cumulative risk index (CRI), which was then used in a receiver operating characteristic (ROC) analysis to predict a student’s GPA on a graphical plot. It was designed to help separate optimal factors from suboptimal (Corapci, 2008).

Regression analysis was used for the covariates looking for their relationships to GPA. The strongest of those relationships was gender with females ($M = 2.84, SD = 0.75$) as compared with males ($M = 2.56, SD = 0.79$). Race also had a significant relationship to GPA with Asian (2.93), White (2.85), multiracial (2.65), Hispanic (2.40), American Indian (2.28) and Black (2.26). The relationship with socioeconomic (SES) to GPA was significant: $r(14736) = .337$. In the end, all 12 predictors did show a relationship to GPA as well as all risk and non-risk groups. It was not that a student had a single risk
factor, but that students typically had more than one. This research has shown that each added risk a student has can be correlated to increase his/her probability of failing high school by 47%.

The most notable limitation was that this study focused only on school-related risk factors. A future recommendation would be to study the family and the community factors or the interpersonal factors. The researchers concluded that it was not which risk factors the students have, but rather how many they have, and that the schools should be focusing on targeting early interventions to address the students with multiple factors. Schools need to have a flexible approach to tailor help for each individual student based on his/her needs (Lucio et al., 2012).

In a district in Oregon that had developed a 12-point checklist for high school students identifying their at-risk indicators, McKee and Caldarella (2016), attempted to use the checklist as a method to find eighth-grade at-risk students. As with most indicators, these were correlated with one another, but they found that causal factors were difficult to predict. McKee and Caldarella asked, “What are the significant middle school predictors of ninth grade attendance? What are the significant middle school predictors of ninth grade course failure? What are the significant middle school predictors of ninth grade GPA?” (2016, p. 5). The researchers believed it was too late to help students once they were in high school. They were focused on helping before the students made the transition to high school. By identifying the students who needed help in the eighth grade or
even sooner, the schools could implement interventions in time to hopefully change trajectory.

One of McKee and Caldarella’s case studies looked at 416 students participating from three different middle schools, 1875 students in total: 65% White, 16% Hispanic, 16% Asian, and 3% African American, with 25% qualifying for free and reduced lunch. The researchers used quantitative statistical analyses to compare 12 indicators at the middle school level with three ninth-grade factors. The 12 indicators were overall GPA, grades per subject, attendance, suspensions, and six areas from the state achievement exams. The three ninth-grade indicators were GPA, courses completed for credits, and attendance.

The ninth-grade data was collected over the first high school semester, 18 weeks. For the middle school indicators, they used logistic regression analyses and multiple ordinary least square, then for the high school indicators they used a backwards elimination method. Looking for correlations, the researchers found that middle school attendance ($b = .19$) and middle school GPA ($b = .06$) were statistically signficant, along with attendance as another strong prediction indicator. These researchers concluded that the two strongest indicators of a student failing at high school were attendance and a grade of a D while a student was in middle school.
Acknowledging Outside Factors

The factors behind the dropout epidemic come from both the individual and the school, which makes it difficult to research quantitatively to adjust for differences in the characteristics of students. Rumberger’s (2001) purpose was to identify the many factors that come into play for students when they decide to drop out of school and to identify the features of a school site, and life, that contribute to that decision. Rumberger asked, “What factors influence a student’s decision to drop out of middle school? How do these factors differ among ethnic groups? What factors influence middle-school dropout rates?” (1995, p. 4).

The National Center for Education Statistics (NCES) funded a comprehensive survey of 1,100 middle schools conducted by the National Education Longitudinal Survey of 1988. Surveys were sent to parents, administrators, teachers, and students across the United States, giving an initial sample of 25,000 students, averaging 25 per school site. After the second year and the first follow-up, the sample size shrunk to 17,424 from 981 schools (Ingles, Scott, Lindmark, Frankel, & Myers, 1992). This led Rumberger to design a study examining the possible variables from the student’s life and from the school site that could contribute to the decision to drop out. He took that national survey and looked at the demographic variables, family background variables, and academic variables.
Rumberger then analyzed the data in a three-step process using logistic regression beginning with univariate estimates on each of the independent variables. The univariate estimates showed almost all of the independent variables to be a predictor of eventual dropout. There was a greater chance of dropping out (three times more likely) when the student was in a low SES group. The odds were also higher if the student was an English learner or came from a nontraditional home. If a student was held back for a grade, he/she was 11 times more likely to drop out of school. Students who misbehaved or who did not participate in extracurricular activities were at higher odds of dropping out. Chronic absenteeism of 15% or more of the year and failing courses were also strong predictors of dropping out. Rumberger (2001) concluded that these results confirm what other research had already shown.

The multivariate model that examined the ethnic groups resulted in the Hispanic and Black groups having significantly higher odds of dropping out than the Asian and White groups (McMillen, Kaufman, Hausken, & Bradby, 1993; Rumberger, 1987). Although coming from a low SES group was a predictor for dropping out among Hispanics and Whites, it was not for Blacks. More students from the Black group came from nontraditional homes. More Hispanic students came from non-English-speaking homes. After controlling outside factors, coming from a high-minority school or a low SES group was by itself a predictor for a high dropout rate (Bryk & Thum, 1989). Rumberger (1995) used a one-way ANOVA model to confirm this finding.
Additionally, when students reported that their school had a fair discipline policy, it reduced the odds by 21% of their dropping out (Rumberger, 2011). Wehlage and Rutter (1986) also found that students were less likely to drop out when they felt their school’s discipline policies were fair. Chronic absenteeism was a high predictor of future dropouts for every group. No limitations on the research were listed.

It is important to recognize that many of the predictors indicating that a ninth grader may drop out were the same factors that should be looked at and addressed in the middle school grades. The longer educators wait to intervene, the chances are that change will not happen. When a student decides to drop out of high school, it is rarely a spur-of-the-moment decision (Ensminger & Slusarcick, 1992).

Examining the Environment as a Factor

Developmental behavioral science is a field that began in the 1980s to explore the settings and environments that surround students (Jessor, 1993). The National Research Council made the argument that researchers were not examining what surrounds the students and consequently focusing only on the at-risk youth as individuals without considering their overall environment (National Research Council, Panel on High-Risk Youth, 1993). Influences that surround students were their family, which was arguably the biggest factor of student success or failure (Jencks et al., 1972), as well as their school, their community, and their ethnicity.
Reducing high school dropout rates is important not only for the individual student but also for the overall nation. The economy is affected by the labor base, and the educational field fills those labor needs (Murname & Levy, 1996). Consistently over the years, 21% to 37% of high school boys take time off from school, with only a portion of these young men returning or getting a GED. Educational levels also affect the denizens of an area, which make it an additional demographic concern if too many people drop out of high school in the same city (Levin, 1986; Natriello, McDill, & Pallas, 1990). Another concern in the literature was for school accountability and how that affects the students who were already considering leaving school (Heubert & Hauser, 1999; Rumberger, 2001).

Rumberger’s (2001) research purpose was to examine why students drop out of school, looking at their personal influences but also the schools’ influences and how they all factor together. The framework of student engagement included both academic and social engagement. School environment is just as important, and students were less likely to graduate if they had changed schools or taken time off, anything that interrupted the stability of achievement (Rumberger & Larson, 1998; Swanson & Schneider, 1999; Teachman, Paasch, & Carver, 1996). Their past educational environment at school influenced the level of achievement, as well as their future aspirations, especially if students did not connect with the school’s environment.
According to Chau et al. (2012), students have a need to be supported socially, physically, and mentally, yet these resources are not often attainable in a school setting. There are more families today than ever before that are a blended mix of married and remarried, partners and cohabitators. Another piece of research focused on resources with roles of socioeconomic characteristics in relation to non-European immigrants compared with European students. Immigration status is another outside factor of environmental influences that affects students in the United States.

One study on immigration status compared French students, non-European immigrants, and European students. Chau et al. (2012) asked the following research questions: Does the psychological health, physical health, and living arrangements affect whether or not a student will repeat a grade or drop out? Does the social relationships and family living dynamics effect whether or not a student will repeat a grade or drop out? Does the use of cannabis, tobacco, or other drugs affect whether or not a student will repeat a grade or drop out?

The study took place in northeastern France at three middle schools. The town was an urban area of 410,000 residents. This area was chosen as a constant because the students had similar household incomes and family situations. Additionally, the health issues would be similar to all of France. The participants were from the middle schools, compulsory in France. There was a student sample of 1,666 throughout three middle schools spread over 63 classes.
The researchers conducted a cross-sectional, self-administered questionnaire, which included 1,559 middle school students. The socioeconomic characteristics recorded were gender, age, family structure, father’s profession, and household income. There were questions regarding physical health, psychological health, social relationships, living environment, and WHO Quality of Life. The questionnaire also included questions about drug use and physical activity (sports). The authors used logistic models to analyze the data. These were used to adjust for associations such as father’s occupation and family structure. They used Fisher test or chi2 test to examine the outcome variables using the Stata software program out of Texas.

It was found that the combination of physical health, psychological health, and socioeconomic characteristics were higher for non-European immigrants than for European students, which led to more grade retentions and dropouts. Regardless of the family factors (structure, parents’ occupation, income), non-European immigrants were at much higher risk of repeating grades and being low performing in all academic areas. Immigrants also smoked tobacco and cannabis, along with other drugs, earlier than French teenagers and were absent more frequently. As compared with the French students, both categories of immigrants had three times more risk of school difficulties such as grade retention and dropping out. Regardless of residential or immigration status, if the students came from a nontraditional home, they were more likely to
have difficulty at school. This study’s limitation was that it was a self-administrated questionnaire.

The number of difficulties the non-European immigrants faced was much higher than those of the European students, which was still higher than those of the French national students. As such, the public policy needs to take time to focus on these needs for service in order to reduce challenges within the school system. The school system can reduce the retention and dropout factors by using logistic models and comparing them with the WHOQoL-Bref questionnaire (Chau et al., 2012).

There is not a simple reason why students decide to drop out of school. It is a long process that happens over time and often subconsciously. Academic failure is usually only a part of the students’ issues; however, there can be early signs that begin years prior to entering high school. Lack of support for any of the factors could accelerate the timeline of dropping out. Rumberger (1995) recommended that schools help parents connect with the school, which in turn will help parents support their student, who will in turn be more connected with the school.

Components of a Continuation or an Alternative High School

This portion of the literature review will first define the types of alternative schools, then the types of continuation school cultures, and do a comparison with what is similar in another country. When trying to connect the middle school student to the continuation high school, it is a good idea to look at what
continuation high schools are and who the students are. This section will also focus on hearing from the students themselves and looking at their self-concept and at their connection to the school, which will matter in the decision for a student to attend an alternative/continuation school or leave high school all together.

Types of Alternative and Continuation Schools

Before a student makes the decision to drop out, she may decide to try education one more time at a continuation high school. In order to make connections regarding how a middle school student ends up at a continuation school, it is important to look at what these schools are and who the students are. Alternative education has many meanings in the year 2019. It can refer to charter or magnet schools that specialize in a specific field of study, or it can refer to day treatment centers or residential schools that specialize in special education students. The term alternative education can also refer to students who have been pushed out of a comprehensive high school and are now attending continuation or second chance schools. According to the California Department of Education (2017), California has 460 continuation high schools with a combined enrollment of slightly over 60,000 students and over 115,000 students who rotate through the schools over the whole school year.

Gable, Bullock, and Evans’s (2006) purpose in their research was to look at what happens to adolescents when they cannot remain in a regular education setting and are sent to an alternative school. First, they examined the
characteristics of these types of alternative schools, and then they looked at the various types as a whole. Next, they determined essential components of a quality alternative program. The programs were alternative based. Once a student was removed from a traditional, comprehensive high school, he/she would then attend one of these high schools. Education was still compulsory, which meant the state was still required to provide them with an education. The researchers compared the current research regarding alternative school and compiled their findings. Then they listed the basic parts of the characteristics, the types, and the essential components.

The three main characteristic types of alternative schools were the innovation, the last chance, and the remedial. The innovative school challenged the students and engaged them. The last chance school was the last chance for a student not to be expelled. The remedial school was a school that remediates, which can mean for credits or remediating behavior; sometimes it could be for the student to return to the comprehensive school (Raywid, 1994). This type of remedial school was typically referred to as a continuation high school.

The general types of alternative schools were for the gifted, the problematic, and the disturbed. The gifted and advanced schools were the charter and magnet schools. The problematic students came with academic or behavior issues. These alternative schools were the continuation schools that can have either a student with an academic issue (behind in credits to graduate) or a behavior issue (suspended for serious incidents). The problematic type of school
may also include a more restrictive environment such as a court-mandated, community day school. The disturbed type of schooling was more therapeutic and designed to nurture the students because these were the emotional or behaviorally disturbed students. Those schools focused on helping the students learn how to deescalate and control themselves and hopefully function in society (Fitzsimons Hughes et al., 2006).

Components of a Quality Alternative and Continuation School

The six essential components of a quality alternative school as defined by Quinn and Rutherford (1998) include clear procedures for functional assessment of all types of behavior both in the classroom and outside of school. The school needs a flexible curriculum that focuses on life skills both in the classroom and outside of school. Next, the school needs to emphasize instructional strategies that are efficient and effective for the population. Many of these students will return to general education or continue past high school into a community college; therefore, the alternative school needs to provide a link for these students to their next educational steps. Along those lines, the school needs to have community-based services provided or have the students going out and helping within the community. Last, it is imperative that these schools are staffed with the appropriate kind of people, including staff who have the resources they need to help make the students successful (Quinn & Rutherford, 1998).

Alternative schools are successful in large part to the individualized opportunities they offer their students (Lange & Sletten, 2002). The school sites
typically have just a few hundred students, which makes it possible to tailor the educational needs to each individual student. Some of the schools will focus primarily on being innovative with their programs in order to truly meet the individual needs of their students, whereas some of these schools are designed more for controlling behavior (Lehr & Lange, 2003). With the small enrollment and the tailored educational plans, often the environment is a supportive one built on strong relationships between staff and students (Franklin, 1992; Lange & Sletten, 2002).

Demographics of Alternative Schools

Because the population of such schools are forever revolving, the very nature of their unique setting is diverse and therefore limits researchers. It is difficult to conduct research that is outcome based because the students are in and out of these schools for short times. Additionally, it is difficult for a student who returns home to maintain the influences he or she is receiving at school, especially if living in a residential school (Lewis, 1988).

Foley and Pang (2006) conducted a study to examine the physical facilities of these schools, the characteristics of the administration, and the services of education being offered. They also wanted to examine the student population. The schools were all in Illinois in both urban and suburban areas. In 1997, the state legislation of Illinois required districts to provide an alternative schooling placement for students who were a disruption to the general education classroom (Foley & Pang, 2006). After spending 10 years doing a literature review, the
researchers developed a questionnaire with 31 questions that covered six domains of interest: program administration, student population, program characteristics, program supports, number of general and special educators, and school leadership. The public administration focused on the structure of the school itself, meaning the management approach, the funding sources, the program choices, the facility quality, and the resource accessibility. The student population referred to the demographics such as age, gender, ethnicity, and special education. The program characteristics were more about the school itself. The researchers asked if the school had an open or closed lunchtime policy, as well as about the length of the school year, of the day, and of the periods.

Foley and Pang (2006) sent surveys to 84 principals or directors of the continuation schools that were created from this legislation. Fifty of those people took and returned the survey, a rate of 59%. Of the educators, 66% ($n = 33$) had a master’s degree and 22% had a doctorate ($n = 10$) or an education specialist ($n = 2$); 10% had a bachelor’s degree. Their administration years of experience averaged 5.30 ($SD = 4.63$; range = 0.22), while their teaching years of general education averaged 12.64 ($SD = 11.42$; range = 1–38) and teaching special education years averaged 3.59 ($SD = 6.25$; range = 2–26).

This survey also covered the teacher-student ratio, the admission criteria, and the programs that were offered. The program supports referred to any parent supports (groups or trainings), personnel supports (paraprofessionals or
transition specialists), or community supports (service learning or health clinics). Another domain focused on the instructional staff, specifically looking at the number of special education teachers to general education teachers. The last domain was focused on the school leadership, specifically looking at their academic background and years of experience.

A government agency did the data collection, and funding for these alternative sites came from a variety of sources. As site-based managers, many administrators had the autonomy to make decisions about their site without continuity with other alternative or comprehensive sites within the same district. One fifth of the respondents said their sites were managed centrally. The majority (80%; n = 40) of these alternative schools were operated in isolation on their own campuses, while the remaining sites from the research were attached to another site. The unavailability of facilities had been identified by prior research and documented as a concern (Gregory, 2001; Lange & Sletten, 2002), and this research found that to be true. A physical education area could be difficult to acquire at an alternative site ($M = 2.98; SD = 1.64$). A library ($M = 2.15; SD = 1.25$) and a science laboratory ($M = 1.64; SD = .92$) were even more difficult to get on these sites.

There were various parent involvement opportunities ranging from an advisory committee that was reported by 34% of the respondents ($n = 17$) to parent trainings by 14% ($n = 7$). The support services included people such as social workers (74%, $n = 37$), school psychologists (46%, $n = 25$), and vocational
trainers (42%, \( n = 21 \)). Each school site set up its own criteria and admissions parameters, including how many students were accepted. A school could be as small as 11 students and as large as 458 according to this research data. Male students were averaged at 53.6 (SD = 51.54) and females were 35.5 (SD = 43.0). The student age range was from 12 to 21 years old. The special education group was 49.89% (SD = 38.99).

The average days of the school year for students were 177.70 (SD = 11.86, range = 108–200 days), periods per day 5.98 (SD = 1.68), minutes per class 64.65 (SD = 51.78, range = 0–310 minutes), and hours per day 6.20 (SD = 1.65, range 3–11.50 hours). Seventy-six percent (\( n = 38 \)) taught the general education curriculum, 48% taught work readiness (\( n = 24 \)), 46% taught vocational education (\( n = 23 \)), 44% taught “functional curriculum” (\( n = 22 \)), and 38% taught the GED test (\( n = 18 \)), General Education Development programs. Some of the community support services were working with juvenile justice 82% (\( n = 41 \)), work study 60% (\( n = 30 \)), child care 16% (\( n = 8 \)), and social services such as Wraparound 44% (\( n = 22 \)). There were no listed limitations.

According to Foley and Pang (2006), a good future research study would be to find out where these students go after leaving the alternative schools. In the meantime, they recommended that this research could help alternative schools develop programs and community services that do more to support students. They also recommended that the middle and elementary schools look at their programs and interventions to help prevent students from needing an alternative
site. More research was also needed to enhance programs to aid the students in returning to their home school. However, while the students were at the alternative school, districts needed to provide them access to physical education, libraries, and science laboratories. Additionally, districts needed to improve ways to involve parents and community service members. They needed to provide social and emotional support with positive behavior supports as well (Foley & Pang, 2006).

