

**The Impact of AVID Participation on Academic and Non-Academic Measures of
College Readiness**

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Abstract

The purpose of this study was to analyze the relationships between enrollment in AVID and the academic and non-academic facets of college readiness as measures of the success of Advancement Via Individual Determination (AVID). The data were analyzed to determine 1) the academic impact of AVID enrollment on college readiness; 2) AVID participants' perceptions of the impact of Program Components and Program Benefits; and 3) the extent to which a relationship existed between the perceived impact of AVID Program Components and measurable Program Benefits and a) the number of years students were enrolled in AVID and b) high school grade level.

The results of hypothesis testing revealed a statistically significant difference in academic achievement as measured by the KCA math test between participants and non-participants. Further, analyses revealed marginally statistically significant differences in academic achievement as measured by the PLAN and GPA between participants and non-participants. Statistically significant differences were not found in academic achievement as measured by the ACT and KCA reading test between participants and non-participants. Results also indicated statistically significant relationships existed between students' perceived impact of the non-academic facets of college readiness related to Program Components and their degree of improvement in Program Benefits. Finally, results indicated a statistically significant relationship between an AVID student's grade level in high school and the student's overall perception of the helpfulness of the Program Components, as well as a relationship between grade level and the perceived degree of improvement in the areas of Program Benefits. As schools and districts across the United States continue to strive to meet the demands of NCLB

mandates, provide teaching and learning environments that prepare graduates for postsecondary success, and search for just the right CSRP that fits varied school and district demographic profiles, it will be critical to continue this research to determine the impact of AVID enrollment on college and career readiness.

Dedication

This labor of love is dedicated to my children who, it is my hope, see my commitment to a personal goal through the lenses of life-long learners, never shy away from attaining their goals, and remember me as a role model for what becoming middle-aged can look and feel like. It is also dedicated to my wonderful husband who has always supported my educational pursuits no matter what. Finally, I am eternally dedicated to my beloved mother who sadly did not live to see a vision born through her so many years ago; and to my father who lived long enough to have a doctor in the family, just not the kind that can give him medical care and advice.

I love and cherish each of you.

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opportunity to work on projects in program evaluation, an arm within our profession I knew very little about but fell in love with while learning how important it is to sustainable change and continuous improvement. The District X Assistant Superintendent also offered this piece of advice that helped me refocus on a new research topic when, after a year of work, my first topic fell through due to circumstances completely outside of my control: “find a topic that is an inch wide, in which you can go a mile deep.” This topic did just that, taking me to completely unexpected and wonderful places from which I learned so much. A special thank you also goes to the District X Director of Assessment and Research, who secured the necessary student information I needed for running the statistical analyses on academic achievement. The District X Director of Assessment and Research also provided and helped me understand post-graduate data from several universities that was so important to building my case that District X indeed does have students who are in the academic middle. And finally, to the District X statistician who has become a dear friend and highly esteemed colleague. With the District X statistician I discovered a love of organizing and presenting data so principals and teachers could use it as easily as possible, then put it to use as quickly as possible to inform instructional decisions and increase the academic success of their students. With his encouragement, I began writing and submitting articles for a statewide organization’s quarterly publication and, in him, found a friend who likes to postulate, debate, and discuss professionally related subjects as much as I. Thanks friend, I look forward to our future conversations and work together.

I also want to send a special thanks to my book club friends who supported me, not just through the dissertation process, but also through the coursework years. I have

lost track of how many books were read and discussed that I didn't read. But, it never mattered, I was always welcomed to join our monthly get-togethers for a little food, a nice beverage, and great conversation. Thank you for the outlet and for allowing me to enjoy the stories vicariously through your discussions. I am looking forward to being able to join in the book talks again.

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Straight from the heart!

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Chapter One

Introduction

Since the 2001 re-authorization of The Elementary and Secondary Education Act (ESEA), commonly known as No Child Left Behind (NCLB), schools have been challenged to simultaneously raise the achievement bar and ensure that all children meet these higher standards (Stiggins, 2004). The most well-known impact of the 2001 re-authorization was the adequate yearly progress (AYP) requirement that states “(1) set standards for grade-level achievement, and (2) develop a system to measure the progress of all students and subgroups of students in meeting those state-determined grade-level standards” (United States Department of Education, 2004a, sec. 1114).

District X, like many districts across the United States, responded to the mandates of NCLB by developing a strategic plan. District X’s Strategic Plan had two goals which guided the work of the district since 2005: to “improve the academic performance of each student” and to “encourage the personal growth of each student” (District X, 2010, pp. 8-9). A set of strategic focus areas and performance targets were used as accountability measures for achieving the District X Strategic Plan’s goals. As an element of the District X Strategic Plan, district leaders reallocated resources in 2005 to pilot the school reform program Advancement Via Individual Determination (AVID) at one high school; the program was implemented at all existing District X high schools in the fall of 2006. The implementation of AVID in a district similar to District X was intended to meet the needs of students who had potential for college success but had not received the necessary academic and personal support through regular district high school programs (Lake, 2009).

AVID is a college readiness system designed to increase the number of students who enroll in four-year colleges. According to the program's description, AVID focuses on the least served students in the academic middle, who don't have learning difficulty, but do not have confidence to take more rigorous courses. The gist of AVID is to raise expectations and provide scaffolding so that students will become confident and competent for college study. (District X statistician, personal communication, January 20, 2012)

This chapter provides the background of the study and describes the context of the setting for the study. The background section includes information about District X demographics and a brief discussion of the district's Strategic Plan. Next, the problem and the purpose of the study, its significance, delimitations, assumptions, research questions, a list of definition of terms, and an overview of methods are presented. Chapter one closes with an overview of the organization of the study.

Background

The mandates of the 2001 re-authorization of NCLB impacted school districts across the United States. School districts were affected by the requirement of NCLB that all states administer a yearly test measuring AYP. The effects of the 2001 reauthorization of NCLB went beyond the AYP requirements to include mandates on meeting the academic needs of all students through leveled interventions and schoolwide reform programs, ensuring that students were graduating with college and career readiness skills. NCLB forced educational leaders to re-evaluate curriculum and programming as it related to college and career readiness for all students.

NCLB. The annual report produced by The Center on Education Policy (CEP) identified other major impacts of NCLB on public schools across the United States. One effect identified by CEP (2006) was the increased use of research-supported decisions regarding improvement strategies. Another effect was that schools and districts started to pay more attention to the operational curriculum and the strategies teachers were using to teach (Usher, 2011).

As districts considered developing or adopting programs to meet the needs of all learners, certain critical considerations guided decisions. These considerations included the systematic implementation of any adopted program used as an intervention, not leaving enactment of the intervention to the discretion of teachers, and ensuring that interventions occurred in a timely manner (DuFour, DuFour, Eaker, & Karhenek, 2004). The concept of systematically implementing intervention programs schoolwide became known as comprehensive school reform (CSR) (United States Department of Education, 2007, para 1). Conley (2007) focused the discussion of CSR on U.S. high schools. He called for school districts across the United States to adopt programs and practices that would employ comprehensive high-school reform programs that carried out the recommendations by DuFour et al. (2004) for increasing the number of college ready graduates.

Response to intervention. NCLB compelled schools across the country to adopt tiered models of support to meet the needs of general education students, and District X was no exception. The practice of differentiating interventions based on a student's response became known as response to intervention (RtI). Districts or schools practicing RtI redesigned the teaching and learning culture of the general education classroom into

environments “that were effective, efficient, relevant, and durable for all students, families, and educators” (Illinois State Board of Education, 2008, p. 8). Figure 1 illustrates the RtI model for Kansas public schools, the Kansas Multi-Tiered System of Support (MTSS), developed by the Kansas State Department of Education (KSDE) and defines support for students at each tier.

Figure 1. Kansas MTSS Model

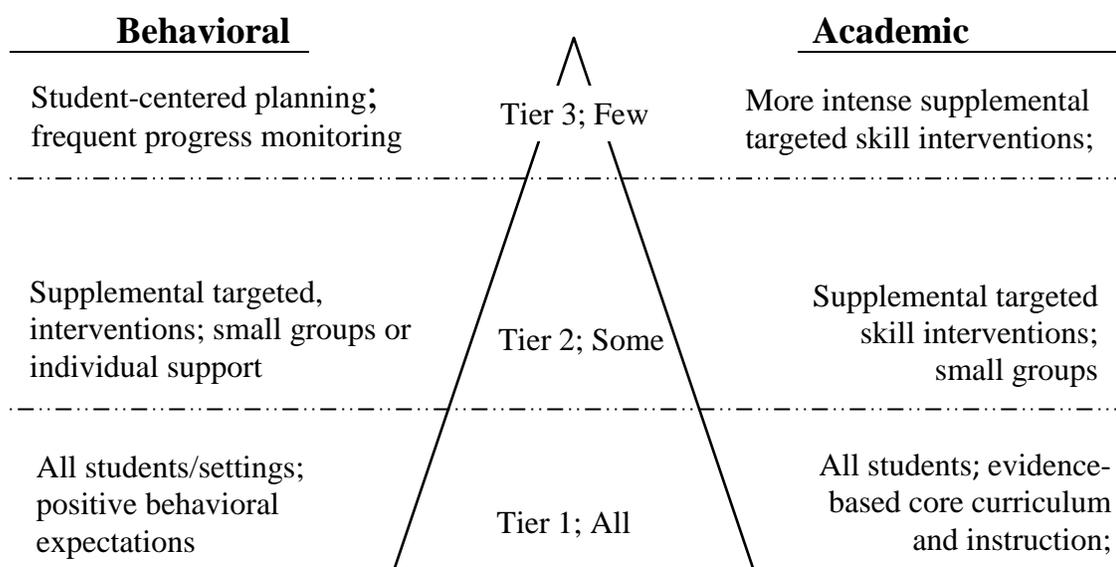


Figure 1 illustrates the RtI model for Kansas public schools, the Kansas Multi-Tiered System of Support (MTSS), and defines support for students at each tier. Adapted from “Multi-tiered System of Support (MTSS),” by KSDE, 2008, p. 11.

KSDE’s MTSS model addresses the academic and behavioral needs of students. The model shows how a school district and state system should have responded by intentionally designing services and resources to provide the help each student needed to be successful (KSDE, 2008). AVID would have been considered a Tier 2 intervention because the core of the program occurred during the AVID elective class.

Impact on college readiness. Increased demands to hold schools and districts accountable for students' academic success and the availability of reform strategies targeting postsecondary readiness made it even more important that public schools graduated higher numbers of students identified as college ready (Buffum, Mattos, & Weber, 2009). The federal statute, Elementary & Secondary Education: Part A - Improving Basic Programs Operated by Local Educational Agencies of NCLB, required school districts to include strategies in the reform of schoolwide programs that "address the needs of all children in the school, but particularly the needs of...those who are members of the target population of any program that is included in the schoolwide program" (United States Department of Education, 2005, Subpart 1 Sec. 1114b1BiiiIbb). The statute identified the type of strategies to be included in any schoolwide reform program. These strategies were "counseling, pupil services, and mentoring services; and college and career awareness and preparation, such as college and career guidance, personal finance education, and innovative teaching methods, which may include applied learning and team-teaching strategies" (United States Department of Education, 2005, Sec. 1114). Under the CSR statute of the NCLB law, outlined in Part F of Title 1, schools and districts were in compliance if the identified programs and practices served as a pathway to improved student academic achievement (United States Department of Education, 2007). The statute identified 11 original components of CSR, including research-based methods, comprehensive design, focus on student achievement, evidence of effectiveness, and partnership with parents and communities. The requirement that teaching and learning strategies be research-based was added later (United States Department of Education, 2007). School districts, responding to the increased demands

of NCLB, began implementing programs to meet the CSR requirements. Researchers, stating that the U.S. was falling behind in graduating students with the proficiency necessary to achieve postsecondary success, contributed to the increased efforts of schools and districts to be in compliance with CSR requirements (Joyce & Calhoun, 2012).

The year before the 2001 re-authorization of NCLB, Darling-Hammond (2000) showed that successful reform efforts “emphasize...the use of standards for teaching and learning...better designed schools, more equitable and effective resource allocations, and more...supports for student learning” (p. 6). A specific action for successful reform included broadening the concept of accountability to include “produc[ing] better quality education and higher levels of learning for a greater share of students” (Darling-Hammond, 2000, p. 6). Districts should also have had in place “a useful set of processes...for interpreting and acting on [data] in educationally productive way[s] ...which provide relevant, valid, timely, and useful information about how individual students are doing and how schools are serving them” (Darling-Hammond, 2000, p. 6).

Conley’s (2007) emphasis on college readiness connected the discussion of comprehensive reform and intervention programs to a high school’s responsibility for a student’s postsecondary education experience. He concluded that no system existed or was being developed to integrate his research on college readiness or shape high school preparation programs so that they did a better and more intentional job of developing student capabilities in the areas of college readiness. Conley was joined by other researchers and authors in acknowledging the challenges K-12 schools and districts faced in preparing all students for a successful postsecondary experience. DuFour likened the

trajectory of America's future to the conditions preceding a perfect storm (as cited in Buffum et al., 2009). The metaphorical storm to which DuFour referred was a near future in which the United States would no longer be a viable member of the increasingly global economy. DuFour noted that a contributing factor to the path the United States had taken was the failure of high schools to graduate consistently high numbers of students with adequate literacy and numeracy skills for postsecondary success whether the student attended college or entered a career. DuFour challenged the United States to "change our thinking about the status of public education" (as cited in Buffum et al., 2009, p. xix).

District X. District X is a PreK-12 suburban district, encompassing 91 square miles in Kansas. The ethnic composition of District X was 84.50% White, 2.00% Hispanic, 3.20% African American, and 7.40% other ethnicities in 2011-2012 (KSDE, 2012a). Table 1 compares five years of District X total enrollment and ethnic breakdown to Kansas total enrollment and ethnic breakdown.

Table 1

District X and Kansas Total Enrollments and Ethnicity as a Percentage

Enrollment	2007-08	2008-09	2009-10	2010-11	2011-12
Kansas	466,741	468,195	473,772	477,193	512,201
African American (%)	7.90	7.90	7.50	7.44	7.29
Hispanic (%)	11.90	13.10	15.80	16.30	17.14
White (%)	73.20	70.10	68.90	68.12	67.40
Other (%)	7.10	8.60	7.80	8.14	8.17
District X	20,718	20,776	21,157	21,435	21,864
African American (%)	3.30	3.20	2.90	3.10	3.20
Hispanic (%)	2.00	2.10	4.00	4.10	2.00
White (%)	83.90	83.10	81.40	80.30	84.50
Other (%)	10.80	11.60	11.60	12.40	7.40

Note. Adapted from “State of Kansas Report Card 2011-2012,” by KSDE, 2012a, p. 1.

District X received significantly less state aid than the average state aid per pupil for all Kansas districts. Even so, the financial status of District X has remained adequate to give students a quality education (KSDE, 2012b). The estimated 2011-2012 operating budget, including local option budget, was \$156,409,453.00 (District X, 2011). Most of the money the district spent per pupil was generated through local option budget (LOB) revenues (KSDE, 2011). LOB allows residents of District X local taxing authority up to 31% of its State Financial Aid amount, which was earmarked to supplement the district budget (District X, 2013). Table 2 presents a comparison of the average state aid to all Kansas districts with District X state aid and lists the additional revenue raised at the local level.

Table 2

State Aid per Pupil Plus District X Local Revenue

Expenditures	2007-08	2008-09	2009-10	2010-11	2011-12
State Aid Average	\$4,716	\$4,937	\$4,256	\$4,270	\$4,341
District X State Aid	\$2,816	\$2,859	\$2,523	\$2,988	\$3,148
District X Local Revenue	\$4,146	\$4,251	\$4,453	\$4,501	\$4,352

Note. Adapted from “Total Expenditures by District,” by KSDE, 2012b, p. 1.

The school district employed 1,812 licensed teachers in 2011-2012. Seventy-five percent of the teaching staff held a master’s degree or higher. In addition, the district employed 100 administrators and had 1,350 support staff members (District X, 2012). Academically, District X performed at a very high level. According to the District X website, in 2012 there was an average daily attendance of 96.7%, a dropout rate of 0.3% for grades 7-12, and a graduation rate of 95.9% (District X, 2012). The graduation and dropout rates for District X were calculated differently, thus could not be compared to each other. The Director of Assessment and Research explained how these calculations were made:

The graduation rate is based on a ninth grade number cohort. Students moving into the district during high school are added to the starting ninth grade number; students...moving out of [District X] or dropping out of school are subtracted from the base number. The final number of graduates is divided by the final cohort number. The dropout rate...includes seventh and eighth grade as well as high schools and is the ratio of students who drop out in a given year divided by the total [grades seven through twelve] population. (District X Director of Assessment and Research, personal communication, February 6, 2012)

Other measures of the district's success included having the top 2011 ACT average score among school districts in the greater Kansas City area. Table 3 shows that the composite District X score of 24.8 was the district's second highest of all time and higher than the Kansas and national average for all school years shown (District X, 2012).

Table 3

National, Kansas, and District X Average ACT Composite Scores

Location	2007-08	2008-09	2009-10	2010-11	2011-12
National	21.20	21.10	21.10	21.00	21.10
Kansas	21.90	22.00	21.90	22.00	22.00
District X	24.16	24.27	24.54	24.79	24.80

Note. Adapted from "ACT Profile Report - State: Section I Executive Summary," by ACT, Inc., 2011a, p. 7.

Historically, students in District X also scored higher than their peers on state and national standardized tests. Since the enactment of NCLB, every school in District X made AYP, as measured by the KCA for reading and math (see Table 4). In addition to these measures, District X as a district, and each school independently, achieved AYP for nine straight years beginning in 2007 and continued to be the only district in the United States with an enrollment greater than 20,000 to achieve AYP, through the last year of the Kansas AYP tests (District X, 2012).

In 2004, District X commissioned Phi Delta Kappa to audit the district's curriculum and instruction. Responding to audit findings, the superintendent introduced the first District X Strategic Plan during the 2005-2006 school year (District X Executive Director School Administration, personal communication, January 16, 2012). This five-

year plan established the district’s mission, vision, and goals, and articulated educational belief statements and commitments to District X families and students.