Alternative Education in Another Country

As a comparison of types of alternative/continuation education, this section will focus on Honduras and what the country offer its students, which are three types of alternative education programs, each with their own goals and objectives, including individualized curriculum. Middle school is traditionally for ages 12 to 15. Motivations to attend an alternative school vary from getting ahead to less work and less academic expectation of skills (Marshall, Mejia, & Aguilar, 2005). Much of the community wants its children to be educated more for social interaction than for future income. The parents’ motivation for their children to attend school is for the experience of going school, and although the alternative schools do not provide this experience in the same way as a traditional school, students and parents are attracted to the flexible hours, minimal homework, easy access, and lower charges (when applicable).

Marshall et al. (2014) conducted a longitudinal study to analyze the effectiveness of the three types of alternative programs in comparison with each
other and with the students’ counterpart in the control group. They asked the following research questions:

How are similar kinds of students, based on measurable characteristics, faring in these programs compared both with traditional schools and other programs? Second, are participant outcomes like dropout significantly affected by certain kinds of features which vary between learning centers within individual alternative programs? (Marshall et al., 2014, p. 58)

Honduras has a long history of providing alternative programs (since the 1980s) and represents a diverse group of alternative providers. Roughly 5,500 students from three of the four middle school alternative programs participated, along with the control samples of about 8,500 students chosen as the students’ counterparts from the public middle schools.

The programs vary in support, education, and required hours. *Educatodos* is a distance learning model where the students are expected to do the majority of the work themselves through packet work. The hours are set locally and run by a tutor or a facilitator. This program has very little government support or funding, so parents pay fees to supplement the cost (Kraft, 2009; Marshall et al., 2005; Unidad Coordinadora De Proyectos, 2011). This program has the most flexibility and is truly nontraditional, with no certified teachers and no one conducting lectures (Umansky, Hernández, Alas, & Moncada, 2007). *Sistema de Aprendizaje Tutorial (SAT)* is a privately sponsored program that hires and trains certified teachers and tutors through a competitive process with 200 hours a year
of professional development. The school has traditional school hours throughout the year using traditional textbooks along with giving lectures in agriculture. The SAT schools are tightly controlled and supervised and had the highest score of effectiveness, according to Umansky et al. (2007). *Sistema de Educacion Media a Distancia (SEMED)* is more of a hybrid model of schooling. The students work on their own out of general education textbooks during the week and attend school on the weekends. At the time of the longitudinal study conducted by Marshall et al. (2014), this program had already been proven to be difficult for the students to keep up with, because much of the work was completed on their own.

At the beginning of the students’ seventh-grade year, Marshall et al. (2014) used baseline information to compare dropout rate based on propensity score matching (PSM). That baseline data came from a standardized test in mathematics and language. The researchers visited the sites three times each to collect their data between 2008 and 2010. The schools were chosen at random to represent each type of alternative program. Educatodos had 60 students, SAT had 53, and EDMED had 16, while the control schools were based on geographic location.

Marshall et al. (2014) used a longitudinal design and mixed-model statistical framework, which helped to identify the features of the programs that may have affected the students’ attrition or dropout rates. The researchers used a propensity score matching (PSM) method as a statistical technique to compare the outcomes with validity. This process allowed them to directly compare
students in all areas (such as gender, age, and income) except for their school of attendance. Next, they did a multivariate statistical activity using an empirical strategy, which focused on the grade levels for analyzing stratification. In order to account for heterogeneity, they used logistic regression randomly (Marshall et al., 2014).

When comparing the students of an alternative school to those in a public school, the dropout rate was substantially reduced. The alternative programs that were closely aligned with the traditional middle schools had a lower dropout rate: The SAT school had a 33% dropout rate by the end of the year. At the other two alternative schools, close to 50% of the students had dropped out by the end of 2 years. SEMED had the highest dropout rate. The control schools averaged a 25% dropout rate within the same timeframe. It was of note that the students from all of the middle schools began the baseline test at the beginning of grade 7 on equal academic achievement from the standardized tests. Most students dropped out in the eighth or ninth grades, and most were boys (Inter-American Development Back, 2013).

With the propensity score matching, Marshall et al. (2014) were able to differentiate between the dropout rate of the controlled school and those of the alternative schools. There was no significant difference in dropouts when controlling for family background or for SES. Educatodos had the most flexible school calendar, with students enrolling throughout the year, which may be a factor in them having the highest dropout rate of the four schools in this study. If
a seventh-grade student scored above average on the baseline standard test, he or she was half as likely to drop out within the 2 years when attending the SAT schools. The SEMED school lectured more than Educatodos and less than SAT. This was correlated with SEMED having more dropouts than SAT and fewer than Educatodos. The limitations began with the questions themselves because they did not provide a complete picture of the effectiveness of the programs.

This study was intended to help policy makers better understand the population attending the various alternative schools and provide funding to those programs to help them succeed. The dropout rate among the alternative schools did raise questions about the self-paced model and learning with some help of a tutor versus the classroom-lecture model learning with a certified teacher. This study showed the ideal alternative school was one that had funding for more qualified teachers and quality textbooks, was small and locally controlled, and was scalable for each student’s needs (Marshall et al., 2014).

Types of School Cultures at Continuation High Schools

All schools need to address the damage being done to young people once they decide to drop out; often, their voices are never heard along the way to this decision. Smyth and Hattam (2002) set out to give this problem a proper name by analyzing all types of cultures at continuation high schools. These cultures were created by how a school looks at itself along with how it treats its students.

The students in this study came from either the Metro or the County schools in Australia. There were 209 students in total, 107 males and 102 females. One
hundred and forty-seven of them came from the Metro schools and 62 from the County schools. Smyth and Hattam (2002) stressed the importance of listening to the needs of the students and becoming an active culture. Using a qualitative research method, they interviewed 209 students who had either already dropped out of high school or were very close to dropping out.

The study contained three phases. First, Smyth and Hattam (2002) needed to find the students (reconnaissance phase). Second, they had in-depth conversations with students, beginning with a broad grand tour question and developing as the interview unfolded. Participants were actively involved (active phase). Third, they went back with follow-up questions (reactive phase). The analysis of the data covered many other issues; however, the researchers focused on what pertained to how school culture contributed to a student’s decision to leave school.

Smyth and Hattam (2002) found they could categorize school culture into three groups: aggressive, passive, and active. An aggressive school has a culture of fear with a never-step-out-of-line atmosphere. Teachers tend to be condescending and treat students with disdain. A passive school is passive about behavior and discipline. Students were bored and described these schools as uninteresting. The adults on campus for both of these types of schools were not spending the time to get to know the students’ wants and needs. An active school reached out to its students and worked with them regardless of
background or potential future. Teachers taught with rigor and engaged their students. There was a mutual respect between students and adults.

Additionally, Smyth and Hattam (2002) found themes regarding school culture that contributed to students leaving school. A common theme in an aggressive culture was described as teacher to student with one direction of communication and lack of relationships. The teachers did not care if the student succeeded or failed because they took no responsibility; it was completely on the student. When the teachers would pick on students for little things, the students became frustrated. When students tried to defend themselves, it became an “us versus them” situation. Students were never a part of the school-wide decision-making process. They saw schools as pushing them out, not helping them out. Adults were always yelling at them. Teachers refused to be flexible and would openly lose respect for students once they were suspended. Lessons were uninspiring and were not explained for understanding. These high school students felt like they were being treated like elementary school children.

This study demonstrated that if a school has compatible morals and ethics, it will be stable and strong, able to help all students. Some schools may bounce back and forth between being an aggressive school and a passive school. The active school builds relationships with students and remains flexible in how to help and discipline students. There are continuation high schools of each of these types, and each student responds uniquely.
Self-Concept of Continuation Students

When discussing student dropouts, it is rare to discuss the types of students who were kicked out of the comprehensive high school but had not actually dropped out of school yet. Some students decide to give education another try at a continuation high school. Most of these students are satisfied with their schooling and have a good self-concept. Kratzert and Kratzert (1991) believed the attitude of a student plays an important role in education, and they wanted to know how continuation high school students saw themselves. How a student sees himself can make all the difference in his successes or failures. Their study looked explored self-concept at a single continuation high school. There were 190 students at this particular continuation high school, and 40 of them were randomly selected to take part in this study. The breakdown of demographics was 56% male and 26% minority; the mean age was 17.3 years old.

Kratzert and Kratzert (1991) had the students take a self-administered questionnaire, the Piers-Harris Children’s Self-Concept Scale, which had 80 items in six clusters through a meta-analysis of correlations: behavior, physical appearance and attributes, intellectual and school status, anxiety, happiness and satisfaction, and popularity. They also prepared a questionnaire of their own to glean a wide range of experiences that they felt other standardized tests were not able to assess which was empirical in nature. These questions covered topics such as communication with parents, communication with staff between both types of schools, educational goals, number of school moves, like or dislike
of current school, family cohesiveness, chemical dependency, and special education placement.

As expected, the mean score was within average parameters from the Piers-Harris Children’s Self-Concept Scale (55th percentile), which suggested that as a whole the students at this particular continuation high school did not have a low self-concept. The following represents their percentages for each cluster: behavior 32%, physical appearance and attributes 48%, intellectual and school status 22%, anxiety 35%, happiness and satisfaction 25%, and popularity 25%. Regarding the individual items, some responses stood out: 74% of the students responded that they were “different from others,” 72% agreed that they usually wanted their own way, and 64% claimed they lost their temper easily. Some high negative responses were not a surprise: 68% of the students said they were not a leader on a sports team, 84% said they were not an important member of their class, and 64% did not volunteer in school.

Some of the highlights of the researcher-prepared questions were that 92% liked the placement at the alternative school, and perhaps one reason why was that 80% said the staff was easy to talk to. Consequently, 84% were planning to graduate from high school, with 68% planning to continue going to school even after they finished high school. Although 80% of the students admitted to using drugs at some point, only 48% said they were currently using drugs at the time of the questionnaire.
Kratzert and Kratzert (1991) attributed the high level of placement satisfaction to the lack of pressure to do well with regard to grades. The focus shifted to course completion versus GPA. Additionally, this particular continuation high school had the model of self-pacing by completing packets, which also allowed for a student to work at his/her own level and not in a classroom with 36 other general education students. This model was ideal for more individual attention, as the teacher walked around and helped only the students who needed the help. It became more of a one-on-one tutoring system.

This overall environment created a less stressful and therefore less frustrating situation for these students. They found success here when they could not find it at a comprehensive school, and because of that, they had a higher level of self-esteem as they became more responsible for their own successes and failures (Kagan, 1988). Although 60% of the students came from homes with divorced or separated parents, 58% of overall students said they had good communication with their parents. The greatest limitation to this research was that it was conducted at only one location. Future research should include more school sites. However, it is still important to note that the academic success students experienced at this continuation high school broadened their horizons by helping them not just be successful academically, but also be better communicators, become goal setters, and believe in their potential (Kratzert & Kratzert, 1991). In regard to alternative schools, researchers have primarily
focused on student satisfaction or self-concept (Lehr & Lange, 2003), with little focus on what defines a quality education at an alternative school.

**Using Voice as a Connection**

Continuation high school students were pushed out of the comprehensive schools with their low grades and low test scores, which did not fit the norm (Noddings, 2006). This phenomenon creates a subculture within the continuation school walls, typically with feelings of being excluded and kicked out (Lock, 2010). For educators to truly understand students, they need to listen, which means the students’ voices must be heard. Several researchers have used a social justice lens to examine the impact of school in the students’ life (Jerald, 2006; Lalas & Valle, 2007). When students were given a voice and had buy-in with their education, they became more engaged and took more ownership of their learning (Joselowsky, 2007).

Finn and Rock (1997) found a correlation between student engagement and teacher relationship that was demonstrated through student voice. Students were positively engaged more at the continuation high school than they were at the comprehensive high school. Teachers were the most influential factor for a student who was deciding whether to stay in school; therefore, it was no surprise to also find that students recognized the importance of motivating teachers who cared and would listen to students (Finn & Rock, 1997).
Direct Comparison of a Continuation and a Comprehensive High School

Lock (2010) sought to identify whether there were any student engagement differences between a comprehensive high school and a continuation high school. Lock’s mixed-methods study used quantitative data to show the macro side of engagement and qualitative analysis to examine engagement through narrative inquiry with phenomenological elements. From this research, teachers could use this insight to improve their craft by finding a way to engage each of their students. Lock’s research question was “What are the differences in school engagement practices within comprehensive and continuation high school settings that influence the success of at-risk students?” (Lock, 2010, p. 5). A secondary purpose of this study was to discover if there was a need to change anything from the outdated factory model of education or if the status quo was equally engaging at both high school sites. Lock was an assistant principal at a continuation high school in Southern California where the research was conducted.

Lock’s dissertation was conducted with a mixed-methods approach. The quantitative part utilized the Psychological Sense of School Membership scale (PSSM) (Goodenow, 1993) and the Critical Incident Technique (CIT) (Flanagan, 1954) to create a Student Engagement Survey. All students completed the Student Engagement Survey, which had 18 questions referring to both schools, asking about their experiences with teachers and the school as a whole. The focus group of 20 students met six times over 20 weeks, and they completed
activities such as journal writing and group discussions. From that group, there were three focus groups that met only once; each group was three students.

A Student Engagement Survey was distributed to 202 students for the quantitative portion of Lock’s study, and 20 students were interviewed in a focus group during an advisory period. The ethnic breakdown of the 202 students was Hispanic 58%, White 25%, African American 10%, Asian 2%, Filipino 1%, and other 3%. Sixty-five of the students were in 11th grade, 130 of the students were in 12th grade, and two of the students were fifth year. Of the 20 students in the focus group, 12 were male and 8 were female. The students were all attending a continuation high school, which means all students were credit deficient and would not have graduated from a comprehensive high school.

In a comparison between the comprehensive and the continuation high schools, students recognized that the comprehensive had more social pressures such as cliques, whereas the continuation had more connection to the campus. Students felt more connected when they engaged in discussions and debates. It was recommended that the comprehensive high schools find a way to give more personalized attention and build the relationships that students were getting at the continuation school (Purkey, 2000). The continuation high school experience provided more opportunities to be involved on the campus, and with smaller class sizes came more teacher attention.
Summary

Chapter Two described the predictive factors of a middle school student who may eventually drop out of high school: attendance, failing math and English, and behavior. Some other predictive factors include psychological factors, overall GPA, citizenship, sex, and ethnicity. However, it is rarely one factor that makes the difference but rather the comprehensive combination of these factors. Students who decide to drop out of school have had negative environmental experiences over time, and a student’s decision to drop out happens gradually over time. The reasons (often subconsciously) compound themselves from a plethora of influences. The earlier that issues can be identified, the more help a school can offer. Many times, these students have a number of at-risk factors, and instead of dropping out, they find themselves at a continuation high school. Chapter Two also looked at what continuation and alternative high schools are and who these students are. Chapter Three will describe how the data were collected, along with how the data were analyzed for this dissertation.
CHAPTER THREE
RESEARCH DESIGN AND METHODOLOGY

Research Design

Descriptive analysis was designed to identify underlying constructs within a particular set of data, which determined the variables that were noteworthy of future analyses (Foster, Barkus, & Yavorsky, 2006): attendance, grades, electives, and suspensions. Taking the time to describe the data was important to do first, to completely understand the data before running a cluster analysis in order for the data to be meaningful. Because the cluster analysis was also exploratory, I used it in conjunction with a secondary research method (Statistics Solutions, 2019), which paired well for my research design. Using a descriptive analysis and then a cluster analysis, the outcomes were easily understood when analyzing the clusters, which identified homogenous groups (Narkhede, 2019).

I looked at one district that had only one continuation high school. The school district from which the data were taken uses a software system called Aeries. This program collects demographic information about each student, which allowed this study to explore the pre-existing data, as in the overarching research question: What does a pre-existing data set reveal regarding middle school students’ eventual need for a continuation high school? Other software programs such as Q can be used in the same way. Using 2017/2018 continuation high school students (101) who were in the same district in seventh
grade (55), I explored the commonalities between their attendance, number of suspensions, and academic data back when they were in middle school. Cluster analysis “can be used to study the relationships between the elements or between the constructs” (Foster et al., 2006, p. 162). I explored the data for potential trends and patterns among the students, which can help make connections between students’ time in middle school and attending a continuation high school.

Research Setting

The setting for this study was a suburb city K–12 school district in Southern California. This district had one continuation high school, which fluctuates between 90 and 120 students for any given year.

Research Sample

The sample of students was taken from the one continuation high school in the district. The school had 101 students at the time of the data collection, the 2017/2018 school year; however, only 55 were students in this district while they were in middle school. The students reflected in this sample were middle school students during the years of 2012/2013 and 2011/2012 and went to a continuation high school during the year of 2017/2018. At the continuation high school, their ages ranged from 16 to 19; 56.43% were males and 43.57% were females. The ethnic breakdown was Filipino 1%, Hispanic/Latino 44%, and White 54%. Additionally, 72% were socioeconomically disadvantaged, 10% were
students with disabilities, 2% were EL students, and 4% were homeless youth 4%. The demographic information for the 55 students out of the 101 students was not accessible.

Research Data

The research data the district provided included the students’ middle school grades in all subjects for their seventh-grade year both semesters; the classes taken were Language Arts, Math, Science, Social Studies, Physical Education, and an elective. The elective class was divided into three categories for this analysis: non-intervention of choice such as ASB or Band, non-intervention such as Art or Computer Applications, and intervention such as SI Reading or Learning. The data also covered the number of times the students were suspended and for how many days during their seventh-grade year. The last data point gathered was the students’ attendance during the seventh-grade year. Table 1 provides the available data categories as a list.

Data Collection

The district provided anonymous pre-existing data from all students (101) who attended the continuation high school during the 2017/2018 school year and who attended middle school in the same district during years 2012/2013 and 2011/2012. There were 55 students who fit the criteria of attending the continuation high school and being in the district during seventh grade.
Table 1

_Seventh-Grade Data Categories_

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<th>Seventh grade semester 2</th>
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The data collection came from the district computer software data program called Aeries. The district provided all of the data used for this research.

Data Analysis

The data in this quantitative descriptive research design were analyzed in two ways. The first was through a descriptive exploratory analysis per variable, and the second was through a cluster analysis. For example, there were 12 variables: seventh-grade first semester letter grades for six classes and seventh-grade second semester letter grades for six classes. The first method, descriptive analysis, was designed to describe the data of a given sample to be easily understood (Narkhede, 2019) as a summary of information in quantitative statistics (Sinharay, 2010), while the exploratory method helped reveal insights of
the data to find what to focus on for the cluster analysis (FluidSurveys Team, 2019; Study.com, 2019). According to Sinharay (2010), “Cluster analysis is an exploratory data analysis tool for organizing observed data or cases into two or more groups,” and as a technique, SPSS grouped those variables that were similar and those that were dissimilar. With both methods, subgroups were created to reveal trends and patterns of this phenomenon of students who eventually attend a continuation high school.

Exploring the data using the descriptive method, I noticed the sheer amount of Fs, which made me want to explore that and describe what I knew about the students from this pre-existing data. The students were grouped into numbers of Fs earned per semester. This particular district does not give the letter grade of a D. Therefore, students earned an F, C, B, or A. My first grouping was actually for the students who had no Fs. Of the students without Fs, I looked for those who appeared to have stable grades and attendance. I defined “stable” as maintaining the grades from first semester to second semester. Next, I looked for students with stable grades as well as a suspension. The third subgroup was students who had no Fs but were not stable by showing a decline from first semester to second semester.