Table 4

Percent of Students Meeting or Surpassing Standards on State Assessments

Assessment	2007-08	2008-09	2009-10	2010-11
Reading				
Kansas	84.3	85.8	83.3	87.6
District X	94.9	95.6	97.2	97.2
Math				
Kansas	84.3	83.5	83.6	84.7
District X	93.5	95.0	96.4	96.2

Note. Adapted from “State of Kansas Report Card 2011-2012,” by KSDE, 2012a, p. 1.

Guided by the District X Strategic Plan, district leadership intended to change the culture of the district to a school system rather than the then current structure as a collection of site-based managed schools (District X, 2010). The 2010-2015 District X Strategic Plan built upon the lessons learned during the implementation of the first plan while remaining true to the stated mission. District X’s mission is unprecedented academic success and unparalleled personal growth for every student. District X’s (2010) vision is that “together, we will enable each child to become more than he or she ever hoped to be” (para. 1). District goals were to (1) improve the academic performance of each student and (2) encourage the personal growth of each student (District X, 2010). The district used the District X Strategic Plan to introduce personalized student learning as the district’s hedgehog concept (Collins, 2001). The hedgehog concept is taken from *Good to Great* (Collins, 2001) and is cited extensively by the district. Beginning in 2005,

all district staff were expected to create teaching and learning environments meeting the needs of all students, irrespective of individual learning needs (see Appendix A for the District X Strategic Plan focus areas and performance targets).

The District X Board of Education enacted Board Policy 4311 in 2007 to support the accountability of district staffs' adherence to the District X Strategic Plan (District X Executive Director School Administration, personal communication, January 16, 2012).

This policy stated that

consistent with the District's Strategic Plan, the District shall require efforts to individualize instruction to meet the needs of each learner. The Strategic Plan refers to this process as Personalized Student Learning. The District defines Personalized Student Learning as an instructional approach in which a teacher considers the diverse learning needs of students and plans instruction and curriculum to meet those needs. Teachers should work within professional learning communities (PLCs), collaboratively utilizing strategies best suited to meet individual learning outcomes. The District is dedicated to meeting the needs of all learners. (District X, 2010, p. 13)

Members of a district leadership team began evaluating existing programs and adopting new strategies that would support District X's commitment to extraordinary achievement through personalized learning, both in academic success and personal growth for all students. Key actions included developing a district-wide RTI plan, creating curriculum maps to guarantee a viable curriculum, and establishing a team of school improvement specialists to support district professional development. These actions simultaneously addressed the findings of the 2004 audit while ensuring

compliance with Title 1 Part A of NCLB (District X Executive Director School Administration, personal communication, January 16, 2012).

As a component of the district's RtI plan, district leaders reallocated resources to meet the needs of students who had potential for college success but had not received the necessary academic and personal support through regular high school programs. Lake (2009) explained the process of reallocating resources to support AVID:

During the 2005-2006 school year...[district leaders] researched the comprehensive intervention program Advancement Via Individual Determination (AVID) as the way for high schools to provide support for the students who [were] in the academic middle. The definition of an academic middle student is a student who has average-to-high test scores, has a grade point average (GPA) [of] 2.0-3.5, has college potential with support, shows academic potential, and has [the] desire and determination to be academically successful. By implementing a program to provide support for students in the academic middle, the district [would be] able to increase the number of students...prepared to attend college or [other] postsecondary [educational or training] program. (pp. 5-6)

Based on the administrative team's findings, subsequent support from existing high school principals, and the district's compliance with Title 1 Part A of NCLB, district leaders determined that AVID would serve as a program to provide additional support for the average student. The AVID program would offer an opportunity for these students to acquire and develop the postsecondary college and career readiness skills they would need to remain academically successful through the freshman year in college (Lake, 2009).

Conley (2007) identified four facets of readiness necessary for students to be successful in postsecondary endeavors: *Key Cognitive Strategies*, *Key Concepts*, *Academic Behaviors*, and *Contextual Skills & Awareness*. The specific non-academic skills developed through participation in AVID were described by Conley (2007) in three of his college readiness facets: *Key Cognitive Strategies*, *Academic Behaviors*, and *Contextual Skills & Awareness* (see Appendix B for the definition and manifestation of each facet). The Academic Behaviors “facet of college readiness encompasses a range of behaviors that reflect greater student self-awareness, self-monitoring, and self-control of a series of processes and behaviors necessary for academic success” (Conley, 2007, p. 12). Figure 2 illustrates where such academic behaviors lie within the greater context of postsecondary readiness. This represented the impact each facet had on another. A positive impact resulted from the presence and strength of any one facet; when one facet was missing or weak, all others were negatively affected.

Figure 2. Conley’s Venn Diagram of College Readiness Facets

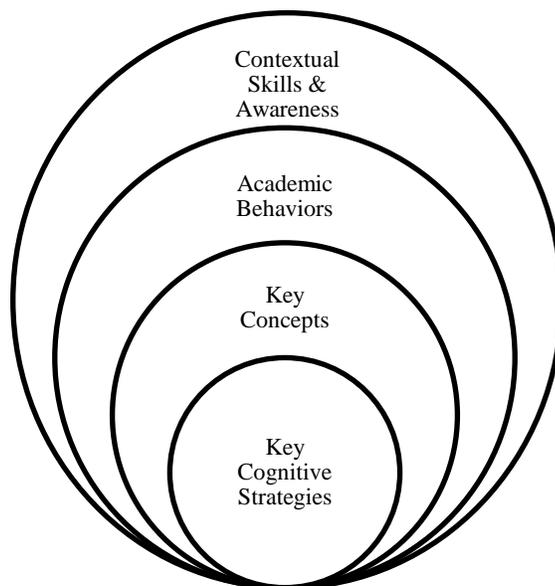


Figure 2. Venn diagram illustrating inter-related nature of college readiness facets. Adapted from “Toward a More Comprehensive Conception of College Readiness,” by D. Conley, 2007, p. 12. Copyright 2007 by the Educational Policy Improvement Center.

The publishers of AVID called these sets of skills non-academic measures of success (AVID, 2013). Participation in AVID developed students’ non-academic college readiness skills, which in turn supported measurable academic success. The AVID college readiness skill sets were divided into two categories: Program Components and Program Benefits. Non-academic college readiness skills developed through the AVID Program Components included specific strategies such as Cornell Notes, Socratic Seminars, tutorials, tutors, college visits, ACT/SAT prep, staying with the same peer cohort, and staying with the same teacher while enrolled in AVID. The skills developed through the AVID Program Benefits category included note-taking strategies, test-taking strategies, presentation skills, organization skills, writing skills, study skills, self-confidence, self-expectation, self-advocacy, and engagement in classes and school.

Data obtained from the District X Director of Assessment and Research supported the district leader's assumption that a subgroup of high school students would benefit from AVID. The data showed the average percent of District X graduates between 2005 and 2010 who said they intended to go to college was 92.3; the actual percentage of 2005-2010 graduates enrolled in college in the fall immediately following high school graduation was 81.5 (District X Executive Director School Administration, personal communication, January 9, 2012). Additional data supporting the need for an intervention program in District X high schools came from a set of a local community college's reports regarding District X students' placement test scores. Summary statistics shared by District X Director of Assessment and Research showed that of the 1,126 District X graduates from 2006 to 2010 submitting reading placement scores to the college, 17% ($n = 192$) scored one or more levels below college level readiness. Additionally, of 1,048 District X graduates for the same years submitting math placement scores to the college, 71% ($n = 751$) scored between one and three levels below college level readiness. A final set of data obtained from District X Director of Assessment and Research contained information on math preparation and a local university performance for first-time District X freshmen between fall 2006 and fall 2009. The data presented in these reports showed that the average grade in the first university's math course was 2.54; the average first semester GPA of all courses for the same group of first-time freshmen from District X was 2.76 (District X Director Assessment and Research, personal communication, January 9, 2012).

The AVID program was implemented in one high school, District X High School, beginning in the 2006-2007 school year. The following year AVID was implemented at

the other district high schools (District X Executive Director School Administration, personal communication, January 5, 2012).

Statement of the Problem

AVID has been implemented in schools across the United States as a CSR program targeting students identified as being in the academic middle. Schools adopted the AVID program to develop the non-academic skills that enhance students' college readiness, increase the likelihood of students taking college preparation courses, and increase students' chances of postsecondary success in college (AVID, 2013). Research has been conducted on AVID in schools and districts with low socio-economic and high minority demographics. Hale (2006) studied the perceptions of students in the AVID program and in "regular tracked classes" regarding self-esteem, self-efficacy, personal beliefs, and perceived social support. The ethnic breakdown of Hale's (2006) study group was Latino 69.7% ($n = 67$) and White 30.3% ($n = 29$), within a school population of Latino 60.7% ($n = 798$), White 31.8% ($n = 418$), and all others 8.5% ($n = 99$) (p. 41). Hale (2006) concluded the program benefited its participants as evidenced by results that indicated AVID students' high level of academic self-concepts and academic self-efficacy. Students also reported they were more confident in their ability to obtain good grades in their classes, maintain friendships, and find individuals in the school they could trust (Hale, 2006).