Looking through the list of students, I found those who had one F in either one semester or both with all other grades being a C or better. I also looked to see if that F was in the same subject both semesters. Next, I continued with a new grouping to find students who had two Fs either semester. Then I looked for
students and grouped them by three Fs, then four Fs, five Fs, and six Fs. Within each set of Fs, I described subgroups by their ability to remain stable or if they had a decline in their overall grades.

Continuing in the descriptive exploratory phase, the next grouping was for attendance. I looked through the known reasons for student absences: bereavement, death, funeral, and suspensions. These were the only four types of absences listed. For the purpose of this exploration, I put bereavement, funeral, and death under the same type of absence: bereavement. Through the exploratory analysis, I took notice of these different types of absences and how many students were affected. For a deeper understanding, I discussed separately students who were suspended, who were out on bereavement, who were absent more than 10 days, and who were absent less than 10 days. Using the same method as for those who earned Fs, I described the groupings of the students who missed school due to bereavement, listing their grades, their elective, and their overall attendance. Then I did the same thing to describe the students who were suspended; however, for these students, I added how many times they were suspended and for how many days they were suspended.

The next descriptive exploratory analysis looked at the type of elective, which was broken into three categories: non-intervention of choice such as ASB and AVID, non-intervention such as art or music, and intervention such as Learning or Study Skills. “Descriptive statistics involves summarizing and organizing the data so they can be easily understood” (Narkhede, 2019). The
groupings were focused on each elective, looking specifically at the number of students who earned an F in each of those electives. An additional descriptive analysis explored the combination of Physical Education and the elective in comparison with the students’ grades in the four academic classes.

The second way I analyzed the data was through cluster analysis using SPSS software programming. Although I had already grouped students by the number of Fs they received when I did the descriptive exploratory analysis, I wanted to see how my understanding of the data would be enhanced with running a cluster analysis by trying to identify the homogenous groups (Statistics Solutions, 2019). I wanted to see how a cluster analysis would group students, which would allow me to identify unique groupings for the purposes of understanding variables that may be noteworthy for further exploration (Foster et al., 2006). One of those notable variables was the number of Fs earned, which was the first cluster analysis I ran in a two-step cluster. Although I set a max number of clusters in SPSS, the two-step cluster automatically sets the number of clusters by identifying the groupings, then by organizing it in hierarchical results (Statistics Solutions, 2019). One cluster analysis I ran was looking for a connection between number of days absent and number of Fs earned for each semester separately.

I next analyzed how many students were in which elective and if that elective was an intervention or a non-intervention. I further broke down the non-intervention as an elective of choice or simply a non-intervention. Using SPSS, I
also ran a cluster analysis of each grade earned—A, B, C, or F—for all electives over both semesters. Non-intervention of choice electives were those that students had to choose and receive teacher approval for, such as Band, Choir, AVID, and ASB. Then there were non-intervention electives that could have been chosen on purpose or were given at random, such as Art, STEM, Digital Media, and Computer Applications. The intervention classes were those that the school required the student be enrolled in regardless of his/her choice. These classes were designed to help the student catch up to grade level in either Language Arts or Math, such as SI Reading, Learning, Study Skills, and Literature Support. Again, I ran a cluster analysis to examine the correlations between the electives and the students’ grades in each elective.

Validity and Trustworthiness

This study’s design focused on finding relationships among variables at a specific time rather than over time (Spalding University Library, 2019). Attending a continuation high school was considered a phenomenological event. This study was not looking for a cause-and-effect relationship because the data were explored and observed rather than manipulated (Spalding University Library, 2019). The validity of the study was affected by the limited data available to explore, which will be discussed further in the limitations section. The external validity to generalize the results to a target population was compromised with my sample size being small and not having access to data on all of the students who went to the continuation high school from that district. The inherent positivist
perspective that guided this study was to objectively analyze factual information, trusting that it can be observed and measured (Research Methodology, 2019). In that sense, quantitatively oriented data were the focus whenever they could have supported further interpretations and understandings.

Positionality of the Researcher

I was a teacher at a continuation high school for 7 years before becoming an assistant principal at a middle school. The middle school was a direct feeder school to the high school that students attended before being sent to the continuation high school where I worked. Now that I am at the middle school level, I want to have identifiable indicators that a student may end up at the continuation high school, so that I can consider possible changes for those students. I began this doctoral program in August and began working at the middle school in October. A set of students struck me as “future continuation high school students” right away, and this subject became my focus. I saw students who were failing, who were the class clowns and being kicked out of class on a regular basis, and who hated being at school. I expected to find a high rate of failing the intervention classes, and I expected to find a high rate of suspensions. After writing the literature review, I expected to find a high rate of absences, and I expected to find a high rate of failing math.
Summary

This study focused on 101 students who attended a particular continuation high school in the 2017/2018 school year, who were narrowed down to only those students who were in that same district in their seventh-grade school year. From the district’s software system, Aeries, the district provided the grades for both semesters, the names of the students’ electives, the types of electives, attendance, and if absences were from bereavement or suspension. The research design was to explore the data through descriptive analysis to discover noteworthy variables (Foster et al., 2006), to summarize (Narkhede, 2019), and to better understand the phenomenon (Sinharay, 2010) of attending a continuation high school. Using a descriptive exploratory analysis, I looked at each student who had zero Fs, one F, two Fs, three Fs, four Fs, five Fs, and six Fs, along with the subjects in which they earned the Fs. After analyzing how students did academically in the various types of electives, I compared those grades with the Physical Education grade. Using SPSS, I began my second research method, running a cluster analysis, to explore and identify structures (Statistic Solutions, 2019), to see connections between variables (Foster et al., 2006), and to find the homogeneous groupings (Sinharay, 2010). I ran a number of clusters per semester focusing on the number of Fs a student earned, on attendance, on each grade a student earned in the elective class, and on a comparison of failed elective classes to grades in academic classes.
The 55 students in this study were given the letter grades A, B, C, and F. The school did not assign Ds. Each student took Language Arts, Math, Social Science, Physical Education, and an elective for both semesters of their seventh-grade school year. I broke down the electives into one of three categories: non-intervention of choice (classes students had to make an effort to take), non-intervention (classes the counselors randomly assigned), and intervention (classes students were forced to take based on academic need). The students' data also included their attendance and whether they missed school for bereavement or for suspension.

My overarching research question was the following: What does a pre-existing data set reveal regarding middle school students’ eventual need for a continuation high school? I first explored the data by the descriptive research method. Figure 1 shows the total number of Fs students earned in the first semester per academic class for Language Arts, Math, Social Studies, and Science. Science had the most Fs at 26 (47%). Language Arts and Math had the same number of Fs at 25 (45%), and Social Studies had the fewest at 15 (27%).
Figure 1. Grades for academic classes in the first semester.

Figure 2 shows the total number of Fs students earned per academic class in the second semester for Language Arts, Math, Social Studies, and Science. Math had the highest rate with 34 Fs (62%), Language Arts was second at 32 Fs (58%), Science had 27 Fs (49%), and Social Studies had 25 Fs (45%).

Figure 3 shows how many students earned each number of Fs in each semester, which included the academic classes, the electives, and the Physical Education classes. One student (2%) earned six Fs, two students (4%) earned five Fs, nine students (16%) earned four Fs, 11 students (20%) earned three Fs, eight students (15%) earned two Fs, and four students (7%) earned one F. The line across the top represents the percentage of those students.
Figure 2. Grades for academic classes in the second semester.

Figure 3. Number and percentage of Fs earned first semester.
Figure 4 uses the same data depiction for the second semester, again showing how many students earned each number of Fs for the semester, which includes the academic classes, the electives, and the Physical Education classes. No students (0%) earned six Fs, eight students (15%) earned five Fs, five students (9%) earned four Fs, 12 students (22%) earned three Fs, 11 students (20%) earned two Fs, and nine students (16%) earned one F. The line across the top represents the percentage of those students.

![Graph of Fs Earned in 2nd Semester](image)

*Figure 4. Number and percentage of Fs earned second semester.*

According to Statistics Solutions (2019),

Cluster analysis is often used in conjunction with other analyses (such as discriminant analysis). The researcher must be able to interpret the cluster
analysis based on their understanding of the data to determine if the results produced by the analysis are actually meaningful.

One of the first things that stood out to me was how many students failed multiple classes. After counting the number of Fs per subject, it became apparent that there were some unique characteristics among subsets, so I began to explore these subsets in various ways in order to understand the data better for the cluster analysis. First, I looked for students who did not receive any Fs either first or second semester of their seventh-grade school year. The analysis for the subsets broke down into (a) having received no Fs for both semesters, (b) having received one F for either semester, (c) having received two Fs for either semester, (d) having received three Fs for either semester, (e) having received four Fs for either semester, (f) having received five Fs for either semester, and (g) having received six Fs for either semester. Within each description of the students who failed classes, I wanted to represent the overall picture of what the pre-existing data showed about each individual. Therefore, I added how many days the student was absent and if any of those absences were for bereavement or suspension (see Appendix A).

Before analyzing the students who failed, it was important to look for potential trends through attendance and electives among those who never failed. Of the 55 students who eventually attended a continuation high school, 10 students (18%) showed no signs of academic failure during their seventh-grade school year. Seven students (13%) out of the 55 from this study had one F for at
least one semester. The third grouping was developed based on those who had received at least two Fs in either or both semesters, which were eight students (15%) of the 55 students. The fourth grouping was developed based on those who had received at least three Fs in either or both semesters. Eleven students (20%) had three Fs either or both semesters. Ten students (18%) out of the 55 earned four Fs during their seventh-grade year in either or both semesters. The sixth grouping was developed based on those who had received at least five Fs in either or both semesters. Eight students (15%) had five Fs in at least one semester. The final descriptive analysis of students and their number of Fs was for one student (2%) who had six Fs for at least one semester, which became the seventh grouping, developed based on that student who had received at least six Fs in either or both semesters (see Appendix A).

Table 2 provides a direct comparison for the number of Fs earned from each grouping, the number of days absent and the average first semester, and the number of days absent and the average second semester. The highest number of absences came out of the grouping of four Fs, with an average of 8 days first semester and 7.7 second semester. There was only one student in the grouping of six Fs, and that student missed only a single day of school the entire year. The next lowest grouping for days absent was those who had one F. They averaged 2 days first semester and 4 second semester. There were no suspensions for the grouping of six Fs and two Fs. Although there were three students each who were suspended in both the three Fs and five Fs groupings,
those in the three Fs grouping were suspended for a total of 7 days, whereas those in the five Fs grouping were suspended for a total of 10 days.

Table 2

*Number of Days Absent and Suspended for Each Grouping*

<table>
<thead>
<tr>
<th>Category</th>
<th>0 Fs</th>
<th>1 F</th>
<th>2 Fs</th>
<th>3 Fs</th>
<th>4 Fs</th>
<th>5 Fs</th>
<th>6 Fs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of students</td>
<td>10</td>
<td>7</td>
<td>8</td>
<td>11</td>
<td>10</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>First semester total days absent</td>
<td>37</td>
<td>14</td>
<td>59</td>
<td>22</td>
<td>80</td>
<td>34</td>
<td>1</td>
</tr>
<tr>
<td>First semester average</td>
<td>3.7</td>
<td>2</td>
<td>7.4</td>
<td>2</td>
<td>8</td>
<td>4.3</td>
<td>1</td>
</tr>
<tr>
<td>Second semester total days absent</td>
<td>58</td>
<td>28</td>
<td>48</td>
<td>53</td>
<td>77</td>
<td>57</td>
<td>0</td>
</tr>
<tr>
<td>Second semester average</td>
<td>5.8</td>
<td>4</td>
<td>4</td>
<td>4.8</td>
<td>7.7</td>
<td>7.1</td>
<td>0</td>
</tr>
<tr>
<td>First semester total days suspended</td>
<td>4</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>First semester average</td>
<td>0.4</td>
<td>0.6</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.6</td>
<td>0</td>
</tr>
<tr>
<td>Second semester total days suspended</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>7</td>
<td>1</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Second semester average</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.6</td>
<td>0.1</td>
<td>0.6</td>
<td>0</td>
</tr>
<tr>
<td>Number of students suspended</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>0</td>
</tr>
</tbody>
</table>
After reviewing for groupings that stood out to me within the data, I moved on to the statistical analysis using SPSS. Because cluster analysis is a type of exploratory analysis (Statistic Solutions, 2019), this approach of exploring the data through descriptive research design first then the cluster analysis enhanced my understanding of the data when analyzing the results and finding meaning.

When initially reviewing the data, I categorized my F rate groupings by the minimum of how many Fs a student earned over both semesters. To show the data as I had grouped it, using a comparison of F counts between the semesters, I started my statistical analysis with a cross-tabulation comparison of total F count students received by semester (see Table 3).

Through this cross-tabulation, I discovered new relationships that had not been obvious in my previous exploration using the descriptive design. As with my initial analysis, the cross-tabulation revealed there were 10 students (18%) over the two semesters with no Fs. However, my descriptive design did not find the second and third significant correlation. The second-largest relationship was of six students (11%) who had no Fs the first semester but had one F in the second semester. The third-highest correlation was with five students (9%) who had three Fs both first semester and second semester. The cross-tabulation revealed that if students earned a certain number of Fs in first semester, the number of Fs remained roughly the same number second semester. Looking at the students who earned two Fs first semester, for example (eight in total), three of those eight earned two Fs second semester as well.
Table 3

Cross-Tabulation Comparing Total Count of Fs First and Second Semester

<table>
<thead>
<tr>
<th>Total # Fs student got in Sem. 1</th>
<th>Total # Fs student got in Sem. 2</th>
<th>0 Fs</th>
<th>1 F</th>
<th>2 Fs</th>
<th>3 Fs</th>
<th>4 Fs</th>
<th>5 Fs</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 Fs</td>
<td></td>
<td>10</td>
<td>6</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>19</td>
</tr>
<tr>
<td>1 F</td>
<td></td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>2 Fs</td>
<td></td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>3 Fs</td>
<td></td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>5</td>
<td>1</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>4 Fs</td>
<td></td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>5 Fs</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>6 Fs</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Did not attend</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>10</td>
<td>9</td>
<td>11</td>
<td>12</td>
<td>6</td>
<td>7</td>
<td>55</td>
</tr>
</tbody>
</table>

Those 11 students who earned three Fs first semester had five students who continued to earn three Fs second semester. Out of the nine students who earned four Fs first semester, three continued to earn four Fs and three more others decreased to earning three Fs. Out of the two students who earned five
Fs first semester, one continued to earn five Fs and the other decreased to earning four Fs.

The frequency table for first semester of Fs earned (see Table 4) was broken into two semesters when using SPSS. The clusters were 100% for those who earned all passing grades and for those who earned one F, four Fs, or five Fs. There was a seven (63.6%) to four (36.4%) split between the two clusters who earned two Fs, and there was a one (8.3%) to 11 (91.7%) split between the two clusters who earned three Fs.

Table 4

*Semester 1 Frequency Table by Cluster*

<table>
<thead>
<tr>
<th>F count</th>
<th>0 Fs</th>
<th>1 F</th>
<th>2 Fs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>#</td>
<td>%</td>
<td>#</td>
</tr>
<tr>
<td>Cluster 1</td>
<td>10</td>
<td>100.0%</td>
<td>9</td>
</tr>
<tr>
<td>Cluster 2</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Combined</td>
<td>10</td>
<td>100.0%</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>3 Fs</th>
<th>4 Fs</th>
<th>5 Fs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>#</td>
<td>%</td>
<td>#</td>
</tr>
<tr>
<td>Cluster 1</td>
<td>1</td>
<td>8.3%</td>
<td>0</td>
</tr>
<tr>
<td>Cluster 2</td>
<td>11</td>
<td>91.7%</td>
<td>6</td>
</tr>
<tr>
<td>Combined</td>
<td>12</td>
<td>100.0%</td>
<td>6</td>
</tr>
</tbody>
</table>
Next, I performed several two-step cluster analyses between multiple variable pairings using SPSS. Running a two-step cluster allowed an objective comparison of the data and mathematical identification of groupings based on similarities and differences that would not be immediately apparent when looking at it. For all two-step cluster analyses run, the SPSS cluster criterion was set to the Akaike Information Criterion (AIC) with log-likelihood as the distance measure.

With the initial variable set, total count of Fs for semester 1 and total count of Fs for semester 2, I ran two separate two-step cluster analyses. The first two-step cluster allowed SPSS to automatically determine clusters, with a maximum of seven clusters. The second fixed the number of clusters at seven. When automatically determined, SPSS identified two clusters. The cluster quality was fair for when SPSS auto-clustered the data into two groups. Figure 5 shows the cluster quality with the variance and cohesion of two clusters.

The predictor importance showed that cluster composition was weighted first on second semester and then on the first semester, which highlighted that the decline of grades a student had from first semester to second semester was the best fit for a grouping.
Figure 5. Two-step cluster model summary and cluster quality for two clusters.

Running a two-step cluster analysis objectively compared the data, which identified groupings based on similarities and differences that would not be immediately apparent. With this data, the largest cluster identified was 65.5% for cluster 1, and 34.5% for the second cluster (see Figure 6). These two clusters had a ratio size of 1.89 from the largest to the smallest cluster.

As a direct comparison, Figure 7, the seven-cluster fixed analysis, shows that the clusters were fairly even in size. Clusters 2 and 4 represent 10 students (18.2%), cluster 5 represents nine students (16.4%), cluster 7 represents eight students (14.5%), clusters 1 and 3 represent seven students (12.7%), and cluster 6 represents four students (7.3%). The smallest cluster size was four students (7.3%), and the largest cluster size was 10 students (18.2%), with a ratio of 2.5.
When groupings were fixed at seven clusters, the clusters reflected better quality and cohesion than the two-cluster grouping. The two-cluster grouping had a cluster quality of fair, nearly poor, and the seven clusters had a cluster quality of good, nearly fair (see Figure 8).
**Figure 7.** Seven-cluster output for both semesters.

<table>
<thead>
<tr>
<th>Cluster</th>
<th>2</th>
<th>4</th>
<th>5</th>
<th>7</th>
<th>1</th>
<th>3</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Label</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td></td>
<td>16.4% (9)</td>
<td></td>
<td>14.5% (6)</td>
<td></td>
<td>12.7% (7)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>12.7% (7)</td>
<td></td>
<td>7.3% (4)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Inputs   | Sem. 2 - Total #F Returned 9.00 (100.0%) | Sem. 2 - Total #F Received 6.00 (100.0%) | Sem. 2 - Total #F Returned 9.00 (77.9%) | Sem. 2 - Total #F Returned 1.00 (100.0%) | Sem. 2 - Total #F Returned 2.00 (100.0%) | Sem. 2 - Total #F Returned 2.00 (50.0%) | Sem. 2 - Total #F Returned 5.00 (100.0%) |
|          | Sem. 1 - Total #F Returned 3.00 (100.0%) | Sem. 1 - Total #F Received 6.00 (100.0%) | Sem. 1 - Total #F Returned 2.00 (44.4%) | Sem. 1 - Total #F Returned 0.00 (75.0%) | Sem. 1 - Total #F Returned 2.00 (42.9%) | Sem. 1 - Total #F Returned 4.00 (71.4%) | Sem. 1 - Total #F Returned 2.00 (23.6%) |

**Figure 8.** Cluster quality for seven clusters.

**Model Summary**

<table>
<thead>
<tr>
<th>Algorithm</th>
<th>TwoStep</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inputs</td>
<td>2</td>
</tr>
<tr>
<td>Clusters</td>
<td>7</td>
</tr>
</tbody>
</table>

**Cluster Quality**

![Silhouette measure of cohesion and separation]

- Poor
- Fair
- Good

Silhouette measure of cohesion and separation
The semester 2 frequency chart (see Table 5) based on the seven clusters offers insight on the cluster composition. For clustering, because the highest importance was placed on the second semester, the clusters reveal higher amounts of homogeneity. For example, cluster 4 contained 100% (10) of the students with zero Fs. The second largest student count within a cluster for second semester was 88.9% with eight students in cluster 7 with one F, and the third was 63.6% with seven students in cluster 1 with two Fs. The overall range was 100% with 10 students to 0.0% with zero students in 29 clusters across each frequency cluster.

The frequency chart (see Table 6) for the first semester reveals how cluster composition looks with for a secondary predictor of importance in clustering versus the primary predictor of importance. Cases were more evenly distributed across the clusters and throughout the F rate. There was a tie for the largest composition count for first semester for one student with 100% in cluster 5 with six Fs and for four students with 100% in cluster 4 with one F. The next largest grouping in the first semester was 90.9% with 10 students in cluster 7 with three Fs. There was a huge gap until the next highest percentage at 55.6% with five students in cluster 6 with four Fs.
Table 5

*Semester 2 Frequency Table by Cluster*

Cluster # by total F count of sem. 1 & sem. 2 (fixed seven clusters)

<table>
<thead>
<tr>
<th>Cluster</th>
<th>0 Fs</th>
<th></th>
<th>1 F</th>
<th></th>
<th>2 Fs</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>#</td>
<td>%</td>
<td>#</td>
<td>%</td>
<td>#</td>
<td>%</td>
</tr>
<tr>
<td>Cluster 1</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
<td>7</td>
<td>63.6%</td>
</tr>
<tr>
<td>Cluster 2</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
<td>3</td>
<td>27.3%</td>
</tr>
<tr>
<td>Cluster 3</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
<td>1</td>
<td>9.1%</td>
</tr>
<tr>
<td>Cluster 4</td>
<td>10</td>
<td>100.0%</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Cluster 5</td>
<td>0</td>
<td>0.0%</td>
<td>1</td>
<td>11.1%</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Cluster 6</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
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</tr>
<tr>
<td>Cluster 7</td>
<td>0</td>
<td>0.0%</td>
<td>8</td>
<td>88.9%</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Combined</td>
<td>10</td>
<td>100.0%</td>
<td>9</td>
<td>100.0%</td>
<td>11</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>3 Fs</th>
<th></th>
<th>4 Fs</th>
<th></th>
<th>5 Fs</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>#</td>
<td>%</td>
<td>#</td>
<td>%</td>
<td>#</td>
<td>%</td>
</tr>
<tr>
<td>Cluster 1</td>
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<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Cluster 2</td>
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<td>2</td>
<td>28.6%</td>
</tr>
<tr>
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</tr>
<tr>
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<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Cluster 5</td>
<td>7</td>
<td>58.3%</td>
<td>1</td>
<td>16.7%</td>
<td>0</td>
<td>0.0%</td>
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<tr>
<td>Cluster 6</td>
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<td>0</td>
<td>0.0%</td>
<td>4</td>
<td>57.1%</td>
</tr>
<tr>
<td>Cluster 7</td>
<td>0</td>
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<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Combined</td>
<td>12</td>
<td>100.0%</td>
<td>6</td>
<td>100.0%</td>
<td>7</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
Table 6

**Semester 1 Frequency Table by Cluster**

Cluster # by total F count of sem. 1 & sem. 2 (fixed seven clusters)

<table>
<thead>
<tr>
<th>Cluster</th>
<th>0 Fs</th>
<th>1 F</th>
<th>2 Fs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>#</td>
<td>%</td>
<td>#</td>
</tr>
<tr>
<td>Cluster 1</td>
<td>2</td>
<td>10.5%</td>
<td>2</td>
</tr>
<tr>
<td>Cluster 2</td>
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<tr>
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<td>0</td>
</tr>
<tr>
<td>Cluster 4</td>
<td>10</td>
<td>52.6%</td>
<td>0</td>
</tr>
<tr>
<td>Cluster 5</td>
<td>0</td>
<td>0.0%</td>
<td>1</td>
</tr>
<tr>
<td>Cluster 6</td>
<td>1</td>
<td>5.3%</td>
<td>0</td>
</tr>
<tr>
<td>Cluster 7</td>
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<td>31.6%</td>
<td>1</td>
</tr>
<tr>
<td>Combined</td>
<td>19</td>
<td>100.0%</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cluster</th>
<th>3 Fs</th>
<th>4 Fs</th>
<th>5 Fs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>#</td>
<td>%</td>
<td>#</td>
</tr>
<tr>
<td>Cluster 1</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Cluster 2</td>
<td>10</td>
<td>90.9%</td>
<td>0</td>
</tr>
<tr>
<td>Cluster 3</td>
<td>1</td>
<td>9.1%</td>
<td>5</td>
</tr>
<tr>
<td>Cluster 4</td>
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<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Cluster 5</td>
<td>0</td>
<td>0.0%</td>
<td>3</td>
</tr>
<tr>
<td>Cluster 6</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>Cluster 7</td>
<td>0</td>
<td>0.0%</td>
<td>1</td>
</tr>
<tr>
<td>Combined</td>
<td>11</td>
<td>100.0%</td>
<td>9</td>
</tr>
</tbody>
</table>
Table 6 continued

Cluster # by total F count of sem. 1 & sem. 2 (fixed seven clusters)

<table>
<thead>
<tr>
<th>Cluster</th>
<th>6 Fs #</th>
<th>%</th>
<th>Not attended semester #</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cluster 1</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Cluster 2</td>
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<td>0.0%</td>
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<td>0.0%</td>
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<tr>
<td>Cluster 3</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Cluster 4</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Cluster 5</td>
<td>1</td>
<td>100.0%</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Cluster 6</td>
<td>0</td>
<td>0.0%</td>
<td>1</td>
<td>100.0%</td>
</tr>
<tr>
<td>Cluster 7</td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Combined</td>
<td>1</td>
<td>100.0%</td>
<td>1</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

The overarching research question asked what the pre-existing data reveal. Next, I wanted to explore how the students did in Physical Education, especially compared with other classes. Of the 55 students who eventually went on to attend a continuation high school, 44 students (80%) had at least one F, yet only two students (4%) failed Physical Education first semester, and both students earned Cs second semester. Two different students (4%) failed Physical Education second semester. One of those students had a C first semester, and the other student was not enrolled in this district first semester. No students failed Physical Education for both semesters. Twelve students (22%) in total
 earned a C for at least one semester. Of the 12 students, four (7%) earned a C first semester but not the second semester. Another four students (7%) earned a C second semester but something different the first semester. An additional four students (7%) earned a C both semesters in Physical Education.

Quite a few students earned Bs in Physical Education. Seven (13%) earned a B for Physical Education in only the first semester, and 10 students (18%) earned a B in only the second semester. Nine students (16%) earned a B in both semesters for Physical Education; even more students earned As. Eight students (15%) earned an A for Physical Education in the first semester only, and four students (7%) earned an A in only the second semester. Twenty students (36%) earned an A in both semesters for Physical Education. The overall commonality of students taking Physical Education was that they passed Physical Education, often with high grades, which may have been the only A or B that student earned.

After I described each student using the pre-existing data, I looked for trends and patterns within the attendance data to address the second research question, regarding what the attendance data reveal. Taking a step away from SPSS, I went back to the descriptive exploratory analysis. I discovered that four students (7%) were absent due to funeral, bereavement, or death. I wanted to continue with the descriptive exploratory approach to get a picture of who these students were while they were in the seventh grade when this death occurred.
(see Appendix B). Three out of four (75%) were passing all of their classes when they were in seventh grade.

Running the overall attendance by itself in SPSS gave no insight, as there were not enough cases to make any inferences, and single variable cluster analysis in SPSS did not add any value. However, I was more interested in making a connection or relationship to the number of Fs earned with the number of days absent rather than just the number of days absent, and SPSS was able to help with that (see Figure 9). As before, the cluster criterion was the Akaike Information Criterion (AIC) and the distance measured was log-likelihood. SPSS identified two clusters with a cluster quality of fair, with the primary predictor importance being total F count. The smallest cluster was 25 (46.3%) and the largest was 29 (53.7%) with a ratio size of 1.16. Of the two clusters, the majority of the students who received no Fs were placed in cluster 2, making up 58.6% of the students clustered. The cluster’s highest days absent count was 1 day, making up 24.1% of the cluster. Cluster 1’s F count majority was four, making up 36.0% of the cluster, and highest days absent was four as well, making up 20% of the cluster.

The next cluster chart (see Figure 9) provided a better visual of the correlation between the number of days absent and the number of Fs earned. The first cluster was primarily students who had zero Fs, one F, and two Fs. Taking notice of the five Fs, the two groups were included in cluster 1, which had the fewest groupings and lowest days absent. Cluster 2 had max 6 days absent
but spanned into the zero Fs, the three Fs, and the six Fs, demonstrating the three Fs groups. Cluster 3 was every grouping with four Fs and one group of one F with 8 days absent.

Figure 9. Scatterplot of F rate versus attendance for semester 1.

I then ran the exact same cluster analysis for semester 2, again looking for any connection between the days absent and the number of Fs received. SPSS created three clusters with a cluster quality right in the middle of fair. The smallest cluster was 17 (30.9%) and the largest was 19 (34.5%) with a ratio size
of 1.12. Of the three clusters, the largest was cluster 1, composed with the majority of students with an F count of two (57.9%) and 3 (21.1%) days absent. The second largest was cluster 3, composed with the majority of students having an F count of zero (52.6%) and 1 (31.6%) day absent. The smallest cluster was composed of primarily of students who received a total F count of three (64.7%) and had 4 (23.6%) absent days.

When looking at the scatterplot of the same cluster (see Figure 10), it was noticeable that semester F count was the primary measure with the most weight. The first cluster was only students who had one F and two Fs. Taking notice of the 10 days absent, that group was included in cluster 1 across the number of Fs earned and was the only category of days absent that fell within a single cluster. Cluster 2 included all absences for those who earned passing grades (no Fs) with a small percentage of students who earned one F. Cluster 3 had every grouping in those who had one F and who had five Fs, both with high numbers of absences.

Further exploratory descriptive analysis of the pre-existing attendance data was needed to continue answering the second research question, regarding what the suspension data of these students reveal. A trend of suspensions showed that 10 of the 55 students (18%) were suspended while they were in seventh grade.
The district was unable to provide the reasons for their suspensions as my original research was designed to analyze; however, I still wanted to explore how many students were suspended, how many times they were suspended, and how many days the suspension lasted (see Appendix B).

An underlying research question I asked was about the nature of the electives. Next, I explored the data by the descriptive analysis method to help answer that (see Appendix C). I wanted to know whether a student being forced into an elective, particularly an intervention, would be a connection to future attendance at a continuation high school. My theory was that because the student was forced to take a class where he or she was struggling, the student
would not build a connection with school and possibly would have resentment because the choice of a “fun” class had been taken away or because he/she had to take two classes in the same subject.

I broke down the electives into three categories. The first was non-intervention by choice, which were electives that required the student to apply, interview, audition, or request to get into the class. AVID was a class that focused on getting students ready for college. ASB was a class for leadership on campus. Band and Choir included musical instruments and vocals. The next category I used as a subset was non-intervention, which were electives that some students may have requested, though most students were placed in those classes at random by the computer to fill the class and to give the student a random elective. In Computer Applications, the students learned the basic functions of computers. In Art, the students learned a variety of techniques and types of art. In Digital Media, the students learned the basics of how to take and manipulate pictures and videos. In STEM, the students learned the topics of its name: science, technology, engineering, and math. The third category of electives was the intervention group, which were electives that the counselors chose for the student as determined by deficiencies on state testing. Study Skills was a general class that helped with organization and how to take notes. Literature Support was a class that helped with increasing vocabulary, finding an author’s purpose, and identifying main ideas. SI Reading was a similar class but
focused more on the skill of reading and comprehension of what was being read. Learning was a class that helped with math skills.

Table 7 contains a list of all electives in alphabetical order, rather than by category. The table shows how many students took that class per semester and then how many Fs were earned in that class over the two semesters.

As for each category, the non-intervention of choice (ASB, AVID, Band, and Choir) had a total of three Fs (12%) out of 12 students first semester and zero Fs out of 10 students for second semester. The category of non-intervention (Art, Computer Applications, Digital Media, and STEM) had a total of five Fs (22%) out of 23 students first semester and six Fs (24%) out of 25 students the second semester. The intervention category (Learning, Literature Support, SI Reading, and Study Skills) had a total of three Fs (16%) out of 19 students first semester and zero out of 20 for the second semester. Before doing this research, I expected the intervention category to have the highest enrolled and the highest F rate; however, I was incorrect with both assumptions. It was the regular non-intervention category with both the highest enrolled and almost double the amount of Fs the first semester, five as compared with three in the non-intervention of choice and the intervention. Second semester, the non-intervention category had six Fs (one in Art and five in Computer Applications), while all other electives had zero Fs.
Table 7

Number of Students Who Took Each Elective and How Many Students Failed It

<table>
<thead>
<tr>
<th>Elective</th>
<th>First semester students</th>
<th>First semester Fs</th>
<th>Second semester students</th>
<th>Second semester Fs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art</td>
<td>12</td>
<td>1</td>
<td>13</td>
<td>1</td>
</tr>
<tr>
<td>ASB</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>AVID</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Band</td>
<td>5</td>
<td>1</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Choir</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Computer Applications</td>
<td>8</td>
<td>3</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>Digital Media</td>
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<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Learning</td>
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<td>0</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Literature Support</td>
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<td>5</td>
<td>0</td>
</tr>
<tr>
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</tr>
<tr>
<td>STEM</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Study Skills</td>
<td>7</td>
<td>2</td>
<td>7</td>
<td>0</td>
</tr>
</tbody>
</table>

To further understand the data, I ran a cross-tabulation in SPSS of the same elective data. As I did for my handwritten analysis, I recoded the grades to remove the plus or minus; that way, the four possible letter grades were A, B, C, and F. I did that because it provided a clearer look and more students fit into the four clusters as opposed to 10 clusters of A+, A-, B+, B-, C+, C-, and F.
When using descriptive research design, I separated the count of Fs that a student received for each elective class by each semester. In this section, I used SPSS to create a cross-tabulation table (see Table 8) that compared all letter grades earned in each elective separated by semester. The highest percentage group for the letter grade A was 23.1% for three students out of 13 who took Art and three students out of 13 who took Computer Applications. Both classes were in the non-intervention category, which I described as electives that were given at random to fill the students’ schedule. The highest percentage for the letter grade B was 26.7% for four students out of 15 who took Art. The highest percentage for the letter grade C was 26.7% for four students out of 13 who took Art, and the highest percentage for the letter grade F was 27.3% for three students out of 11 who took Computer Applications. It was interesting to see the averages of given grades were consistent across the board for most classes. The highest percentage exception was for Computer Applications, with 23.1% of As, 6.7% of Bs, 6.7% of Cs, and 27.3% of Fs.

I continued to use SPSS to create another cross-tabulation table (see Table 9) that compared all letter grades earned in each elective in semester 2. The highest percentage for the letter grade A was 20.0% for two students out of 10 who took Band, which was a non-intervention elective of choice. There was a tie for the highest percentage for the letter grade B, 20% for three students out of 15 who took Art, which was in the non-intervention category, and three students out of 15 who took Study Skills, which was in the intervention category.
Table 8

Cross-Tabulation Comparison of Grades Received for Electives in Semester 1

<table>
<thead>
<tr>
<th>Elective</th>
<th>Semester 1 grade rec.</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N/A</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>F</td>
<td></td>
<td></td>
<td>Total</td>
</tr>
<tr>
<td>Not enrolled</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>SEM1</td>
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<td>0.0%</td>
<td>1.8%</td>
<td></td>
</tr>
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<td>4</td>
<td>4</td>
<td>1</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td></td>
<td>%</td>
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<td>23.1%</td>
<td>26.7%</td>
<td>26.7%</td>
<td>9.1%</td>
<td>21.8%</td>
<td></td>
</tr>
<tr>
<td>ASB</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>%</td>
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<td>7.7%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>1.8%</td>
<td></td>
</tr>
<tr>
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<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>%</td>
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<td>0.0%</td>
<td>6.7%</td>
<td>6.7%</td>
<td>18.2%</td>
<td>7.3%</td>
<td></td>
</tr>
<tr>
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<td>2</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>0.0%</td>
<td>15.4%</td>
<td>0.0%</td>
<td>13.3%</td>
<td>9.1%</td>
<td>9.1%</td>
<td></td>
</tr>
<tr>
<td>Choir</td>
<td>#</td>
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<td>0</td>
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<td>0</td>
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<tr>
<td></td>
<td>%</td>
<td>0.0%</td>
<td>15.4%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>3.6%</td>
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</tr>
<tr>
<td>CompApp</td>
<td>#</td>
<td>0</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>0.0%</td>
<td>23.1%</td>
<td>6.7%</td>
<td>6.7%</td>
<td>27.3%</td>
<td>14.5%</td>
<td></td>
</tr>
<tr>
<td>DigMedia</td>
<td>#</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
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<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>6.7%</td>
<td>9.1%</td>
<td>3.6%</td>
<td></td>
</tr>
<tr>
<td>Learning</td>
<td>#</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>0.0%</td>
<td>7.7%</td>
<td>6.7%</td>
<td>13.3%</td>
<td>0.0%</td>
<td>7.3%</td>
<td></td>
</tr>
</tbody>
</table>
The highest percentage for the letter grade C was 23.3% for eight students out of 24 who took Art. The highest percentage for the letter grade F was 83.3% for five students out of six who took Computer Applications, which was a non-intervention elective. It was interesting to see that the averages of given grades were not as consistent across the board for most classes in the second semester as they were in the first. Computer Applications and Art were the only two
electives that had at least one student with each letter grade. They also had the highest enrollment.

For the two-step cluster analysis (see Figure 11) there was a single variable input, which was the semester 2 letter grades. As before, I ran the two-step cluster classification using the Akaike Information Criterion (AIC) for SPSS to auto-cluster. There were four fixed clusters with one variable, the letter grade, that was measured in the cluster, adding the element name as the evaluation field. The cluster quality was all the way over through the good level, and the distance measurement was log-likelihood.