Lake (2009) studied the impact of AVID on academic achievement by analyzing scores on the Measure of Academic Progress (MAP) for reading and math, and writing assessment scores. Lake's (2009) sample included ninth graders enrolled in AVID. Lake (2009) found no relationship between student participation in the AVID program and

academic success as measured by the MAP for reading and math, and writing assessments. Lake's (2009) study of AVID in a district with the demographics and academic performance similar to District X was limited to freshmen in the first year of AVID implementation and used standardized assessment scores as measures of academic success. More research needed to be done on the impact of AVID in a district such as District X.

Potts (2010) studied the bachelor's degree completion status of 2004 high school graduates who enrolled in any of the state universities in the fall following graduation from high school ($n = 626$). Potts sought to determine whether a statistically significant relationship existed between the attainment of a baccalaureate degree and (1) participation in a chosen high school academic preparation program; (2) the composite ACT score; (3) participation in a chosen high school academic preparation program and an ACT score below a 21 composite; and (4) participation in chosen high school academic preparation program and an ACT score above a 21 composite (Potts, 2010). According to Potts (2010),

Analysis of the data revealed that statistically significant relationships existed between college degree completion and the chosen high school academic... program, as well as the ACT composite score category. Additionally, the combination of the academic preparation program and both of the ACT composite score categories also were related to college degree completion. (p. iii)

In a follow-up analysis, Potts (2010) found that 2004 graduates who took the least rigorous curriculum, only the basic courses required for graduation, or had an ACT

composite score below a 21, more often failed to earn a baccalaureate degree within five years of high school graduation than statistically would be expected.

The college entrance data obtained from District X Director of Assessment and Research (District X Director of Assessment and Research, personal communication, January 9, 2012) and study results from Lake (2009) and Potts (2010) suggested that there were students graduating from high school in districts similar to District X in the academic middle who had the potential for college success. Such students needed a comprehensive school reform program such as AVID to guide them toward and support them while taking a more rigorous high school curriculum. The data reviewed showed that the need for AVID in District X was strong, but also that the impact on academic achievement and college readiness was unclear.

Purpose Statement

The purpose of this study was to analyze the relationships between enrollment in AVID and the academic and non-academic facets of college readiness as measures of the success of Advancement Via Individual Determination (AVID). Throughout the program's nearly 30-year history (Radding, 2010), multiple studies on AVID referencing high percentages of minority student school populations and students from low socio-economic families enrolled in the program had been conducted (Connors, 2010; Ford, 2010; Hale, 2006; Laughlin, 2011; Petzar, 2000; Victory, 1998; Ward, 2008). However, the number of studies on AVID in districts similar to District X are limited.

Significance of the Study

The results of this study could be used by District X to further the understanding of the impact of AVID on student achievement in all high school grade levels. Additionally, the results of this study contributed to the research-base by adding data regarding the impact of AVID in a school district with high socio-economic demographics, a high overall academic performance record, and a low percentage of minority students. According to the publishers of the AVID program, there were indicators beyond academic achievement to be considered as measurements of the program's success. These indicators included AVID students' perceptions of having acquired such personal qualities as self-advocacy, self-discipline, engagement in class, and their application of strategies learned through the class in their other courses (AVID, n.d.h.). For school districts like District X, with overall high socioeconomic measures and academic success, who were seeking ways to determine placement of students in the AVID program, this study provided data regarding the success of AVID in the form of multiple measures of academic achievement and participants' perception regarding the impact on non-academic skills of college readiness.

Delimitations

This study was delimited to five high socio-economic high schools in the Midwest. Survey data were collected during one school year, 2010-2011. The achievement data collected for this study was measured by standardized tests administered during each year from 2009 to 2012. This study was delimited to 9th - 12th grade students' performance on standardized tests (KCA reading, KCA math, PLAN, and ACT) and performance on the most current GPA. The need to collect this data across

multiple years was a result of District X's testing schedule. The PLAN test was administered only in ninth grade, the KCA math was administered in tenth grade, and the KCA reading was given in either tenth or eleventh grade. Collecting the data between 2009 and 2012 ensured the researcher's ability to obtain scores on these three tests for all tested content areas relevant to this study. Data were collected for students meeting AVID enrollment criteria at all five of the District X high schools. Because of these delimitations, the results of this study may not be applicable to middle school AVID programs or to all populations. In addition, measurement of dependent variables was delimited to student survey data on Program Components, Program Benefits, number of years enrolled in AVID, and year in high school.

Assumptions

The researcher made the following assumptions related to this study:

- The AVID student profile for selecting students was used effectively at each of the five District X high schools.
- Professional development necessary for fully implementing the AVID curriculum was provided to all AVID instructors at all five high schools.
- All components of the AVID curriculum were consistently and appropriately implemented by all AVID instructors at each high school.
- Because students chose to enroll in the AVID course, each did their personal best and gave 100% effort to learn and apply the AVID curriculum.
- Students did their personal best to achieve at an academic maximum level on the KCA math, KCA reading, PLAN, ACT, and for their GPA.
- Students responded to survey questions with true and honest answers.

- Data and statistics obtained from District X sources were accurately and truthfully reported.

Research Questions

The following research questions were used to guide this study.

1. To what extent does participation in AVID impact academic measures of college readiness?
2. What are AVID students' perceptions regarding the impact of the non-academic skills of college readiness?
3. To what extent do relationships exist between the number of years students are enrolled in AVID and their perceptions of the level of helpfulness of Program Components and degree of improvement in Program Benefits?
4. To what extent do relationships exist between students' grade levels in high school and their perceptions of the level of helpfulness of Program Components and their degree of improvement in Program Benefits?

Definition of Terms

The following are definitions of key terms used throughout the study:

ACT. The ACT is a national college admissions test, accepted by all four-year colleges and universities in the U.S., formally known as the American College Testing Assessment (ACT Inc., 2007).

Adequate yearly progress (AYP). AYP measures “an individual school’s yearly progress toward achieving state academic standard” (Kansas Parent Information Resource Center, n.d., p. 3).

Advancement Via Individual Determination (AVID). AVID is “a college readiness system for elementary through higher education that is designed to increase schoolwide learning and performance (AVID, n.d.a., para. 1).

Benchmarks. Benchmarks are “detailed description of a specific level of student achievement expected of students at particular ages, grades, or developmental levels; academic goals set for each grade level” (Kansas Parent Information Resource Center, n.d., p. 6).

Benchmark setting cohort. A benchmark setting cohort is a representative group of Kansas educators trained to conduct test-item analysis and establish performance level cut-scores for each tested content area at each tested grade level of the Kansas state assessments (Poggio, Yang, Irwin, Glasnapp, & Poggio, 2007).

Composite score. “The composite score, as reported by ACT, is the average of the four test scores earned during a single test administration, rounded to the nearest whole number” (ACT, Inc., 2007, p. 16).

Comprehensive School Reform (CSR). CSR is an NCLB program intended to improve student achievement by supporting the implementation of comprehensive school reforms based on scientifically-based research and effective practices so that all children, especially those in low-performing, high poverty schools, can meet challenging State content and academic achievement standards (United States Department of Education, 2007, para 1).

Core curriculum. Core curriculum includes “four or more years of high school English and three or more years each of high school mathematics, social studies, and natural sciences” (ACT, Inc., 2007, p. 65).

Cornell Notes. A system for taking notes developed in 1949 at Cornell University by Walter Pauk. The strategy, designed to be used as a test study guide, has been adopted as the preferred note-taking method by most major law schools (AVID, n.d.c.).

Cut scores. Cut scores include “selected points on the score scale of a test. The points are used to determine whether a particular test score is sufficient for some purpose” (Ziekey & Perie, 2006, p. 2).

Data Warehouse (DW). A data warehouse is “a computer-based information system that is home for secondhand data that originated from either another application or from an external system or source” (Minnesota Historical Society, 2012, para. 2).

Hedgehog Concept. A hedgehog concept is “an understanding of what you can be the best at” (Collins, 2001, p. 98).

Indicator. An indicator is a learning outcome (Poggio et al., 2007, p. 2).

Individual Education Plan (IEP). An IEP is an intervention strategy most often used for special needs children representing a guideline of strategies and goals to be followed for the school year that is put together by a problem-solving team (Kansas Parent Information Resource Center, n.d., p. 14).

Kansas Computerized Assessment (KCA). The KCA were yearly tests administered between 2006 and 2013 to students in grades 3–11 in compliance with NCLB to demonstrate adequate yearly progress (Poggio et al., 2007, p. 4).

Kansas assessment performance levels. Kansas assessment performance levels were achievement categories defined by the state of Kansas for Kansas Computerized Assessments. The categories were: *Academic Warning, Approaches Standard, Meets*

Standard, Exceeds Standard, and Exemplary (Kansas Parent Information Resource Center, n.d., p. 16).

Local Option Budget (LOB). LOB is a Kansas statute allowing school districts to raise funds to supplement base state aid per pupil (Lusk, n.d.).

No Child Left Behind (NCLB). NCLB is a federal law, formally known as the Elementary and Secondary Education Act (ESEA), enacted on January 3, 2001 “to close the achievement gap with accountability, flexibility, and choice, so that no child is left behind” (United States Department of Education, 2004a, sec. 1114).