The predictor importance of the four clusters had the largest size (see Figure 12) beginning with cluster 1 for 24 students (43.6%) with the letter grade of C. The second highest was cluster 3 for 15 students (27.3%) with the letter grade of B. The third cluster was number 2 for 10 students (18.2%) with the letter grade of A. The fourth cluster was number 4 for six students (10.9%) with the letter grade of F. The evaluation field had the name of the elective class: Art for clusters 1 (33.3%) and 3 (20%), Band for cluster 2 (20.0%), and Computer Applications for cluster 4 (83.3%). The smallest size was six students (10.9%), and the largest size was 24 (43.6%), with a ratio size of 4.0.

In regard to the underlying research question about the nature of the electives, I was looking for a connection between intervention classes and attending a continuation high school. Yet after writing my descriptive analysis, I learned that not a single student failed only the elective, and my focus changed.
Table 9

*Cross-Tabulation Comparison of Grades Received for Electives in Semester 2*

<table>
<thead>
<tr>
<th>Elective</th>
<th>Elective grade rec.</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>ART</td>
<td># 1</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>% 10.0%</td>
<td>20.0%</td>
</tr>
<tr>
<td>ASB</td>
<td># 1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>% 10.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>AVID</td>
<td># 0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>% 0.0%</td>
<td>6.7%</td>
</tr>
<tr>
<td>Band</td>
<td># 2</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>% 20.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Choir</td>
<td># 1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>% 10.0%</td>
<td>6.7%</td>
</tr>
<tr>
<td>CompApp</td>
<td># 1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>% 10.0%</td>
<td>6.7%</td>
</tr>
<tr>
<td>DigMedia</td>
<td># 0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>% 0.0%</td>
<td>6.7%</td>
</tr>
<tr>
<td>Learning</td>
<td># 1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>% 10.0%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>
When a student failed an elective, it was always in combination with another class, and I wanted to know what that connection or relationship was. I ran an auto-cluster for Fs in the elective versus all grades in other classes: Language Arts, Math, Science, Social Studies, and Physical Education. It was run with the Akaike Information Criterion and measured distance by the current number of
clusters at 0. The algorithm was two-step with one input and two clusters, and the cluster quality was good, all the way to the right. Cluster 2 had the higher predictor importance at a size of 79.6%. Cluster 1 had the lessor predictor importance at a size of 20.4%. The ratio between the two sizes of the clusters was 3.91.

**Model Summary**

<table>
<thead>
<tr>
<th>Algorithm</th>
<th>TwoStep</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inputs</td>
<td>1</td>
</tr>
<tr>
<td>Clusters</td>
<td>4</td>
</tr>
</tbody>
</table>

**Cluster Quality**

![Cluster Quality Chart](image)

*Figure 11. Cluster quality for four clusters.*
Eleven students out of 55 (20%) failed their electives in their first semester of their seventh-grade school year (see Figure 13). Nine of those 11 (81.8%) also failed Language Arts, while two (18.2%) others barely passed with a C-. As a reminder, this district did not give the letter grade D, which means a C- was just above passing. Seven of the 11 (63.6%) students failed Math along with failing their elective. One of the 11 students (9.1%) passed Math with a C, and three students (27.3%) barely passed with a C-. Science was roughly the same with eight students out of 11 (72.7%) failing both the elective and Science, while two
students (18.2%) passed with a C- and one student (9.1%) passed with a C. It was a little more spread out when looking at the relationship between the failed elective and the Social Studies grades. Four out of the 11 students (36.4%) failed both classes. Two students (18.2%) passed with a C-, four students (36.1%) passed with a solid C, and one student (9.1%) passed Social Studies with a B-. Of these 11 students who failed their elective, five (45.5%) passed Physical Education with an A, one student (9.1%) even with an A+. One student earned a B, another earned a B-, another earned a C, and one more earned a C- (each at 9.1%). The strongest connection of failing an elective was with also failing Language Arts, by 81.8%. The weakest connection was failing both the elective and Physical Education, by only one student (9.1%).

In the second semester, only six students out of 55 (11%) earned Fs in their electives (see Figure 14). Of those six students, five (83.3%) also failed Language Arts, which was 2% more than the students who failed both their elective and Language Arts during the first semester. All of the six students who failed their elective second semester also failed both Social Studies and Math. Five out of the six (83.3%) failed Science, and one student (16.7%) passed it with a B, which was 11% more than the students who failed both their elective and Science during the first semester. The grades for Physical Education were spread out as they were in the first semester, even among these six: two A-s (33.3%), one B (16.7%), one B- (16.7%), and one C (16.7%).
### Sem. 1 English grade for student with sem. 1 elective grade of F

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid percent</th>
<th>Cumulative percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-</td>
<td>2</td>
<td>18.2</td>
<td>18.2</td>
<td>18.2</td>
</tr>
<tr>
<td>F</td>
<td>9</td>
<td>81.8</td>
<td>81.8</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

### Sem. 1 Math grade for student with sem. 1 elective grade of F

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid percent</th>
<th>Cumulative percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>1</td>
<td>9.1</td>
<td>9.1</td>
<td>9.1</td>
</tr>
<tr>
<td>C-</td>
<td>3</td>
<td>27.3</td>
<td>27.3</td>
<td>36.4</td>
</tr>
<tr>
<td>F</td>
<td>7</td>
<td>63.6</td>
<td>63.6</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

### Sem. 1 History/Social Science grade for student with sem. 1 elective grade of F

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid percent</th>
<th>Cumulative percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-</td>
<td>1</td>
<td>9.1</td>
<td>9.1</td>
<td>9.1</td>
</tr>
<tr>
<td>C</td>
<td>4</td>
<td>36.4</td>
<td>36.4</td>
<td>45.5</td>
</tr>
<tr>
<td>C-</td>
<td>2</td>
<td>18.2</td>
<td>18.2</td>
<td>63.6</td>
</tr>
<tr>
<td>F</td>
<td>4</td>
<td>36.4</td>
<td>36.4</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

### Sem. 1 Science grade for student with sem. 1 elective grade of F

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid percent</th>
<th>Cumulative percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>1</td>
<td>9.1</td>
<td>9.1</td>
<td>9.1</td>
</tr>
<tr>
<td>C-</td>
<td>2</td>
<td>18.2</td>
<td>18.2</td>
<td>27.3</td>
</tr>
<tr>
<td>F</td>
<td>8</td>
<td>72.7</td>
<td>72.7</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

*Figure 13. Semester 1 failed elective versus grades in all other classes.*
<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid percent</th>
<th>Cumulative percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>5</td>
<td>45.5</td>
<td>45.5</td>
<td>45.5</td>
</tr>
<tr>
<td>A+</td>
<td>1</td>
<td>9.1</td>
<td>9.1</td>
<td>54.5</td>
</tr>
<tr>
<td>B</td>
<td>1</td>
<td>9.1</td>
<td>9.1</td>
<td>63.6</td>
</tr>
<tr>
<td>B-</td>
<td>1</td>
<td>9.1</td>
<td>9.1</td>
<td>72.7</td>
</tr>
<tr>
<td>C</td>
<td>1</td>
<td>9.1</td>
<td>9.1</td>
<td>81.8</td>
</tr>
<tr>
<td>C-</td>
<td>1</td>
<td>9.1</td>
<td>9.1</td>
<td>90.9</td>
</tr>
<tr>
<td>F</td>
<td>1</td>
<td>9.1</td>
<td>9.1</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

*Figure 13 cont. Semester 1 failed elective versus grades in all other classes.*

Over the two semesters, not a single student failed only the elective; it was always in combination with failing an academic class. The strongest connection was failing the elective and Language Arts, with nine out of 11 (81.8%) and five out of six (83.3%). Failing the elective and failing math also had a strong connection with seven out of 11 (63.6%) and six out of six (100%).

A chi-square test is usually a comparison of two variables simultaneously (Statistics Solutions, 2019); however, because I put the electives into three categories, I wanted to see if I could run a chi-square with the three variables of the sample size I was given (see Table 10).
<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Valid percent</th>
<th>Cumulative percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-</td>
<td>1</td>
<td>16.7</td>
<td>16.7</td>
</tr>
<tr>
<td>F</td>
<td>5</td>
<td>83.3</td>
<td>83.3</td>
</tr>
<tr>
<td>Total</td>
<td>6</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

**Sem. 2 Math grade for student with sem. 2 elective grade of F**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Valid percent</th>
<th>Cumulative percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>6</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

**Sem. 2 History/Social Science grade for student with sem. 2 elective grade of F**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Valid percent</th>
<th>Cumulative percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>6</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

**Sem. 2 Science grade for student with sem. 2 elective grade of F**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Valid percent</th>
<th>Cumulative percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>1</td>
<td>16.7</td>
<td>16.7</td>
</tr>
<tr>
<td>F</td>
<td>5</td>
<td>83.3</td>
<td>83.3</td>
</tr>
<tr>
<td>Total</td>
<td>6</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

**Sem. 2 Physical Education grade for student with sem. 2 elective grade of F**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Valid percent</th>
<th>Cumulative percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-</td>
<td>2</td>
<td>33.3</td>
<td>33.3</td>
</tr>
<tr>
<td>B</td>
<td>1</td>
<td>16.7</td>
<td>16.7</td>
</tr>
<tr>
<td>B-</td>
<td>1</td>
<td>16.7</td>
<td>16.7</td>
</tr>
<tr>
<td>C</td>
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<td>33.3</td>
</tr>
<tr>
<td>Total</td>
<td>6</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

*Figure 14.* Semester 2 failed elective versus grades in all other classes.
The three elective groupings were non-intervention of choice (classes that students had to make an effort to attend), non-intervention (classes the computer randomly assigned to students not in one of the other two groupings), and intervention (classes students were required to take based on remedial needs). For the chi-square, I took the three groupings and the fail rate of each academic class for each semester (see Figure 15).

Looking at semester 1 (see Table 11), the test statistic value was 4.840 with 4 degrees of freedom and a $p$ value of 0.304. Because the $p$ value (0.304) was greater than the significance level of 0.05, there was no association between the elective grouping and the failure rate of the academic classes.

Table 10

*Elective Groupings for Semester 1*

| ElectiveGroup_sem1 | Sem. 1 Elective - Fail Status Crosstabulation | \[ \begin{array}{c|c|c|c} \hline & \text{N} & \text{Y} & \text{Total} \\ \hline \text{Count} & 9 & 3 & 12 \\ \text{Expected Count} & 9.6 & 2.4 & 12 \\ \text{Residual} & -0.6 & 0.6 & \text{-} \\ \hline \text{Count} & 18 & 5 & 23 \\ \text{Expected Count} & 18.3 & 4.7 & 23 \\ \text{Residual} & -0.3 & 0.3 & \text{-} \\ \hline \text{Count} & 16 & 3 & 19 \\ \text{Expected Count} & 15.1 & 3.9 & 19 \\ \text{Residual} & 0.1 & -0.9 & \text{-} \\ \hline \text{Count} & 43 & 11 & 54 \\ \text{Expected Count} & 43 & 11 & 54 \\ \hline \end{array} \]
Continuing with a chi-square test for semester 2, the cells did not make up the minimum expected count to meet the validity rules (see Table 12). Six students failed their electives second semester, which made the sample size too small to make any assumptions; therefore, it would not yield a valid result (see Figure 16). The variables were seen as not independent of each other (Statistics Solutions, 2019). In this case, the percentage of cells that have an expected count of less than 5 (5 cells/55.6%) was exceeded, which does not meet the needed 80% as one of the assumptions of using chi-square (see Table 13).
Table 11

*Chi-Square Test Semester 1*

<table>
<thead>
<tr>
<th>Chi-Square Tests</th>
<th>Value</th>
<th>df</th>
<th>Asymptotic Significance (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ElectiveGroup_sem1 * Sem1_Count_F_ACADEMIC_GROUP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Chi-Square</td>
<td>4.840a</td>
<td>4</td>
<td>0.304</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>4.963</td>
<td>4</td>
<td>0.291</td>
</tr>
<tr>
<td>Linear-by-Linear Association</td>
<td>2.643</td>
<td>1</td>
<td>0.104</td>
</tr>
</tbody>
</table>

N of Valid Cases  54

a. 4 cells (44.4%) have expected count less than 5. The minimum expected count is 3.11.

Table 12

*Chi-Square Test Semester 2*

<table>
<thead>
<tr>
<th>Chi-Square Tests</th>
<th>Value</th>
<th>df</th>
<th>Asymptotic Significance (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ElectiveGroup_sem2 * Sem. 2 Elective - Fail Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Chi-Square</td>
<td>7.512a</td>
<td>2</td>
<td>0.023</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>9.817</td>
<td>2</td>
<td>0.007</td>
</tr>
<tr>
<td>Linear-by-Linear Association</td>
<td>0.354</td>
<td>1</td>
<td>0.552</td>
</tr>
</tbody>
</table>

N of Valid Cases 55

a. 3 cells (50.0%) have expected count less than 5. The minimum expected count is 1.09.
Throughout my exploration of this research to find what pre-existing data revealed regarding middle school students’ eventual need for a continuation high school, I took notice of several students who stood out among the whole group of 55 students. The first student who stood out to me was the only student who was suspended one time for five days. As an assistant principal, I suspend for five days only if the infraction is severe, such as setting a trash can on fire or throwing chairs that hit a staff member. Furthermore, for the first semester, this student had an A in Computer Applications along with Cs for all other classes.

Figure 16. Chi-square semester 2 broken down by failure rate.
Table 13

*Elective Groupings for Semester 2*

<table>
<thead>
<tr>
<th>ElectiveGroup_sem2</th>
<th>Sem. 2 elective - fail status</th>
<th>Not fail</th>
<th>Yes fail</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-intervention of choice</td>
<td>Count</td>
<td>10</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Expected count</td>
<td>8.9</td>
<td>1.1</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>1.1</td>
<td>-1.1</td>
<td></td>
</tr>
<tr>
<td>Non-intervention</td>
<td>Count</td>
<td>20</td>
<td>6</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>Expected count</td>
<td>23.2</td>
<td>2.8</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>-3.2</td>
<td>3.2</td>
<td></td>
</tr>
<tr>
<td>Intervention</td>
<td>Count</td>
<td>19</td>
<td>0</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Expected count</td>
<td>16.9</td>
<td>2.1</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>2.1</td>
<td>-2.1</td>
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</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>49</td>
<td>6</td>
<td>55</td>
</tr>
<tr>
<td></td>
<td>Expected count</td>
<td>49</td>
<td>6</td>
<td>55</td>
</tr>
</tbody>
</table>

Second semester, this student maintained a C in Physical Education but dropped all other classes to an F, including Computer Applications.

A second student of notice was the only ASB student of the 55 students and the only straight A student, missing only one day, for the first semester. Second semester, this student maintained As in ASB and Physical Education, dropped
Language Arts and Math to Bs and Social Studies and Science to Cs, and missed 14 days of school. Both ASB and AVID were classes I categorized in the non-intervention of choice. Because students had to choose to apply and interview to get into it, students typically pass the class and maintain an overall good GPA. Therefore, it was surprising to discover an AVID student who failed all four academic classes and earned an A in Physical Education and an F in AVID, not missing a single day of school the first semester. Second semester, the Physical Education grade dropped to a C and the AVID grade was raised to a C, but the four academic classes were still Fs, and during that semester this student was suspended twice for one day each, missing a total of 4 days that semester.

Summary

Out of the 55 students who eventually attended a continuation high school, 44 of those students (80%) had one or more Fs. There were 33 students (60%) who declined in overall grades from first semester to second semester, which may be an indicator of possible future attendance at a continuation high school. Eight out of 10 suspended students (80%) declined in grades, and 25 out of 45 non-suspended students (56%) declined in grades. For nine students each semester (16%), attendance was a problem, with 10 or more absences. Four students (7%) missed school due to a death in the family, and three of those students were A and B students during their seventh-grade year. Ten students (18%) were suspended either once or twice for either 1 or 2 days at a time;
however, one student was suspended one time for 5 days and another student one time for 4 days.

The non-intervention electives of choice were the classes that the students had to go through a selection process to take: ASB, AVID, Band, and Choir. There were 12 students in this category. The non-intervention electives were defined as classes that could be requested by the student but most often were the classes where the counselor placed a student to fill the schedule, because the student was not in a non-intervention elective of choice or in an intervention: Art, Computer Applications, Digital Media, and STEM. There were 24 students in this category. The intervention elective classes were defined as classes that the student was required to take to work on a deficient skill: Learning, Literature Support, SI Reading, and Study Skills. There were 19 students in this category. Only two students of the 55 (4%) failed Physical Education, and eight students of 17 (47%) failed Computer Applications, which was the highest failed elective. First semester, 32% of the 55 students passed both their Physical Education and their Elective; 33% did the same second semester. The strongest connection between failing an elective and an academic class was with Language Arts: 81.8% first semester and 83.3% second semester. These 55 students all went on to attend a continuation high school, and although many showed significant signs of struggle at this age, there were some students who showed no signs. The next chapter will discuss recommendations.
CHAPTER FIVE
RECOMMENDATIONS AND CONCLUSIONS

The 55 students in this study all attended a continuation high school in the 2017/2018 school year. The pre-existing data were from students who were in the same school district when they were in seventh grade. The conclusions and recommendations were found through descriptive research design and cluster analysis. First, it was noticeable that regardless of passing or failing, 33 students (60%) declined from first semester to second semester. The recommendation is for the counselor to look at the overall seventh-grade marks at the beginning of eighth grade to spot any kind of decline, even if students were above Cs. An academic decline was also noticeable among the students who were suspended. Eight out of 10 (80%) suspended students had a decline of grades from first semester to second semester. It is recommended that school site leaders use alternatives to suspension. Additionally, 44 students (80%) earned at least one F; it is recommended that administration at the middle school examine instructional practices of their classroom teachers and offer alternatives to the traditional environment and the systemic structure, including how teachers give extra help. Additionally, experiencing a death in the family was discovered through descriptive research design and could possibly have affected students in the years after seventh grade; therefore, the recommendation is to make sure students who have lost a loved one are getting social and emotional support,
regardless of whether they were a successful student when the death occurred. Three out of the four students who were absent due to bereavement had passing grades at the time of this tragedy.

Next, the highest number of failed electives was in the category of the non-intervention elective. This was the category of students who were placed at random in their elective, specifically Computer Applications and Art. The recommendation is for counselors to make the best effort to place students based on preference for electives rather than allowing the computer to fill the classes by random placement. It is always a struggle for districts to fund more electives; however, it is also recommended to offer a hands-on type of class such as Wood Shop as an alternative elective, because Computer Applications was a technical and difficult class for many students to pass.

Last, it can be concluded that failing or struggling in Language Arts was more of an indicator than failing any other class, although Math was close behind it. A recommendation to the district would be to look at the instructional practices, engagement practices, and grading policies of Language Arts teachers, as well as working with all teachers for cross-curricular and Common Core teaching practices, specifically in reading and writing.

Overview

Out of the 55 students who eventually attended a continuation high school, 44 (80%) had at least one or more Fs. There were 33 students (60%) who declined in overall grades from first semester to second semester, which may be
an indicator of attending a continuation high school years later. Eight out of 10 suspended students (80%) declined in grades, and 25 out of 45 non-suspended students (56%) declined in grades. Although attendance was a problem for nine students (each semester separately) with 10 or more absences, the number of three or more Fs a student earned in correlation to being absent 10 days or more was not a connection for all nine of them. Four students were marked absent due to bereavement, and although their grades were not affected in the seventh grade, their grades were obviously affected at some point in high school because they eventually were sent to a continuation high school. Ten students (18%) were suspended. Eight out of those 10 students (80%) declined academically from first semester to second semester. The non-intervention electives of choice were the classes that the students had to go through a selection process to take: ASB, AVID, Band, and Choir. There were 12 students (22%) in this category. The non-intervention electives were defined as classes that could be requested by the student but most often were chosen to fill the schedule because the student was not in a non-intervention elective of choice or in an intervention: Art, Computer Applications, Digital Media, and STEM. There were 24 students (44%) in this category. The intervention elective classes were defined as classes that the student was required to take because of a skill deficiency: Learning, Literature Support, SI Reading, and Study Skills. There were 19 students (35%) in this category. Only two students (4%) out of 55 failed Physical Education, and eight students (53%) failed Computer Applications, which was the highest failed
elective. These 55 students all went on to attend a continuation high school, and although many showed signs of struggle at this age in their academics, attendance, or discipline, there were some students who showed no signs of struggle, such as the 10 students (18%) who never earned an F.

Recommendations for Educational Leaders

Leaders are recommended to work with their teachers with regard to their instructional practices, their grading policies, and their engagement practices. Students should be given choices in education, as engagement wavers with each passing year. Forty-four of these 55 students (80%) had one or more Fs. Students who fail any class, not just the academic classes, are easily identifiable and warrant interventions; however, if they fail an elective and an academic class in the same semester, leaders need to intervene. When students fail their electives, it is recommended that school site leaders take notice. An elective class is generally one that students enjoy and one that is usually less stressful than the four academic classes. It is recommended that these non-intervention teachers give students leadership responsibility and build relationships with their students as the other two categories naturally do so. Not one of the 55 students failed only their elective. If at all possible, it is recommended that the district offer a variety of elective types beyond Art and Computer Applications, such as Drama.

The non-failing students were harder to identify as future continuation high school students. District leaders may not have the funds to support a student
with therapy for a year after a student experiences a death in the family, for example; however, it is recommended that districts and school sites address the social and emotional needs of their students in any way their funds allow.

Another indicator that a student may later need a continuation high school was the decline in grades from first semester to second semester. This can be easily overlooked when the student is still passing classes. It is recommended that leaders, particularly counselors, look at the incoming eighth graders for a declining pattern of grades. Once that student is identified, the counselor can then have an open conversation with the student and the parents in attempts to break that pattern, such as beginning the Student Intervention Team (S.I.T.), where the teachers, the parents, the counselor, and the school administration work together to help this student reverse the declining pattern. That declining pattern also affected eight out of 10 students (80%) who were suspended. It is recommended that school site leaders look for alternatives to suspension.

Next Steps for Educational Reform

For true educational reform, schools must do better in increasing students’ reading and writing skills. We must be relentless, always working on these skills, every day, in every subject, and throughout every school year. The cross-curriculum teaching that came out of Common Core needs to be maximized at every level. There needs to be a break in the systemic structure of the factory model of education for all students. All students do not learn in the same way. There needs to be choice in the method of instruction and system of schools.
The alternative education settings typically are not offered until 10th grade, after the student has failed for years. That change of environment needs to be offered at the middle school level. Additionally, the social and emotional needs of our students can no longer be ignored. Students are expected to deal with a variety of emotions and a great amount of stress, and unless they have the self-awareness to ask for help, which most middle school students do not have, they flounder with no guidance. Educational reform absolutely needs to include more counseling for mental health and social and emotional support.

Recommendations for Future Research

A recommendation for future research would be to take a current seventh-grade group, run through the same analysis, use these indicators as a guide for interventions, and follow those students through high school. It would be informative to do a longitudinal study with interventions in place to see if they could make a difference. These data could also be compared with that of other seventh-grade students from that same year who did not attend a continuation high school, to find the differences. I am specifically curious if there were other students who went through bereavement, and how many other students had a decline in grades from first semester to second but still managed to stay on track for graduation. Another possible future study would be to do this same descriptive exploratory analysis but with mixed methods and interview those current continuation high school students about their seventh-grade year to identify when they think their path to continuation high school began.
Limitations of Study

This study had a limited scope of 55 current continuation high school students who had been in the same district when they were in seventh grade, which was another limitation of taking data from only one year. Also, choosing a quantitative study limited my ability to gain more insight without interviews, along with being limited by the district’s filters on data. It would have been interesting to know why the 10 students were suspended. I also have no insight into what was happening in the classroom, specifically with Computer Applications. There were students who never missed a day of school or who never got suspended, yet still ended up at a continuation high school, and without interviews, I did not have multiple data points to triangulate my results or more descriptive information on the reasons for the Fs, the absences, and the suspensions.

Conclusion

The overview for this descriptive exploratory study answered questions of (1) what a pre-existing data set revealed regarding middle school students’ eventual need for a continuation high school, (2) the nature of the electives, and (3) the attendance and the suspension data of these 55 students when they were in the seventh grade. The pre-existing data revealed that 44 students (80%) earned at least one F, that students failed or struggled the most in Language Arts, with Math right behind it, and that 33 out of 55 students (60%) declined in grades from first semester to second semester. Physical Education was the most passed class, with only two students (4%) failing a single semester, and not
a single student failed only his/her elective. The nature of the electives was
categorized into three groups: non-intervention of choice, non-intervention, and
intervention. The largest number of students failing an elective came from
Computer Applications, a non-intervention, with five out of nine students (56%)
failing. The attendance data revealed nine out of the 55 students (16%) were
considered chronically absent, with 10 or more per semester. Four students
(6%) had excused absences due to bereavement, and 10 students (18%) had
excused absences due to suspensions. Eight of those 10 (80%) suspended
students had declining grades from first semester to second semester.

Educational leaders at the site level should, first, look for students who
decline academically from one semester to the next and, second, work with their
teachers on their instructional practices, grading policies, and engagement
practices. To truly reform education, educational leaders at the district level need
to spend resources on the social and emotional needs of students. A
recommended future study is to compare the same seventh-grade data of
students who went on to attend a continuation high school with that of students
who went on to graduate from the regular comprehensive high school. Using
descriptive exploratory analysis and cluster analysis through SPSS, I was able to
analyze pre-existing data in an emergent design to discover possible indicators
that a student may need a continuation high school. This research method can
be used by current administrators and counselors at the middle school level to
identify students early.
APPENDIX A

DESCRIPTIVE DATA FOR NUMBER OF FS EARNED PER SEMESTER
I began to explore these subsets in various ways in order to understand the data better for the cluster analysis. First, I looked for students who did not receive any Fs either first or second semester of their seventh-grade school year. The analysis for the subsets broke down into (1) having received no Fs for both semesters, (2) having received one F for either semester, (3) having received two Fs for either semester, (4) having received three Fs for either semester, (5) having received four Fs for either semester, (6) having received five Fs for either semester, and (7) having received six Fs for either semester. Within each description of the students who failed classes, I wanted to represent the overall picture of what the pre-existing data was showing about each individual. Therefore, I added how many days the student was absent and if any of those absences were for bereavement or suspension.

Of the 55 students who eventually attended a continuation high school, 10 students (18%) showed no signs of academic failure during their seventh-grade school year. One student’s lowest grade was a C-, but the student primarily had As and Bs. The only absence she/he had was for bereavement. Another student had all Bs and Cs except for an A+ in Band. This student was absent 7 days the first semester and only 3 days the second semester. An AVID student had equal number of Bs and Cs and was absent only a single day the whole school year. One student had all Bs and Cs both semesters and stood out from all other students as the only student who was absent for both death and suspension: 1 day first semester for a suspension and absent 7 days second
semester for bereavement. A similar student had all Bs and Cs both semesters and was absent 5 days first semester, 3 of those for a suspension. One particular student who was in Computer Applications actually improved from first semester to second. This student went from three As, two Bs, and one C to five As and one B, missing 6 days the first semester and 8 the second semester. A common pattern that stood out with this group was not the number of days absent but rather the reason for the absences, which were bereavement and suspensions.

As I was exploring the subset further, I noticed that although these 10 students (18%) passed all of their classes, three slightly declined in their grades, which was something I continued to notice in each subset. The following three students (5%) were those who never received an F, although their grades did drop from first semester to second semester. One particular student had three As and three Bs first semester, missing one day of school, with a decline to four Bs and two Cs second semester, missing no days of school. An ASB student earned six As first semester, missing only 1 day of school, with a decline to two As, two Bs, and two Cs, missing 14 days of school, some due to bereavement, which will be discussed for its importance later in this chapter. An AVID student went from two As, one B, and three Cs, missing 3 days of school, to second semester receiving only one A and four Cs, missing 8 days. Bereavement and decline of multiple grades were factors that stood out for these students.
The students from this subset group of no Fs missed 37 days first semester, an average of 3.7. Four of those days (11%) were due to suspension by two students. Second semester, these students missed 58 days, a 5.8 average with no suspensions. The lowest number of absences from this group was zero and the highest was 14.

After finding the students who did not fail any classes, I began analyzing students who had earned one F for at least one semester. There were seven students (13%) out of the 55 from this study who had one F for at least one semester. All of these students had Cs or better their first semester. One particular student had one A, three Bs, and two Cs first semester with a Band elective and dropped second semester to an F in Math along with two As and three Cs, not missing a single day of school the entire year. Another student with Cs and higher first semester dropped the Math grade to an F while all others remained roughly the same. This student had a Study Skills elective and missed one day of school each semester. A similar student with an Art elective had almost the exact same grades both semesters, but the second semester F was in Language Arts. This student missed 2 days of school the first semester and 10 days the second semester. An academically good Choir student first semester, with three As and three Bs, earned an F second semester in Language Arts, and went from missing 8 days of school the first semester to missing 17 days the second semester. An Art student was consistent academically both semesters in all subjects except for Science, with a C first semester that dropped to an F
second semester. This student missed 3 days of school the first semester and 5
days the second semester. A student with a STEM elective with Cs and better
earned an F second semester in Social Studies. This student was absent 4 days
the first semester and 7 days the second semester; 4 of those days were from
one suspension. Only one student (2%) had one F both semesters, never
missing a day of school the whole year. The first semester was in Language
Arts, but in the second semester, the F was in Social Studies. The common
element for these students was the decline of grades from first to second
semester. It was noteworthy that they each had a different type of elective.

The following students from this subset group who had one F missed 14
days first semester, an average of 2 days, with no suspensions. Second
semester, these students missed 28 days, an average of 4, and there was one
student (2%) who was suspended for 4 days, an average of 0.6 days. The only
two students with perfect attendance came from this grouping. The lowest
number of absences from this group was zero and the highest was 17.

The first grouping was developed based on those who did not receive any
Fs in any subject areas for both semesters. The second grouping was
developed based on those who had received at least one F for either semester.
This third grouping was developed based on those who had received at least two
Fs in either or both semesters while all of the other grades were a C or better.
Eight students (15%) of the 55 students had two Fs in either or both semesters.
A Choir student went from one F in Social Studies first semester to two Fs
second semester in Social Studies and Math. A Study Skills student had an F first semester in Language Arts and then two Fs second semester, in Language Arts and Math. A Band student with Cs and Bs had two Fs second semester in Language Arts and Social Studies. Another first to second semester difference came from a student with all Cs and one A first semester who let two of those Cs become Fs in Math and Science. In the first semester, this student was in Study Skills and missed 6 days of school, but second semester, the elective changed to Art and the student missed 7 days of school. One student had two Fs both semesters in both Language Arts and Math, with Cs or better in all other classes, including the Literature Support elective. Only one other student had two Fs both semesters. Although one F was in Language Arts for both semesters, the F was in AVID first semester and in Math the second. Of the students who earned two Fs, the majority had an overall decline of grades, increasing the number of failed classes from first semester to second semester. Again, each of these students took different electives, and attendance or suspension was not a problem.

The students from the subset group who had two Fs missed 59 days first semester, an average of 7.4 with no suspensions. Second semester, these students missed 48 days, an average of 6 days with no suspensions. This is one of two groupings with no suspensions; the other is from the one student who earned six Fs. The lowest number of absences from this group was 1 and the highest was 14.
The fourth grouping was developed based on those who had received at least three Fs in either or both semesters while all of the other grades were a C or better. Those who had three Fs either or both semesters were 11 (20%) in total from the 55 students in this study. There were three students (5%) who earned three Fs but still maintained Cs or better in all other classes. One of these students, who was in the Study Skills elective, had three Fs first semester with two Cs and one A and was able to bring the F in Math to a C second semester. The opposite occurred with another Study Skills student, who went from two Fs in Science and Study Skills to three Fs in Language Arts, Math, and Science. Both students missed only 2 days of school each semester. A third student who happened to be in Study Skills also began the school year with three Fs in Language Arts, Math, and Science and was able to bring up the Language Arts grade to a C second semester, missing less than 3 days. These three students had the elective Study Skills in common and three Fs in their academic classes.

From the subset of the 11 students with three Fs, five students (9%) earned three Fs first and second semesters. One student earned the Fs in Language Arts, Math, and Science for both semesters and earned Cs or better for the other classes, including the elective of Art, while missing 10 days total for the year. Another student was almost the exact same with three Fs both semesters being in the same subjects as the first student: Language Arts, Math, and Science, but the other grades were Bs and an A in Physical Education. This student was in
Literature Support for an elective and missed 11 days total. A perfect attendance student who was in Computer Applications failed that class first semester along with Math and Social Studies and missed 1 day; that student failed Language Arts, Math, and Social Studies the second semester and received all Cs in other academic classes, plus an A in Physical Education. An Art student with 1 absence failed Language Arts, Math, and Social Studies the first semester and then failed Language Arts, Math, and Science second semester while passing Social Studies with a C. This student missed 4 days of school second semester and was suspended twice for a day each time. Another student had the exact same grades both semesters for all subjects: F Language Arts, F Math, C Social Studies, F Science, A Physical Education, and C Digital Media, missed no days of school the first semester, and missed 5 the second semester. The commonality for these five students was failing Language Arts and Math. They had different electives, high grades in Physical Education, and low absences.

The last subset of the 11 students with three Fs were three students (5%) who did not begin with three Fs but ended the school year that way. A student in the Computer Applications elective failed Math first semester, missing 3 days of school, but then second semester missed 4 days of school and failed three classes: Math, Language Arts, and Science. All other grades for the year were Cs or better. Another student who was in Art and who missed 4 days the first semester failed Language Arts and Science and then second semester had a third F in Social Studies. This student was suspended twice that semester for 1
day each time and missed 13 days total. The opposite happened to one student who failed Math, Social Studies, and Science first semester but was able to bring up the Language Arts grade to a C for second semester. This student missed only 1 day of school first semester and missed 3 days second semester due to a suspension. The commonality for each of these students showed a decline, having more Fs second semester than they did first semester.

The students from the subset group who had three Fs missed 22 days first semester, an average of 2 days with no suspensions. Second semester, these students missed 53 days, a 4.8 average, with three students being suspended over 7 days, an average of 0.6. The lowest number of absences from this group was zero and the highest was 13.

There were 10 students (18%) out of the 55 who earned four Fs during their seventh-grade year. This fifth grouping was developed based on those who had received at least four Fs in either or both semesters while all of the other grades were a C or better. One student failed all four academic classes both semesters but passed Physical Education with a C and Art with a B. A similar student failed all four academic classes both semesters but passed Physical Education with an A first semester and a B second semester and passed Art with a C both semesters; additionally, this student was absent only 1 day the whole year and it was from being suspended. A student who had Learning as an elective earned the same grades for both semesters, which were Fs for all four academic classes, a B for Physical Education and a C for Learning. The only
difference between the two semesters were the absences: 12 first semester and 22 second semester. There was another student whose semesters are the exact same even down to the number of days absent. This student also failed all four academic classes, earned Bs in Physical Education and in SI Reading, and missed 5 days each semester. Other than these students each failing the four academic classes, they have nothing else in common with each other.

From this subset of 10 students earning four Fs, there were four students (7%) who began with four Fs but were able to improve in their second semester, earning more passing grades. A Band student failed Band, Language Arts, Math, and Science first semester, missing 16 days, but passed Study Skills and Math, missing 11 days second semester. A different student was able to pass Math both semesters but failed Language Arts and Social Studies both semesters; first semester, this student had 15 absences and also failed Science and Physical Education but passed the SI Reading elective with a B. Second semester, the student was absent 5 days and passed Science and Physical Education with Cs. Another slight improvement, from four Fs to three, came from a student who missed 2 days of school the whole year and passed Physical Education with an A+. This student failed Language Arts, Math, and Science both semesters, and although he/she failed the Literature Support elective first semester, the student earned a B second semester. A similar student failed Language Arts, Math, and Science both semesters, and although he/she failed the Digital Media elective first semester, the student earned a B second
semester. This student was absent 11 days first semester and 10 second semester. Although this set of students showed a slight improvement from first to second semester, a commonality is that they all failed Language Arts both semesters.

Continuing the descriptive data on students from the subset who earned four Fs, there was a decline in grades for two of these students (4%). An A Band student who missed 3 days the first semester failed Math and Science, then declined second semester, missed 8 days, and failed all four academic classes. A student who failed Study Skills, Language Arts, and Science first semester, missing 6 days, failed all four academic classes and passed Study Skills with a B second semester, missing only two days of school. These two students did not miss much school at all, and yet they both failed all four academic classes only in the second semester.

The students from this subset group who earned four Fs missed 80 days first semester, an average of 8 days, with no suspensions. Second semester, these students missed 77 days, a 7.7 average with one suspension for 1 day, an average of 0.1. This group has the highest days absent both semesters by 21 days. The lowest number of absences from this group was zero and the highest was 26.

I next explored the subset for those who had five Fs. This sixth grouping was developed based on those who had received at least five Fs in either or both semesters while all of the other grades were a C or better. There were eight
students (15%) in total who had five Fs at least one semester. An AVID student
did not miss a single day first semester but failed all classes except Physical
Education, where the student received an A. Second semester, this student
missed 2 days for two suspensions and failed all academic classes, passing
Physical Education with a B this time and also passing AVID with a C. A student
who missed 3 days the whole school year earned three Fs first semester in Math,
Social Studies, and Science, also earning Cs in Language Arts and Computer
Applications with a B in Physical Education. Second semester, however, this
student failed all classes except Physical Education with a B. One student
declined from three Fs in Language Arts, Social Studies, and Science, adding Fs
in Math and Art second semester and missing 6 days first semester and 8
second semester. Another decline was from a student who took Art the first
semester and failed it plus Language Arts. The student passed Physical
Education with an A and all others with Cs; then, the elective switched to
Computer Applications and the student failed all classes except Physical
Education, passing it with a B.

Within the same subset of five Fs, the greatest decline from all 55 students
came from a student with all Cs and an A in Computer Applications first
semester, while missing 13 days (5 of those were for a suspension), who went to
all Fs except a C in Physical Education while missing 1 day second semester.
Only 1 student transferred into the district at the semester and failed all classes
except Study Skills, passing with a C and missing 23 days that second semester.
Four out of five of these students showed a decline from first semester to second semester. Although these students failed five classes, all of them passed Physical Education. Another commonality was their good attendance. They did not miss more than 8 days, taking into account the student who was suspended for five days, also not counting the student who was in the district for only one semester.