Operational curriculum. An operational curriculum is “the learning expectations and assessments that actually took place in real time in a given school year” (Hale, 2008, p. 288).

Multi-tiered Systems of Support.

MTSS is a coherent continuum of evidence based, system-wide practices to support a rapid response to academic and behavioral needs, with frequent data-based monitoring for instructional decision-making to empower each Kansas student to achieve to high standards (Kansas Department of Education, 2008, “Definition,” para. 1).

Opportunity to learn. Opportunity to learn is a way of measuring and reporting whether students and teachers have access to the different ingredients that make up quality schools (Kansas Department of Education, 2010).

Response to intervention (RtI). RtI is “the practice of providing high-quality instruction and interventions matched to students’ needs, monitoring progress frequently

to make changes in instruction or goals, and applying child response data to important educational decisions” (Buffum et al., 2009, p. 210).

Socratic Seminar. Socratic Seminars are “a method of teaching based on Socrates' theory that it is more important to enable students to think for themselves than to merely fill their heads with ‘right’ answers” (National Paideia Center, n.d., p. 1).

Stakeholder. Stakeholders are “all people or organizations whose operation is directly or indirectly affected by the quality of school” (Bradley, 2004, p. 94).

Strategic plan. “Strategic planning determines where an organization is going over the next year or more, how it's going to get there and how it'll know if it got there or not” (McNamara, n.d., “All About Strategic Planning,” para. 1).

Universal Design Guidelines. Universal Design Guidelines are elements that guide assessment design including “(1) inclusive assessment population; (2) precisely defined constructs; (3) accessible, non-biased items; (4) amendable to accommodations; (5) simple, clear, and intuitive instructions and procedures; (6) maximum readability and comprehensibility; and (7) maximum legibility” (Thompson, Johnstone, & Thurlow, 2002, “Executive Summary,” para. 2).

Viable curriculum. A viable curriculum is primarily a combination of factors identified as “opportunity to learn” and “time” (Marzano, 2003, p. 19).

Overview of the Methodology

This quantitative, non-experimental study examined the impact of participation in AVID on academic measures of college readiness. Academic achievement was studied using existing data obtained from the district’s student information system and data warehouse. Scores on the KCA math, KCA reading, PLAN, ACT, and GPA were

collected from the District X Data Warehouse. Data were analyzed using independent-samples *t* tests, chi-square tests of equal percentages, and Pearson product-moment correlations.

AVID students' perceptions of the impact of the Program Components and Program Benefits were examined. This study also examined the extent to which relationships existed between the perceived impact of the AVID program by students and years in AVID by means of a survey co-developed by the researcher and District X's program evaluator and administered during an AVID class through SurveyKey. Students' perceptions of AVID program impact were analyzed using chi-square tests of equal percentages. Also explored were the relationships between the number of years in AVID and students' perceived impact of aspects of Program Components and Program Benefits; and the relationships between the students' grade level and perceived impact of aspects of Program Components and Program Benefits. A Pearson product-moment correlation coefficient was calculated to index the strength and direction of the relationship between between the number of years a student was enrolled in AVID and the student's perception of the helpfulness of Program Components; and relationship between the number of years a student was enrolled in AVID and perception of the degree of improvement in Program Benefits.

To assess impact on academic facets, the researcher analyzed (1) composite scores on the PLAN and the ACT; (2) students' most recent performance on the KCA reading and the KCA math; and (3) students' most current high school GPA. To assess perceived impact on non-academic skills necessary for college readiness, a survey was administered to AVID-enrolled students. The survey measured three areas of non-

academic facets of college readiness. Part 1 measured AVID students' perceived helpfulness of the Program Components in preparing each respondent for college success (Cornell Notes, Socratic Seminars, tutorials, tutors, college visits, ACT/SAT prep, push from AVID teacher, staying with the same classmates, and staying with the same teacher). Part 2 of the survey asked respondents to rate the Program Benefits (note-taking skills, test-taking strategies, presentation skills, organization skills, writing skills, study skills, self-confidence, self-expectation, self-discipline, self-advocacy, engagement in class, and school enrollment) in terms of the degree of personal improvement. Part 3 of the survey, Demographics, was used to collect data on respondents' high school grade level, number of years enrolled in AVID, and plans to stay enrolled in AVID in the coming semester.

Organization of the Study

This dissertation is organized into five chapters. Chapter one introduced the background, problem statement, purpose, significance, delimitations, assumptions, research questions, definitions of key terms for the study, and the overview of methods of the study. The relevant literature is reviewed in chapter two. Chapter three presents the methodology for the study, including the process for collecting data, the population and sample, instrumentation, data analysis and hypothesis testing, and limitations of the study. In chapter four, the results and findings are discussed. Chapter five is a summary of the entire study, restating the purpose of the study, the research questions, methodology, and major findings. It concludes by outlining implications for action and recommendations for future research.

Chapter Two

Review of the Literature

The purpose of this literature review is to provide an overview of comprehensive education reform and an examination of selected intervention models applicable to high school. The chapter begins with an historical look at the issue of school effectiveness and public accountability. Next, a discussion of Comprehensive School Reform (CSR) and the factors associated with successful and sustainable intervention programming and implementation is presented. The review of CSR is followed by a look at secondary education today focusing on the current state of U.S. high schools, promising practices for improvement, and the concepts of college and career readiness and 21st century skills. The next section of the chapter addresses the emergence and impact of secondary academic intervention programs including Expeditionary Learning (EL), High Schools that Work (*HSTW*), and Advancement Via Individual Determination (AVID). This overview is followed by an in-depth review of AVID and includes theoretical foundations and early development; student identification and participation; teacher selection and participation; curriculum design and pedagogy; and program model. The discussion of AVID is completed with a review of a number of studies on the effectiveness of AVID as a CSR intervention program. The chapter closes with a brief review of the chapter and the relevance the research has on this study.

Historical Context

Innovators dating from as early as 1897 have weighed in on critical arguments aimed at making schools more effective. Some common points of discussion include the purpose of a public school system, who should benefit from public school services, and

the best way to educate students (Public Broadcasting System, 2001). In 1897, John Dewey contributed to the ongoing discourse with a speech outlining his pedagogical creed. Even then, Dewey (1897) called for education to prepare young learners for an unknown future by offering the opportunity and guidance for developing students' academic behaviors, personal internal control, and by addressing the child's physical, mental, social, and emotional capacities.

Over the 115 years since Dewey's address, educators have worked to meet the needs of our nation's students through a variety of educational reform movements and programs. The 1983 report *A Nation at Risk* "blamed schooling for a general societal decline and implicitly implicated that the problems in schools stemmed from a focus on equity" (as cited in Jennings, George, Brayboy, & Cozart, 2007, p. 28). This issue remained at the forefront of debate surrounding the effectiveness of schooling, even into the age NCLB with its associated educational accountability as measured through high-stakes testing (Jennings et al., 2007). A commonly held misconception among educators and the general populace is that external accountability and high-stakes testing were results of NCLB. Conversely, Stiggins (2004) has shown that such imposed conditions have existed for more than 60 years. Figure 2 traces the history of using assessment to drive change in the public school systems across the United States and internationally. The timeline traces the layering of standardized tests used to drive change. This legacy was founded on the belief that comparing tests scores would cause sufficient embarrassment and drive school improvement efforts aimed at improving academic achievement as measured by standardized tests. This societal belief was a reason that

society can show no impact after 60 years of tests because of the incorrect use of standardized tests. (Stiggins, 2004).