Additionally, there were two more students (4%) in the same subset of eight students (15%) with five Fs. The first student actually had five Fs both semesters, only passing Physical Education with a B first semester and an A second semester. This student had Computer Applications as an elective and was absent 4 days the first semester and 5 days the second semester. The second student with five Fs had passed Physical Education with a C and SI Reading with a B, missing 8 days first semester, but then failed Physical Education second semester and dropped his elective grade to a C. This student missed 15 days the second semester and had been suspended twice for a total of 3 days. The only commonality between these students was the five Fs.

The students from the subset group who had five Fs missed 34 days first semester, an average of 4.3. Five of those days (15%) were due to suspension by one student at 0.6 average; this was the only student from the 55 (2%) who was suspended for 5 days. Second semester, these students missed 57 days, a 7.1 average, with two students who were suspended for a total of 5 days, an
average of 0.6. The lowest number of absences from this group was zero and
the highest was 23.

The final descriptive analysis of students and their number of Fs was for
one student (2%) who had six Fs for at least one semester, which became the
seventh grouping, developed based on those who had received at least six Fs in
either or both semesters. A student who missed one day of school the whole
year had an improvement from the straight Fs first semester to two Bs in
Language Arts and Science, a C in Physical Education and three Fs in Math,
Science, and Computer Applications. This was also the greatest improvement
from all 55 students. The one student from this group missed 1 day first
semester, an average of 0.1, did not miss a single day second semester, and
was never suspended.
APPENDIX B

DESCRIPTIVE ATTENDANCE AND SUSPENSION DATA
I then looked for trends and patterns within the attendance data. Taking a step away from SPSS, I went back to the descriptive exploratory analysis. I discovered that 4 students (7%) were absent due to funeral, bereavement or death, which begins to address the third research question regarding what the attendance data reveals. I wanted to continue with the descriptive exploratory approach to try to get a picture of who these students were while they were in the seventh grade when this death occurred. One student earned As, Bs, and Cs both semesters in all classes including the elective Learning. First semester this student missed three unexplained days and second semester missed 1 day excused by a funeral. Another student with passing grades, all Cs and Bs, missed 7 days in total second semester with 2 of those were excused because of bereavement. An ASB student had straight As first semester with only one absence but dropped to two As, two Bs, and two Cs second semester with 14 absences. One of those absences were due to bereavement. A student with four Fs first semester missed 16 days of school and improved to only one F second semester missing 11 days, 4 of those due to bereavement and funeral. This student also changed electives from Band to Study Skills. The commonality among these students was that they all experienced a death. Three out of four of these students were passing all classes, yet they all ended up attending a continuation high school.

Further exploratory descriptive analysis of the pre-existing attendance data was needed to continue answering the second research question of what does
the attendance and the suspension data of these students reveal. A trend of suspensions showed that 10 of the 55 students (18%) were suspended while they were in seventh grade. The district was unable to give me the reasons for their suspensions as my original research was designed to analyze; however, I still wanted to explore how many students were suspended, how many times they were suspended and how many days the suspension lasted. Some of these students were absent for less than 5 total days per semester, showing that attendance was not an issue for this group of students. A student with all Cs and Bs both semesters was absent 9 days in total for the year, suspended 1 time for 3 of those days. An Art student missed 4 days first semester earning two As, two Cs, and two Fs, and in the second semester the student missed 13 days with two suspensions for one day each, and the grades changed to three Bs and three Fs. Another Art student was absent 4 days with a one day suspension for second semester but not absent once first semester. This students’ academic grades were all Fs and a C in Art for both semesters. The Physical Education grade went from an A to a B. A third Art student missed 1 day first semester passing three classes and failing three, and then missed 3 days second semester all from one suspension, passing four classes and failing two.

Continuing in the same subset of students who were suspended, I next described 2 of those 10 who missed very little school. An AVID student was not absent at all first semester and was only absent 4 days second semester, including two suspensions for one day each. This student had all Fs first
semester with an A in Physical Education but that dropped to a B and AVID went to a C for second semester. A fifth student with low absences had only one suspension in first semester with grades of three Fs, two Cs, and one A. This student missed 4 days second semester, including two suspensions of one day each, and the only grade change was the A to a B in Physical Education. A student in STEM dropped from one A, three Bs, and two Cs missing 4 days first semester to one A, two Bs, two Cs, and one F, missing 7 days second semester, 4 of those were from one suspension. Good attendance was a huge commonality among these students despite being suspended. Most of those suspensions were in the second semester. There was also a decline of grades from first semester to second specifically in Physical Education. These students’ commonality was their suspension but despite being suspended, they still missed very few days of school. This was interesting to me as it makes me wonder how the suspension affected them emotionally with their attitude toward school, since more than likely they would not have missed those days if they were not suspended.

As opposed to the students above who missed very little school, I continued exploring through the suspension data to find the following students who were suspended and missed more than 4 additional days. A student with two Bs in Physical Education and Literature Support along with four Cs missed 5 days first semester, with one of those being a suspension, then this student improved second semester to five Bs and one C, missing 7 days. Another student who
was in SI Reading missed 8 days first semester and failed all four academic classes, passed Physical Education with a C and Reading with a B. Then the student missed 15 days of second semester, failed all four academic classes including Physical Education, and passed Reading with a C. Three of those absences were due to two different suspensions: one for 1 day and one for 2 days. A particular student who took Computer Applications and got an A and earned Cs in all other classes was absent 13 days first semester; 5 of those days were from one suspension. Second semester this student was only absent for 1 day but had a huge academic decline, failing all four academic classes, while maintaining a C in Physical Education, and dropping to an F in Computer Applications. This student was the only one of the 55 students (2%) to have a 5 day suspension, and 1 of 3 (33%) who were suspended in the first semester. This student also had the largest academic decline from first semester to second semester. Overall, these students were absent 8 days or more regardless of their suspensions. Table B1 lists total count of how many suspensions for the 10 students who were suspended, the number of days they were suspended and the total days they were absent for the year.
Table B1

Number of Times a Student Was Suspended, Number of Days Student Was Suspended, and Number of Days Absent

<table>
<thead>
<tr>
<th>10 students were suspended</th>
<th>Number of suspensions</th>
<th>Number of days suspended</th>
<th>Total days absent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student #1</td>
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<td>5</td>
<td>14</td>
</tr>
<tr>
<td>Student #2</td>
<td>1</td>
<td>1</td>
<td>13</td>
</tr>
<tr>
<td>Student #3</td>
<td>1</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Student #4</td>
<td>2</td>
<td>3</td>
<td>23</td>
</tr>
<tr>
<td>Student #5</td>
<td>1</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>Student #6</td>
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<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Student #7</td>
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<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Student #8</td>
<td>2</td>
<td>2</td>
<td>17</td>
</tr>
<tr>
<td>Student #9</td>
<td>2</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Student #10</td>
<td>1</td>
<td>3</td>
<td>9</td>
</tr>
</tbody>
</table>
APPENDIX C

DESCRIPTIVE ANALYSIS OF THE NATURE OF THE ELECTIVES
An underlying research question I asked was what was the nature of the electives. Next, I explored the data by the descriptive analysis method to help answer that. I wanted to know if a student was forced into an elective, particularly an intervention, would that be a connection to the future attendance at a continuation high school. My theory was that since the student was forced to have a class where he or she was struggling, the student would not build a connection with school, possibly have resentment by taking away their choice of a “fun” class or by making them have two classes of the same subject, which may have led to a disconnect to school for some of these students. First, I categorized the electives into three sections: non-intervention of choice (a class the student requested), non-intervention (a class the counselor randomly assigned to the student), and intervention (a class the student was required to take).

The non-intervention elective of choice was defined as an elective that the student chose to take and had to go through a process to be accepted. Band and Choir both required the approval of the music teacher to be in those classes. ASB and AVID both required students to fill out an application and interview with the teacher. One student who took Band was not absent a single day the entire school year, earned one A, three Bs, and two Cs first semester, then earned two As, three Cs, and an F in Math. An A student in Band who missed 11 days total for the year earned one A, three Cs, and two Fs first semester and one A, one C, and four Fs second semester. An A+ student in Band who missed 10 days total
for the year earned one A, four Bs, and one C first semester and one A, three Bs, and two Cs second semester.

As I was exploring the elective data and describing the students in the descriptive exploratory, I noticed a few students had two electives over the school year. It was rare for students in middle school to change electives at the semester. When that happens, it was often because the student was removed from the non-intervention elective of choice. A Band student who was absent 16 days the first semester, failed Band, Language Arts, Math and Science, but passed Social Studies and Physical Education with a C. The student changed electives at the semester to Study Skills then earned two Bs, three Cs, and one F. These 4 students (7%) had Band as their elective. They also had an academic decline from first semester to second semester with no suspensions and a large variance of absenteeism.

Choir was another elective in the non-intervention class subset that required students to go through a process in order to get accepted. One student had an A+ in Choir, missed 8 days, and earned one A, four Cs, and one F for first semester. Second semester this student continued with the A+ in Choir but dropped one of the Cs to an F and doubled the days absent to 17. Another student with three As and three Bs missed only two days the first semester, dropped to four Bs, one C, and one F, and missed 7 days second semester. These two students (4%) who took Choir both had an academic decline from first semester to second semester.
Continuing in the same descriptive exploratory analysis format, I found one student (2%) who took ASB, Associated Student Body, which I categorized as a non-intervention of choice since students have to go through a process to be accepted. This straight A student who missed one day first semester maintained an A in ASB and Physical Education in the second semester but dropped to Bs in Language Arts and Math and to Cs in Social Studies and Science missing 14 days. This decline stood out for me and I explored this further later in this research.

AVID, Advancement via Individual Determination, was an elective in the same subset of non-intervention of choice since students must apply, interview, and qualify in order to participate. It was a program designed to help students get accepted to college and then to navigate the college system. The program also had two built in days of tutoring with extra adults for smaller groups, which was why it is surprising to discover that there were 4 students (7%) from this study who took AVID. One student earned two As, one B, and three Cs first semester, missed 3 days of school, and earned one A and five Cs second semester while missing 8 days of school. Another student had three Bs and three Cs first semester not missing a single day of school then earned two Bs and four Cs second semester missing one day. There was a student who failed AVID first semester along with all classes except an A in Physical Education and did not miss a single day of school. Second semester this student brought the AVID grade up to a C but the Physical Education grade dropped to a B while the
four academic classes remained Fs. This student was suspended twice for a one day each time and then was absent two additional days. A second student who failed AVID first semester also earned one A, three Cs, and one F missing 3 days of school. Second semester this student brought the AVID grade up to a C for a total of one A, one B, two Cs, and two Fs. The commonalities of this group were great attendance both semesters and a slight decline of grades second semester, which the decline had emerged through this research to later be analyzed as its own subset.

Continuing to explore the nature of the electives for one of the research questions, the non-intervention electives were those that students could have chosen or could have been given at random such as Art, STEM, Digital Media and Computer Applications. There were 11 out of the 55 students (20%) who had Art as an elective. An Art student who missed 10 days total for the year earned one A, two Cs, and three Fs first semester and only changed one grade second semester which was Physical Education that went from an A to a C. A similar student who missed 5 days total for the year earned one A, two Cs, and three Fs first semester and only changed two grades second semester which was Physical Education that went from an A to a B and Social Studies that went from an F to a C. Second semester the student was suspended twice for one day each time. An Art student who did not change much between semesters earned a B in Art, a C in Physical Education, and failed the four academic classes missing 10 days of school. Second semester the student earned a C in
both Art and Physical Education and still failed the other classes missing 6 days of school. The commonality of these students was that they all passed both semesters of Art although failing at least three other classes.

Another Art student missed 12 days total for the year, earned two As, two Bs, and two Cs first semester, but dropped several classes second semester to two As, three Cs, and one F. Another Art student earned two As, two Cs, and two Fs first semester missing 4 days of school, and then the student earned three Bs and three Fs second semester missing 13 days of school, 2 of those were from two separate suspensions. A student failed all four academic classes, passed Art with a C and Physical Education with an A and did not miss a day of first semester, then the only change was Physical Education grade dropped to a B, missed 4 days of school and was suspended for one of those days. Another student who failed academically started first semester missing 6 days of school, earning one A, two Cs, and three Fs, then second semester missed 8 days of school, earning one A in Physical Education and failing all five other classes. A student who earned one A, one B, one C, and three Fs and missed 1 day first semester had a change second semester to one A, one B, two Cs, and two Fs. The only absence was due to a suspension which was for three days. With the exception of this last student who improved, the other students had a decline academically from first semester to second semester.

A few of these Art students did not fail multiple classes as those in the subset above did. One student who earned an A+ in Art also earned As in Math
and Science and Bs in the rest. In the second semester though the Art grade dropped to a C and Language Arts dropped from a B to a C while all other grades were Bs. Another student had one A, three Bs, and two Cs first semester missing only 5 days of school, then the student had two As, one B, two Cs, and one F second semester missing 3 days. A third student had five Bs and one C first semester missing 6 days of school, then the student earned one A, three Bs, and two Cs second semester missing 11 days. These students were not failing multiple classes yet they each had a decline in their grades for the academic classes. Declining grades continues to emerge in a variety of subset electives.

It was not often that a middle school student changes elective at the semester. While still analyzing by exploratory descriptions of the Art subset students, this change of electives showed a particular student had failed Art and Language Arts, earned an A in Physical Education and passed everything else with a C, only missing one day for the first semester. For second semester, the student was moved into Computer Applications, which the student failed along with all four academic classes, and the Physical Education grade dropped to a B, only missing one day. For an unknown reason a student had Study Skills the first semester and Art second semester. The first semester the student earned an A in Physical Education and Cs in everything else. The second semester the student declined in Math and Science while everything else remained the same. These students had high attendance both semesters and a slight decline of grades from first semester to second.
Continuing to analysis the subset of non-intervention classes, one student out of 55 (2%) had STEM, Science Technology Engineer Math, as their elective which was considered a non-intervention. Although some students may have chosen this elective, they may have been randomly placed. This STEM student who missed 4 days earned one A, three Bs, and two Cs first semester then missed 7 days, 4 of those were for 1 suspension, then second semester earned one A, two Bs, two Cs, and one F. Two students of the 55 students (4%) had Digital Media as their elective which was also considered a non-intervention. A student missed 11 days and earned one B, one C, and four Fs first semester, and then this student missed 10 days and earned one A, one B, one C, and three Fs second semester. Another student missed zero days and earned one A, two Cs, and three Fs first semester, and then this student missed 5 days and earned one A, two Cs, and three Fs second semester. These three had nothing in common as a group.

While exploring in the descriptive analysis process, it was discovered that nine students (16%) out of the 55 students took Computer Applications, which is considered a non-intervention elective. This was another course that some students may have chosen; however, the rest were randomly placed there. The best academic student had three As, two Bs, and one C first semester missing 6 days of school then five As and one B second semester missing 8 days. A straight F student, including in Computer Applications, missed one day of school first semester and was able to increase the grades in Language Arts and Science
to Bs and Physical Education to a C, missing no days of school. Another student had Fs in all first semester except a B in Physical Education missing 4 days of school and increased that B to an A but maintained all Fs otherwise second semester missing 4 days of school again. A student who earned the exact same letter grades both semesters still had a change. The student earned one A, two Cs, and three Fs, and the difference was Language Arts was a C but changed to an F and Computer Applications was an F and changed to a C. There was a Computer Applications student who did not miss a single day of school the whole year. This student had two As, one B, two Cs, and one F in Language Arts first semester and one A, one B, three Cs, and one F in Social Studies second semester. The commonality between this group of students was the slight change of grades from one semester to the next. Everyone had a change but as one grade would increase another would decrease. Additionally, these students had good attendance. The most missed was one semester of 8 days.

Within the same subset it was discovered that some students who had Computer Applications had a decline from first semester to second, which again had become an emerging theme within yet another subset of electives. One such student who had a huge decline earned an A in Computer Applications and Cs in all other subjects first semester missing 13 days of school, 5 of those were from 1 suspension. Second semester this student failed all classes except a C in Physical Education only missing 1 day of school. Another decline was a student who had one B, two Cs, and three Fs first semester missing 2 days of school,
and second semester the student kept the B in Physical Education but failed all five classes while missing only 1 day of school. A student who earned a B in Computer Applications and Physical Education had one F in Math with Cs in all other classes missing 3 days. The decline second semester was failing Language Arts and Science along with a drop to a C in Computer Applications missing 4 days. There was one student who failed Art and Language Arts first semester, but then this student had a schedule change at the semester and was placed into Computer Applications. Second semester this student had a huge decline to failing all classes except a B in Physical Education. The academic decline was what these students had in common regardless of attendance or suspension.

In discovering the nature of electives for the research question, I had a third category of electives. The intervention electives were designed to help students who were below their grade level in a particular skill usually in Language Arts or Math. These classes were not optional for students in seventh grade regardless of their capabilities in Art, Leadership or STEM for example. I wanted to examine the students through their pre-existing data who were forced to take these classes and compare them to students who got to choose their electives. I anticipated this would be the subset group with the highest correlation rate in attending a continuation high school since these students did not have a choice of their elective. I made the assumption before doing the research that students who struggled in middle school Language Arts for example would resent taking a
second Language Arts type of class such as Literature Support and therefore fail both classes, rather than using it for its intended purposes as a support class.

The intervention classes were SI Reading, Learning, Study Skills, and Literature Support. SI Reading was a class designed to help students with comprehension while increasing reading capabilities. Three out of 55 (5%) students took this elective. One student stayed the exact same for both semesters even down to missing 5 days each semester. The grades were a B in Physical Education and SI Reading but failed all four academic classes. A different student earned one B, one C, and four Fs missing 15 days the first semester and improved to one B, three Cs, and two Fs missing 5 days the second semester. There was one student only who passed SI Reading with a B and Physical Education with a C first semester missing 8 days of school, then this student passed SI Reading with a C, failing all other classes, missing 15 days of school and being suspended twice for 3 of those days. All three of these students failed 4 classes for at least one semester. This failure rate was what I expected to see; however, as the emergent design of this research continued to grow, I did not find this high failure in all or even most of the intervention classes.

The next subset elective, Learning, was an intervention for students who struggled in Math and was required based on low state testing. There were 4 out of 55 (7%) students who took this class. An A+ student in Learning had two As, two Bs, and two Cs first semester missing 3 days of school, and second semester the student maintained the A+ earning three As, one B, and two Cs in
total missing only 2 days of school. One student had one A, two Bs, one C, and two Fs first semester missing 14 days of school. Second semester the student earned one A, four Cs, and one F in a different class than the Fs from first semester while only missing 1 day of school. Another student earned three Bs and three Cs first semester missing 5 days of which 3 were from a suspension, and the student earned two Bs and four Cs second semester missing 4 days. The fourth student passed Physical Education with a B and Learning with a C first semester while failing all four academic classes and missing 12 days of school. Second semester the student maintained the B and C, passed Language Arts with a C and missed 26 days of school. There were no commonalities from these students; nothing even 3 out of 4 can apply. A possible theme emerging from these descriptives was coming from the lack of commonalities such as in this subset. Looking at the nature of electives, perhaps a significant finding will be that there was nothing significant in looking for indicators of a seventh grader who will eventually attend a continuation high school.