Figure 3. Society's Assessment Legacy

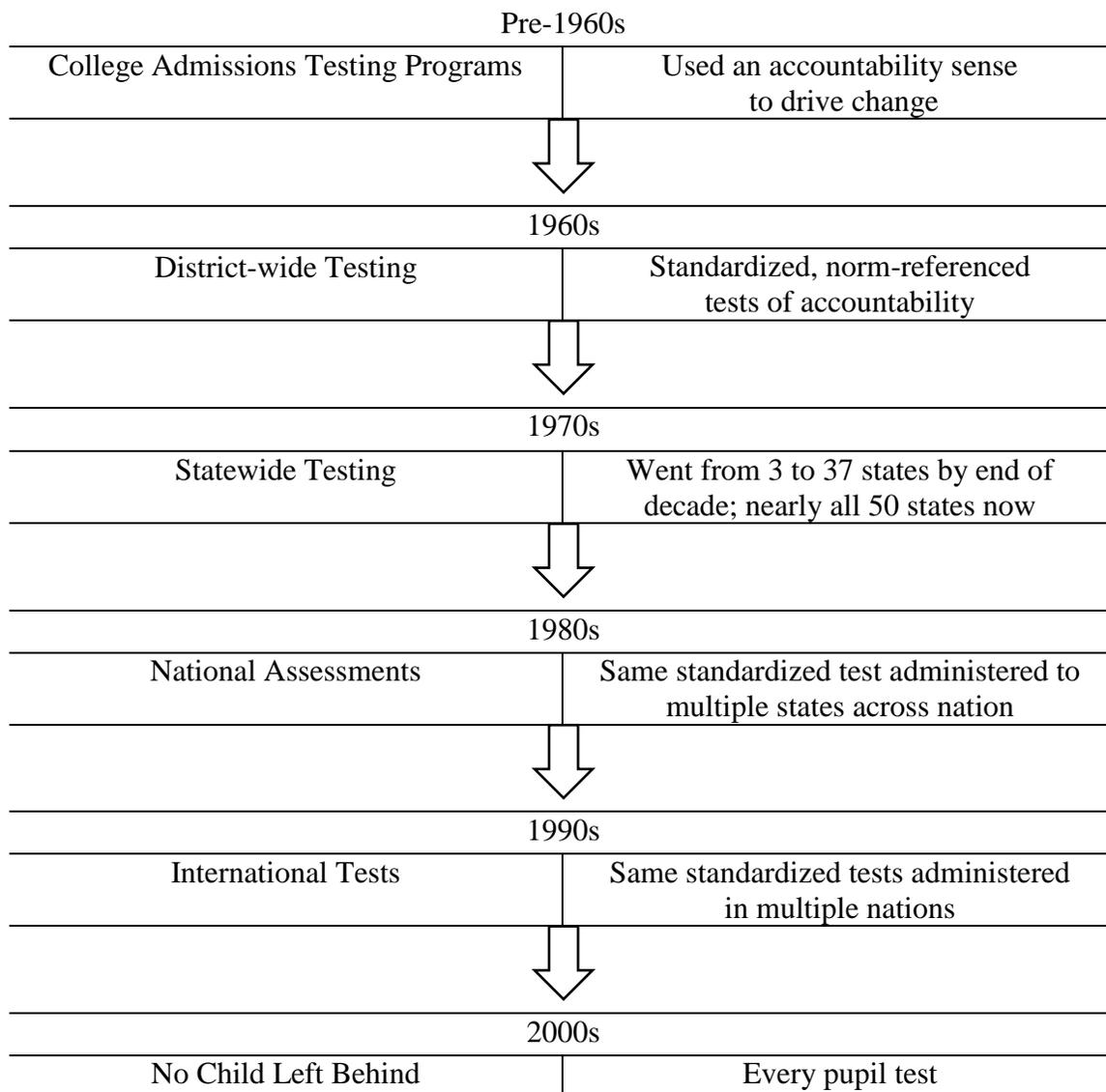


Figure 3 illustrates the 60 years of society's assessment legacy. Adapted from "New Assessment Beliefs for a New School Mission: Our Assessment Legacy" by R. Stiggins, 2004, part one. Copyright 2004 by the Educational Testing Services.

Examples of the incorrect use of tests include separating assessment and instruction; adding layers of testing over the years instead of replacing previous tests; and

the standard practice of using testing to rank-order students by performance (Stiggins, 2004). Two aspects of what Stiggins (2004) identified as the assessment legacy include “assessment ha[ving] been far more a matter of compliance than of teaching and learning” and “assessments...driv[ing] as many students to give up in hopelessness as they spur to more learning” (Stiggins, 2004, part 1).

A fundamental difference existed between all standardized assessment types of the 1950s through the 1990s and the 2001 re-authorization of NCLB (Stiggins, 2004). These differences lay in both the purpose of the tests and how test results were used. Until NCLB, the standardized tests making up the assessment legacy were designed to rank and sort those students who could succeed in school from those who could not. These results were used to drive school improvement through public humiliation and embarrassment (Stiggins, 2004). NCLB changed this by introducing the concept that the fundamental purpose of schools was to ensure that all students were successful. Additionally, the tests measuring AYP required under NCLB were tools to hold schools publicly accountable for moving all students toward proficiency (Stiggins, 2004). The CSR component was written into the NCLB law to ensure compliance by schools and districts to improve academic achievement of all students through research-supported programs and practices (United States Department of Education, 2007).

Comprehensive School Reform Act

In January 2002, President George W. Bush continued the effort to improve the effectiveness of schooling for every student by signing The No Child Left behind Act of 2001 into law (United States Department of Education, 2004b). During his first week holding office, President Bush remarked “These reforms express my deep belief in our

public schools and their mission to build the mind and character of every child, from every background, in every part of America” (United States Department of Education, 2007, p. 9). The revised law became the most current “overhaul of federal efforts to support elementary and secondary education in the United States...affecting virtually every program authorized under the Elementary and Secondary Education Act (ESEA)” (United States Department of Education, 2007, p. 9). As one of the most extensive revisions of ESEA, NCLB provided sixty-four detailed program descriptions for the ten Title programs outlined by the reform act. The intent of providing such detailed programming information was to “give states and school districts unprecedented flexibility in how they spen[t] their education dollars, in return for setting standards for student achievement and holding students and educators accountable for results” (United States Department of Education, 2007, p. 3).

The Comprehensive School Reform Program (CSRP) was outlined in Part F of Title 1, *Improving the Academic Achievement of the Disadvantaged* (United States Department of Education, 2007). The stated purpose of the CSRP part of NCLB was to provide financial incentives for schools to develop comprehensive school reforms based upon scientifically-based research and effective practices...so that all children can meet challenging State academic content and academic achievement standards. (United States Department of Education, 2004, Sec. 1601)

The details of the CSRP part of NCLB were based on research that was conducted to dispel the findings of *The Equal Educational Opportunity Survey* by Coleman, published in July 1966; the report became known as *The Coleman Report* (Lezotte, 2002). Lezotte (2002), one of the original researchers on effective schools, believed “*The*

Coleman Report concluded that family background not the school was the major determinant of school achievement” (p. 13). This report sparked the effective schools research; the first task for Lezotte’s team was identifying effective schools, which were defined as “schools that were successful in educating all students regardless of their socioeconomic status or family background” (Lezotte, 1991, p. 1). The research team then moved on to identify correlates of these effective schools. The results of this research became known as “The Effective Schools Movement” (Lezotte, 2002). Table 5 compares the required components of CSR programs under NCLB to the correlates of Effective Schools.

Table 5

Parallels between CSR and Effective Schools

CSR Components	Effective Schools Correlates
Focus on student achievement Buy-in Professional development	Clear and focused mission Instructional leadership Climate of high expectations
Research-based methods Comprehensive design Combined resources Evaluation planning Evidence of effectiveness	Frequent monitoring of student progress Opportunity to learn and student time on task
Partnerships with parents and communities External support	Home-school relations

Note. Adapted from “Correlates of Effective Schools: The First and Second Generation,” by L. Lezotte, 1991, pp. 44-45; and from “Comprehensive School Reform Program,” by the United States Department of Education, 2007, p. 1.

The CSRP addressed school improvement differently than did previous reform efforts by focusing school reform on strengthening the entire school (United States Department of Education, 2007). It was “built on the premise that unified, coherent, and integrated strategies for improvement, knitted together into a comprehensive design, would work better than the same strategies implemented in isolation from each other” (United States Department of Education, 2007, para. 2). An important aspect of the CSRP was providing federally-funded incentives to help schools develop and/or adopt scientifically-based reform programs that were research-proven to effectively strengthen the entire school.

Helping all students achieve academic proficiency on state content and standards was a principal motivation for establishing the effectiveness of a CSRP. The purpose and use of

CSR funds are not intended to support separate projects that are "added on" to existing programs or projects in a school. Rather, the funds help schools improve their entire educational operation through, for example, curriculum changes, sustained professional development, and enhanced involvement of parents, based on a careful identification of local needs. (United States Department of Education 2007, para. 9)

The NCLB law mandated that schools implement a CSR program that met the requirements outlined in the eleven components addressing elements significant to the ongoing reality of schools (see Appendix C for a complete description of each component). These components included strong academic content and research-based strategies; measurable goals; support by and for staff; professional development; parental

involvement; technical assistance; evaluation; and the allocation of resources brought together in an integrated, comprehensive design (United States Department of Education, 2007). The framers of NCLB believed in the guiding ideas of providing schools and districts greater control and flexibility, implementing scientifically-proven educational programs and teaching methods, and holding schools accountable through results would achieve what no previous attempts at comprehensive educational reform had been able to do. NCLB, it was believed, would finally ensure access to a high-quality education for all students (United States Department of Education, 2007).

CSRP Impact on Program Implementation

The CSRP requirement re-defined the legacy of school improvement efforts mandated by policy makers (Rowan, 2007). A misconception, similar to that of the assessment legacy, was that NCLB was the first attempt at large-scale educational reform. Rowan (2007) shared lessons learned about program reform implementation by tracing a forty-year legacy of educational reform in the United States, including CSR prior to NCLB. The 1960s brought an effort to improve math and science education by reforming curriculum embedded in textbooks (Rowan, 2007). Improvement of math and science education was again the focus of program efforts during the 1980s. The 1980s improvement strategy focused on increased graduation requirements; 33 states increased high school graduation requirements for science and math (Rowan, 2007). The path taken by reformers in the 1990s was standards-based reform and accountability. Standards-based school improvement reform efforts resulted in the development of new academic standards by school systems across the United States and included all grade levels, K-12, not just high school (Rowan, 2007). CSR efforts, noted Rowan (2007),

“differed from most previous efforts by supporting not-for-profit design teams to develop academic programs for adoption by and use in schools” (para. 8). Within 10 years, hundreds of new school-wide designs were developed and had been adopted by up to 20% of elementary schools in the United States (Rowan, 2007). Table 6 summarizes the positive and negative lessons each large scale historical school improvement effort taught educational reformers (see Appendix D for complete lessons).

Table 6

Educational Reform Lessons

Reform	Positives	Negatives
New Textbooks	High use by K-12 teachers and systems	Inconsistent use and ongoing support
Increased Graduation Requirements	High learning and success on achievement tests	Vertical content coverage needed Drop-out rate increased
Standards-Based Reform Accountability	Sound formats improve classroom instruction and testing	Awful teaching results from awful tests and testing formats
Comprehensive School Reform	Successful educational reform is intensive and multi-dimensional	Wide variety of programs and mixed results of improved teaching and learning

Note. Adapted from “Changing Instruction and Improving Student Learning: Lessons from Comprehensive School Reform,” by B. Rowan, 2007, p. 1.

Rowan’s (2007) research provided an overview of historical, large-scale educational reform beginning in the mid-20th century. This synopsis provided important lessons applicable to contemporary school reform efforts. Such lessons were important for all stakeholders - from the policymakers to the teachers and parents - involved in the process of school reform to consider. As the effort to adopt and implement successful

and sustainable CSR programs continued under NCLB, there were additional lessons to be learned, especially for the leaders of the reform initiatives. When initiating and leading educational reform, it was important to consider the major factors that led to successful and sustained CSR. Throughout the forty years traced by Rowan (2007), other researchers contributed to the research base on the impact of school-wide improvement efforts.

Berman and McLaughlin (1975) prepared a report for the United States Office of Education; this report looked at the effects of project characteristics, institutional setting, and federal policies on project implementation and outcomes. To study the effects of project characteristics, five representative educational approaches that “explained relatively little of the variation in implementation outcomes and continuation” were identified in the study group (Berman & McLaughlin, 1975, p. 15). These basic methodologies included classroom organizational changes, enrichment techniques, intensive traditional staffing, school administrative changes, and behavioral modification techniques. Berman and McLaughlin (1975) found that the same education reform project was implemented in radically dissimilar ways at four schools having comparable staffing and student populations. Using statistical evidence, the researchers concluded that “the [intervention was] generally adapted and altered by schools during implementation” (Berman and McLaughlin 1975, p. 15). An important implication, noted in the 1975 report, and confirmed through subsequent studies (Borman, Hewes, Overman, & Brown, 2002; Evans, Baugh, & Sheffer, 2005; Rutherford, 2005) was that “the predictors of effective implementation are likely to lie in those project characteristics promoting or inhibiting adaptation to the institutional setting [or] the

implementation strategy rather than in the educational [intervention]...itself” (Berman & McLaughlin, 1975, p. 16).

Other key findings by Berman and McLaughlin (1975) included major conclusions regarding the role institutional setting and federal policy play in program implementation. The researchers identified key elements associated with the institutional setting that promoted shared implementation of CSR programs. The elements associated with successful and sustained program implementation were adaptive planning, professional development personalized to the school or district setting, materials developed onsite for local use, and the establishment of a critical mass of supporters. Regarding the impact of federal policy on sustainable school reform, Berman and McLaughlin (1975) concluded that the level of management had little effect beyond the initial start-up phase of program adoption and implementation. Based on the study’s findings regarding the impact of project characteristics and institutional setting, the authors recommended how federal policymakers could support local implementation and state facilitation in the adoption and implementation of CSR programs. Berman and McLaughlin (1975) proposed federal guidelines that articulated the value of the elements found to be essential for successful and sustained program implementation. These included continuous and ongoing planning, regular and frequent staff meetings, professional development connected to staff meetings, and local material development.

The early findings on major factors leading to successful and sustainable CSR by Berman and McLaughlin (1975) were supported by subsequent research (Century & Levy, 2002; Evans et al., 2005; Rutherford, 2005). Century and Levy (2002) conducted a four-year qualitative study during the late 1990s looking for common conditions and

contexts of CSR programs that could be used as a model to predict sustainability. The purpose of Century and Levy's (2002) study was to understand why nine school districts across the United States had successfully implemented and sustained the same science education program for ten to thirty years. As a result of their study, Century and Levy (2002) defined sustainability as "the ability of a program to maintain its core beliefs and values and use them to guide program adoptions to changes and pressures over time" (p. 3). The researchers applied this definition when looking for evidence to explain why the science program had sustained the test of time in the nine school districts studied. While the authors' research settled on no single model, they did identify critical themes consistent across the selected research sites of their study. Century and Levy (2002) used these themes to draw lessons on characteristics of sustainable reform that are generalizable to a wide range of CSR programs and to all levels of the educational system. Based on their longitudinal study, the authors concluded the five commonalities of sustained educational reform were

- sustainability is not just maintenance of a program;
- programs go through stages as they move toward sustainability;
- contextual conditions influence the sustainability of programs;
- factors expected to affect sustainability do so in unexpected ways; and
- intangible and sometimes invisible factors affect sustainability in pivotal, dramatic ways (Century & Levy, 2002, pp. 2-6) (see Appendix E).

Evans et al. (2005) drew conclusions consistent with the lessons learned during the *Rand* study (Berman & McLaughlin, 1975) and from Century and Levy (2002).

Evans et al. (2005) studied the sustained effects of multiple CSR programs implemented

in schools across Pennsylvania. The purpose of their study included identifying the features of lasting CSR and how these features related to and supported NCLB requirements, and examining their impact on student achievement. The authors of the Pennsylvania study found successful and sustainable CSR programs

- help schools meet the requirements of NCLB through the comprehensive approach to professional development and stakeholder involvement;
- employ scientifically-based research-proven strategies for teaching and learning; and
- enhance student academic achievement. (Evans et al., 2005)

Rutherford (2005) deepened the findings from Berman and McLaughlin (1975), which had identified implementation as a key factor for sustained educational reform. Rutherford's (2005) study focused on the impact of restructuring school leadership on successful CSR implementation. Rutherford (2005) assessed the impact on teacher leadership resulting from the changes in organizational structures due to the CSR models. Findings by Rutherford (2005) supported the importance of leadership and shared implementation in successful CSR and emphasized the importance of achieving a critical mass in teachers' buy-in through developing and relying on teacher leaders. The reorganization of leadership in the successful model engaged teachers to systematically and purposefully take leadership roles. Teacher leaders in the effective CSR programs participated in the decision-making process, planned and facilitated professional development, and led collaboration within teacher teams. While documenting that teacher leadership could be fostered through new organizational structures brought on by CSR models, Rutherford (2005) also reiterated other early findings of the *Rand* study

(Berman & McLaughlin, 1975). Both studies found, in order to attain full implementation of CSR models, supporting conditions including ongoing contact with the program design team, embedded professional development, a strong collaborative culture, and local support from stakeholders needed to exist.

Together, these studies provided a solid foundation for understanding the critical considerations, attributes, and practices required for a successful and sustainable CSR program. It was critical that leaders addressed the context in which the change was to take place; the impact of the model on instructional practices; the role of leadership as defined by the model; and the resources that would be needed, including professional development for school and district staff. These were lessons leaders of educational reform should consider for increasing the likelihood of successfully achieving sustained CSRPs and interventions.

21st Century Secondary Education

To understand the predominant model of high school education today, one must go back to its origin in 1843. That is the year Horace Mann brought the factory-model classroom from Prussia to an already established and publicly-funded American education system (Rose, 2012). Mann's factory-model became the archetype of American education because "it seemed to adequately prepare American youth for the 20th century industrialized economy" (Rose, 2012, para. 1). However, since the inception of Mann's model as an American institution in the mid-1800s, high school education had changed very little and subsequently was falling behind in meeting the needs of 21st century learners for a world no longer based on an industrial economic structure (Gates,

2005; Goldman, House, & Livingston, 2011; Alliance for Excellent Education, 2007; Vockley & Vockley, 2006).

A range of academic measures administered between 2006 and 2011 supported the conclusion that high schools were not showing enough movement towards graduating students prepared for postsecondary success in the 21st century. A primary measure supporting this conclusion was the AYP requirement of the NCLB act for United States' schools. Additional measures were the 2009 results of the Program for International Student Assessment (PISA), which reported on the reading, math, and science literacy performance of 15-year olds; and the National Assessment of Educational Progress (NAEP), designed to measure what students across the United States and other countries knew and were able to do in ten content areas, including mathematics, reading, writing, and science (Usher, 2011). A review of data from each of these measures supported the assumption that high schools were not fully preparing students for postsecondary success.

The Center on Education Policy (CEP), an independent nonprofit organization monitoring national AYP data since 2005-06, released a report in April 2011. Table 7 shows the estimated percentage and number of schools in the United States and three Midwestern states that did not make AYP in 2011 based on 2010-2011 testing.

Table 7

Schools' AYP Progress in 2011

State	Did Not Make AYP (%)	Made AYP (%)	Did Not Make AYP (#)	Total (#)
U.S. Total	48	52	43,738	90,695
Kansas	16	84	213	1,367
Missouri	88	12	1,916	2,188
Oklahoma	30	60	526	1,777

Note. Adapted from “AYP Results for 2010-11,” by A. Usher, 2011, p. 1.