Study Skills was a broad title for an intervention class that the counselors decide to put students into it based on student need. This class was a basic tutorial set up for Math and English but also taught the students AVID strategies to take notes and be organized. There were 9 out of 55 students (16%) who took Study Skills. One student earned one A, one B, three Cs, and one F first semester missing 4 days of school then dropped one of those Cs to an F in Math second semester missing 3 days. A student who passed all classes and took
Study Skills earned one A, two Bs, and three Cs first semester missing only 1
day of school. Second semester this student earned one A, one B, three Cs, and
one F in Math still only missing 1 day of school. A separate student earned two
As, one C, and three Fs first semester missing 1 day of school then earned one
A, one B, two Cs, and two Fs second semester missing 3 days of school.
Another student earned one B, three Cs, and two Fs, including Study Skills, first
semester and missed 2 days of school. Second semester the student earned
one B, two Cs, and three Fs missing 5 days. The only consistent F was in
Science. A student who also failed Study Skills earned one A, two Cs, and three
Fs missing 6 days first semester then earned one A, one B (in Study Skills), and
four Fs missing 2 days second semester. The commonalities for this group of
students were the low absences and the minimum of one F.

Some of students in this subset only took Study Skills for one semester
even though it was rare for a seventh grader to switch electives at the semester.
One student actually enrolled at the semester and passed Study Skills with a C
while failing all five other classes and missing 23 days of school. A student who
had Study Skills first semester earned an A in Physical Education and all Cs in
the remaining classes. This student’s schedule changed to have Art as the
elective, and the grades changed to one A, three Cs, and two Fs second
semester missing 7 days of school. A student who failed Band and three other
classes first semester was absent 16 days but passed Social Studies and
Physical Education with a C. The student changed electives at the semester to
Study Skills then earned two Bs, three Cs, and one F missing 11 days of school. A student who earned a C in Study Skills first semester missed 2 days of school and earned one A, two Cs, and three Fs then changed electives to Learning for second semester earning one A, three Cs, and two Fs missing 2 days of school. There was no significant commonality among these students except they took two different electives, which supported the emerging theme of nothing significant was found.

Literature Support was an intervention class designed to help struggling students in reading comprehension and literary devices. Students were placed into this class based on their state testing. There were 5 out of 55 (9%) students who took this class. One student earned one A, one B, one C, and three Fs first semester missing 5 days of school then earned one A, two Bs, and three Fs second semester missing 6 days of school. A student who failed this elective along with three other classes only passed Physical Education with an A and Social Studies with a C first semester missing 2 days of school. Second semester this student did not miss a single day of school and maintained all the same grades except for Literature Support which jumped up to a B. Another student earned one A, one B, two Cs, and two Fs first semester missing 10 days of school then earned two As, one B, one C, and two Fs second semester missing two days. A student who improved went from four Cs and two Fs first semester missing 4 days of school to earning one A, one B, two Cs, and two Fs second semester missing 5 days. The A, actually an A+, was in Literature
Support. Another student who improved earned two Bs and four Cs first semester missing 5 days, one of those for suspension, then the student earned five Bs and one C second semester missing 7 days of school. A commonality among these students was a passing grade in the elective Literature Support. Of the 5 students over two semesters, equaling 10 classes, only one student failed one class.

Earlier, I went through the grades for Physical Education and counted for those who earned an A, B, C or an F. Specifically, I looked at students who earned which letter grade for first semester, second semester and both semesters. I did the same thing for each elective by counting which letter grade was earned for first semester by how many students and which letter grade was earned for second semester by how many students. Then, I compared students who passed Physical Education and their elective but failed the academic classes to students who failed Physical Education, passed their elective but failed the academic classes and then compared to students who passed only Physical Education. This was done to explore the possible connection between Physical Education and the elective as one unit versus the four academic classes to further answer one of the research questions discovering the nature of the electives.

A side by side descriptive exploratory analysis of Physical Education and an elective reveals more insight to these students who eventually attend the continuation high school. I was curious if I could see a correlation of success in
Physical Education and the elective, which could imply an academic struggle that does not carry over into their Physical Education and elective classes. I also wondered when exploring the nature of the electives for the underlying research question, if there was a pattern of students who passed or failed the elective, the Physical Education, and the academic classes. I had no assumptions or expectations but wanted to explore any possible connections between classes.

First, I wanted to find students through the pre-existing data who passed Physical Education and their elective but failed the four academic classes: Language Arts, Math, Social Studies and Science. There were 4 students (7%) out of the overall 55 students who fit this subset. I continued to analyze the findings in the descriptive exploratory. First semester a student passed Physical Education with a B, passed Computer Applications with a C, passed Language Arts with a C and failed the other classes, and then second semester the student dropped the C to an F in Language Arts and the C to an F in Computer Applications. Both semesters a student taking SI Reading passed it with a B as well as a B in Physical Education and failed all four academic classes. A similar student failed all four academic classes both semesters, passed Art with a C both semesters, and passed Physical Education with an A first semester and a B second semester. An Art student failed all four academic classes both semesters, passed Physical Education with a C, and passed Art with a B first semester and a C second semester. Two commonalities among these four
students were the minimum grade of a B in Physical Education and the minimum grade of a C in their respective elective.

As I continued descriptive exploratory analysis of students who had one F through those who had 6 Fs, I wanted to explore in the same emergent manner the students who passed Physical Education and their elective but failed their academic classes. Five students (9%) passed Physical Education and their elective along with one other class, but failed three of the four academic classes. First semester a student failed the four academic classes, passed Physical Education with a B and passed Learning with a C. The only change for this student in second semester was Language Arts went to a C. An Art student passed the elective with a C, passed Physical Education with an A, passed Social Studies with a C, and failed all other classes first semester. The only change for this student in second semester was Physical Education went to a C. Another student passed Social Studies with a C, passed Physical Education with an A, passed Study Skills with an A, and failed all other classes first semester. The only change for this student in second semester was the F in Language Arts went to a C and the A in Study Skills went to a B. A student who took Digital Media passed that with a C, passed Physical Education with an A, passed Social Studies with a C, and failed the other classes first semester. There was no change for this student in second semester. A different student from the Literature Support class passed that with a C, passed Physical Education with an A, passed Social Studies with a B and failed all other classes, and the only
change for second semester was the C in Literature Support went up to a B. All but of these students had the commonality of As and Bs in Physical Education, and although they all passed a variety of electives in the various categories, the majority failed Language Arts as one of the academic classes.

Although many students failed three academic classes for both semesters while passing Physical Education and their elective, 5 students (9%) fit into this situation for one semester rather than both. First semester one student failed Math earned Cs in the other academic classes, and earned Bs in Physical Education and Computer Applications. Second semester the student maintained the B in Physical Education, maintained the Cs in Social Studies, dropped the B to a C in Computer Applications, and failed Language Arts, Math and Science. Another student failed two academic classes first semester, passed the other two with Cs, and passed Physical Education and Art with As. Then the student dropped Social Studies to an F and dropped both Physical Education and Art to Bs. There was one student who failed Computer Applications and two academic classes first semester, but then the student raised that to a C, maintained an A in Physical Education, and dropped Language Arts to an F. A particular student passed Physical Education with an A and Art with a C as well as Science with a C all first semester. Then second semester dropped Physical Education to a B, maintained the C in Art, passed Social Studies but failed Science. An Art student passed the elective with an A, passed Physical Education with a B, passed Language Arts with a C, and failed the other three academic classes for first
semester. Second semester the student passed the elective with a B, passed Physical Education with an A, passed Language Arts and Science with a C, and failed the other two academic classes. As in the paragraph above, most of these students had the commonality of As and Bs in Physical Education, and although they all passed a variety of electives, the majority failed Language Arts as one of the academic classes.

There were 4 students (7%) who passed Physical Education and their elective while failing all other classes for one semester. One student failed Math and Science first semester but failed all four academic classes second semester, passed Physical Education with a C and Band with an A both semesters. A student failed all classes except Physical Education which was an A first semester, and the student got the AVID grade to a C but Physical Education dropped to a B and all four academic classes remained an F. A different student passed Physical Education with a C, passed SI Reading with a B, and failed all four academic classes for the first semester. This student only passed SI Reading with a C second semester failing all other classes, including Physical Education. First semester a student passed Physical Education with an A, passed Math and Social Studies with a C, and failed everything else. Second semester this student failed the four academic classes, passed Physical Education with an A and passed Study Skills with a B.
In attempts to compare the pre-existing data of Physical Education and elective grades, I made a table (see Table C1) to give a visual of how many students earned which grade in each of the two classes for each semester.
Table C1

*Comparison of Physical Education and Elective Grades*

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<th>Grade</th>
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<th>Second sem. P.E. only</th>
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<th>Second sem. elective</th>
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</thead>
<tbody>
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<td>4</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>A</td>
<td>17</td>
<td>11</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>A-</td>
<td>4</td>
<td>10</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>B+</td>
<td>4</td>
<td>5</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>B</td>
<td>6</td>
<td>8</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>B-</td>
<td>6</td>
<td>6</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>C+</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>C</td>
<td>4</td>
<td>3</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>C-</td>
<td>3</td>
<td>3</td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td>F</td>
<td>2</td>
<td>2</td>
<td>11</td>
<td>6</td>
</tr>
</tbody>
</table>

Figure C1 and Figure C2 were another attempt to make connections between passing or failing Physical Education and the elective. I wanted to know how many students passed Physical Education, how many students passed the elective, and how many students passed both. Although I described these scenarios in descriptive exploratory manner already, I still wanted to explore the possibility of a connection through a visual. Figure C1 was the comparison for first semester, and Figure C2 was the comparison for second semester.
Figure C1. Comparison of physical education to elective to both first semester.

Figure C2. Comparison of physical education to elective to both second semester.
APPENDIX D

STRATEGIC PLAN
When K-12 educators think of transcript reviews, most educators think of the high school level; however, my research has demonstrated the importance of reading transcripts at the middle school level. The most significant finding of research is that there is not one definitive reason or indicator that a student will drop out of school but rather a comprehensive list of several reasons or indicators in combination (Neild, R.C. & Balfanz, R. 2006; Rumberger, 2001). Therefore, it is important for educational leaders to look for those multiple indicators. K-12 Intentional Transcript Reading, KIT Reading, will help secondary school leaders for years to come by helping them identify important indicators.

After completing my dissertation, I wanted to apply what I learned to my role as a school site administrator. First, I asked my guidance tech to print off all of the transcripts of our current eighth graders. Then, using Excel spreadsheet, I had her input each student’s grades for both semesters per subject and list the elective (see Table D1) for the last academic year when the students were in seventh grade. Students were identified by number instead of name, both to maintain privacy and avoid bias. On the physical transcripts, the guidance tech wrote the corresponding number on each paper in order for me to go back and identify those students I would need to have a conversation with later. Across the top of the Excel spreadsheet, I listed the subjects in the same order every time: Language Arts, Math, Social Studies, Science, Physical Education, and the elective. This was done for both semesters.
My original research method was exploratory by nature of a descriptive research design. I was looking to describe each individual student. I looked at one continuation high school and every student who attended in a single school year (101 students), and then printed the transcripts for those who were in that district while they were in seventh grade (55 students). The identifiable indicators of seventh grade students (55) who attended the continuation high school were a decline in grades (33 out of 55 students 60%), at least one F (44 out of 55 students 80%), at least two Fs, three Fs, four Fs, five Fs, six Fs, and a specific look at students who failed their elective (17 out of 55 students 31%). In my research no student failed only their elective. If they failed their elective, it was always in combination with an academic class. Additionally, I categorized the electives into three groups: non-intervention of choice (classes students had to make an effort to get into such as ASB), non-intervention (classes students

Table D1

Example of the Excel Spreadsheet

<table>
<thead>
<tr>
<th>Student #</th>
<th>Math</th>
<th>Social Study</th>
<th>Type of Elective</th>
<th>Math</th>
<th>Social Study</th>
<th>Type of Elective</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A</td>
<td>B</td>
<td>ASB</td>
<td>B</td>
<td>C</td>
<td>ASB</td>
</tr>
<tr>
<td>2</td>
<td>F</td>
<td>D</td>
<td>Math 180</td>
<td>F</td>
<td>D</td>
<td>Math 180</td>
</tr>
<tr>
<td>4</td>
<td>D</td>
<td>F</td>
<td>ART</td>
<td>F</td>
<td>F</td>
<td>ART</td>
</tr>
</tbody>
</table>


were randomly placed into), and intervention (classes students were put into for remedial help based on low SBAC scores).

Next, using the indicators that I found in my research, I looked for those indicators with my current eighth-grade students when they were seventh graders. First, I printed the Excel spreadsheet of my current eighth graders that my guidance tech made for me. On a separate sheet of paper, I wrote down the student number and kept a tally of students who had no Fs, who had a minimum of one F over the whole seventh grade, two Fs, three Fs, four Fs, five Fs, and six Fs. Starting over, I went through the list again keeping track of students who declined in grades. For example, if a student dropped in a letter grade from first semester to second semester, that counted as a decline. However, if a student dropped in one subject by one letter grade but increased in another subject by one letter grade, that “evened out” and I did not count it, although this rarely happened. Whether a student dropped in one or more subjects or if a student dropped in one or more letter grades (meaning a B to a D), I still only counted it as one tally mark and wrote that student number in this section of my handwritten notes. This will allow me to go back through to discuss the decline with the student individually. There are two purposes of this portion of the K.I.T: the first is to identify the individual student who needs to have a conversation with admin or counselors as a form of intervention, and second is to know the data for the overall school as a whole.
To double check myself, I then went back through the Excel spreadsheet and color coded the students who had no Fs, one F, two Fs, three Fs, four Fs, five Fs, and six Fs by selecting that row and highlighting it. I checked the student number to those I had on my handwritten sheet. Next, I went back through again and double checked those marked as a “decline in grades.” Since I had already highlighted the spreadsheet based on Fs, I needed to mark the decline students differently; therefore, I bolded that row. This process also made sure every student was accounted for. Again, I checked the student number to my list on my handwritten sheet. I should note that I felt more comfortable with my notebook rather than an electronic count; however, you should do what you are comfortable doing as long as you are keeping track outside of your Excel spreadsheet in order to double check and recount if necessary. If you are proficient in Excel and can do some of these counts within the program, I recommend that you still do at least one hand count separately just to make sure you are getting accurate results.

Next, using my notepad I listed each of the Electives and made tally marks on my handwritten notepad of students who failed their Elective and which Elective that was. Additionally, if they failed their Elective, I made a list of any other class they failed as well. Once I was done counting and listing all this, I went through my notes and counted how many times each academic class was failed in conjunction with failing the Elective. Then I went back through and
counted how many students failed the Elective based on the three categories: non-intervention of choice, non-intervention, and intervention.

Then, I copied my Excel spreadsheet and made a second sheet within the file and sorted by type of Elective for first semester. I used a different highlight color for all the students who were in each elective to better separate them. I counted how many students failed each elective and doubled checked what I had counted on paper. After I highlighted that student, I would also double check my list of any other academic classes that were failed. Once I had the list of failed electives, I put the count into one of the three categories of electives, and I added those up too. Next, I went through the same process for second semester.

Once I had counted the tally marks both by hand and in Excel, then I opened a third sheet within Excel and began making summary charts/tables. The first table was the straight count of how many Fs the students earned 0, 1, 2, 3, 4, 5 and 6. The next table was a list of all the electives and the number of students who failed each, and then I did one that included first and second semester side by side. I then created a table of how many students failed their Elective and which academic class. For example, I made a list of the four possible combinations: Elective and Language Arts, Elective and Math, Elective and Social Studies, Elective and Science. The last table was categorizing the three groups of electives and the number of students who failed each. As a reminder the three groups of electives are non-intervention of choice (those classes that the students had to make an effort to get into), non-intervention
Once I had the overall data for the school, I presented it to the staff as an FYI to understand our data and where our students are failing. As an administrator, I next looked at the classes with the highest failed rate and had a conversation with the teachers about that. In our team (PLC) we discussed how we felt about this high failure rate, the possible reasons for it, and what we can do about it. Before we could brainstorm productive ideas, I felt it was important for the staff to process the information and to share any emotional responses they may have had. My next step was to have individual conversations with the elective teachers, particularly the non-intervention category. Each school site will have a different need in this regard. My elective teachers would have been too defensive if I had a PLC meeting as I did with the Language Arts teachers. Each administrator needs to know the staff well enough to know how to proceed, as long as those conversations happen.

Next, I presented the overall school data to the students. I already do a monthly assembly where I present on different topics to the whole student body, so I did this in January to start the second semester, in hopes of motivating them to avoid the decline of grades. I began this presentation with a short description of high school credits versus class grades, and I explained that if a student failed a high school class, they had to retake it because the diploma requires those
credits. If a student gets too far behind in credits, they get kicked out of the comprehensive high school and moved to a continuation high school. Then I explained that through research, we know the indicators that middle school students will end up at a continuation high school are declining in grades and/or failing their elective, particularly if it was a non-intervention. I showed them the charts I made in Excel of how many students had zero Fs, one F, two Fs, three Fs, four Fs, five Fs, and six Fs. I explained what I was looking for when I looked for a decline in grades and then showed them the number of students who fit that criteria. The next table was the list of Electives and how many students failed each, as well as showing them how many failed in each category. Then I showed them the table of how many students failed their Elective and Language Arts, failed their Elective and Math, failed their Elective and Social Studies, and failed their Elective and Science. Since I took this data from the current 8th graders of when they were seventh graders, I made the presentation personal by repeatedly saying “you” failed such and such and “your” decline. I summed up the indicators and the comparison to their data. I explained how important sixth grade is to get ready for seventh grade and how seventh grade gets ready for eighth grade, then how eighth grade is important to get ready for ninth grade.

The follow up after the assembly was the one-on-one conversations with the students. I did many and my counselors helped. I think the key to intervening is three steps. First, present the information. The students need to know that high school failure often begins in middle school. Second, have
honest, individual conversations with a “reality check” of the path the student is on and what in his/her life might be contributing to it. Open the lines of communication and continue checking on them as the year goes. Third, offer support and interventions, perhaps by putting the students in tutoring or offering a Study Skills Elective.

The K-12 Intentional Transcript Reading, KIT Reading, is designed to find those middle school students who may need more support and interventions because they may be on track to fail high school and pushed to a continuation high school. It is also to educate middle school students about the importance of middle school and its connection to high school success or failure. The guidance tech can create an Excel spreadsheet for the counselor or administrator to go through the data. Count how many students earned zero Fs, one F, two Fs, three Fs, four Fs, five Fs, and six Fs. Count how many students failed their Elective, take note of what that Elective is, and take note of any other failed classes that occurred in the same semester the student failed the Elective. Present the schools’ overall data to both the staff and the students. Then start having individual conversations with the students about their path and with teachers about their instructional practices and their support systems of students.
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