Trend data of the national percentage of schools not making AYP from 2006 through 2010 was also reported. Usher (2011) concluded “an estimated 48% of the nation’s public schools failed to make adequate yearly progress based on 2010-11 test results” (p. 11). Figure 4 shows the national percentage increasing from a low of 29% in 2006 to a high of 48% in 2011. Usher (2011) concluded the 2011 percentage “marks the highest national percentage of schools ever to fall short [of making AYP] and an increase of 9 percentage points from the previous year” (p. 11).

Figure 4. Six-Year AYP Trend Data

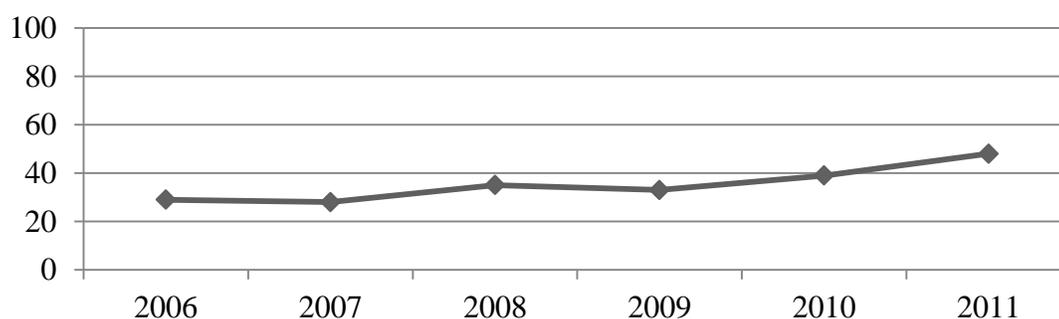


Figure 4 shows six-year trend data reported by the Center on Education Policy tracing the percentage of U.S. schools not making AYP between 2006 and 2011. Adapted from “AYP Results for 2010-11,” by A. Usher, 2011, p. 11. Copyright 2011 by the Center on Education Policy.

Aud et al. (2012) prepared a report on the conditions of education for the United States Department of Education that included NAEP and PISA results for 12th grade students assessed in 2009. Aud et al. (2012) reported that while average reading scores in 2009 were slightly higher than in 2005, they were lower than 1992 average scores (p. 62). When the average scores were disaggregated by proficiency levels of *Basic*, *Proficient*, or *Advanced*, the results indicated no statistical increase at any level when compared to 2005 and 1992 scores (Aud et al., 2012). Comparison performance on the 2005 and 2009 math portion of NAEP showed slightly better results. The average 12th grade mathematics score was 3 points higher than in 2005, while the percentages of 12th grade students performing on math at or above *Basic* (64%) and at or above *Proficient* (26%) were each three percentage points higher in 2009 than in 2005. There was no measureable difference in percentages of students performing at the *Advanced* level in 2005 and 2009 (Aud et al., 2012, pp. 62-64).

Aud et al. (2012) also reported on the 2009 PISA results for indicators measuring whether students were demonstrating academic “competencies enabling them to participate effectively in life situations” (p. 68). They compared the percentage of high-performing 15-year-olds in the United States to students from member countries of the Organization for Economic Co-operation and Development (OECD). On average, the percentage of students in the United States representing the high end of the skill distribution was higher than OECD students in reading literacy, lower in mathematics literacy, and not measurably different in science literacy (Aud et al., 2012).

Data reviewed on the condition of United States high schools, other than scores on standardized assessment measures such as high school course-taking, graduation rates,

and enrollment in postsecondary institutions, suggested a different conclusion than one of high schools either not moving in the necessary direction or not showing enough movement towards graduating students prepared for postsecondary success in the 21st century. Aud et al. (2012) concluded that courses taken by high school graduates while in high school showed “the percentages of... mathematics courses in geometry, algebra II/trigonometry, analysis/precalculus, statistics/probability, and calculus were higher in 2009 than in 1990” (p. 7). Aud et al. (2012) also reported a link between the higher average scores on the 12th grade mathematics NAEP assessment for 2009 high school graduates and that group’s course-taking of high level mathematics; more than 75% of the 2008-2009 public high school class graduated on time and received regular high school diplomas. Additionally, a positive trend for enrollment in postsecondary institutions indicated a positive trend based on historic and current numbers, as well as projections (Aud et al., 2012).

Between 2000 and 2010, undergraduate enrollment in degree-granting postsecondary institutions increased by 37 percent, from 13.2 to 18.1 million students. Projections indicate that undergraduate enrollment will continue to increase, reaching 20.6 million students in 2021. Over the 35-year period between 1975 and 2010, the rate of immediate college enrollment after high school ranged from a low of 49 percent in 1979 and 1980, to a high of 70 percent in 2009. This rate increased most recently from 2001 to 2009. (Aud et al., 2012, p. 80)

High Schools for the 21st Century

Even though more students were graduating from public high schools on time and enrolling in institutions of higher education, it remained a commonly held conclusion that these students were not adequately prepared for postsecondary success in this century (Coughlin, 2010; Gates, 2005; Glassroth, Mistretta, Reynolds, Rea, & Rizzo, 2006; Goldman et al., 2011; Meeder, 2006). Bill Gates (2005), in a speech given at the National Summit on High Schools, made one of the most robust statements asserting this commonly held belief regarding the performance of U.S. high schools.

American high schools are obsolete. By obsolete I mean that our high schools, even when they are working exactly as designed, cannot teach our kids what they need to know today. Training the workforce of tomorrow with high schools of today is like trying to teach kids about today's computers on a 50-year-old mainframe. It's the wrong tool for the wrong time. (para. 10)

Gates' message was that the current high school model instituted more than 50 years ago was "designed for a different era and a set of core beliefs that [we]re no longer valid in modern American society" (Meeder, 2006, p. 6). The model was designed for high school serve as transmitters of [core] content knowledge and information (Coughlin, 2010, p. 48). This same 50 year-old model was still functioning in a world already experiencing "information emancipation-the ready availability of knowledge in open-source online environments" (Coughlin, 2010, p. 48).

Closing the gap between the 50-year-old model of high schools as transmitters of knowledge and a new working model of high schools that meets the needs of this century's student presented the educational community an apparently insurmountable

challenge, but one for which it was possible to plan. A review of literature uncovered research-supported propositions for a reinvented model of and reimaged role for U.S. high schools (Coughlin, 2010; Glassroth et al., 2006; Goldman et al., 2011; Meeder, 2006). Coughlin (2010) described such a high school as

a place that involves students in rich, authentic, collaborative work, that takes responsibility for building 21st century skills; and that uses a diverse program of assessment to document students' growth in such skills as well as academic content knowledge...Successful [schools] transform themselves from transmitters of knowledge and information to orchestrators of a complex program of learning facilitation and cognitive development. (p. 4)

This reinvented model of high schools across U.S. school districts could be realized by education reform leaders across the United States in the near future via three steps.

School leaders should 1) think of high school not as a building within a physical space, but as being about learning what is needed for success in life; 2) allow students more decision-making and control; and 3) structure high schools around a system of continuous improvement that allows for and encourages experimentation (Goldman et al., 2011, p. 17).

Multiple sources (ACTE, 2006; Alliance for Excellent Education, 2007; Coughlin, 2010) support the conclusion that “in the twenty-first century, employers, educators and policymakers agree that the skills necessary for entering postsecondary education today are virtually the same skills necessary for success in the modern workplace. The results that matter apply to all students” (Vockley & Vockley, 2006, p. 11). The Alliance for Excellent Education (2007) noted that, according to data obtained

from the United States Bureau of Labor “most students need at least some postsecondary education to earn a decent wage-an estimated 85 percent of current jobs and almost 90 percent of the fastest-growing and best-paying jobs now require some postsecondary education” (p. 1). Additionally, Vockley & Vockley (2006) reported

workers also require more education than ever before. Of the 30 fastest-growing occupations in the U.S. Bureau of Labor Statistics’ 2006–07 Occupational Outlook Handbook, only three list short-term, on-the-job training as the most significant source of postsecondary education or training. Most require more: Eight require associate’s degrees, 10 require bachelor’s degrees and two require doctoral degrees. (p. 8)

School reform leaders should consider studying the goals for transforming high schools into 21st century learning communities as defined by organizations and researchers such as the Association for Career and Technical Education (ACTE, 2006), Partnership for 21st Century Skills (Vockley & Vockley, 2006), and Conley (2010) (see Appendix F). All emphasized similar goals for transforming high schools. These goals included outcomes such as high expectations, increased rigor emphasizing deep knowledge and high-level skills, real-world application of 21st century curriculum, learning, thinking, communication and life skills, and increased support from education staff. These recommendations supported a high school model designed to meet the needs of all 21st century learners. According to this research, the likelihood of truly reinventing the nation’s high schools into learning communities prepared to meet the needs of all students could be increased by coupling such goals with the previously discussed findings

of researchers such as Berman and McLaughlin (1975), Century and Levy (2002), Evans et al. (2005), and Rutherford (2005).

Exemplar Secondary Comprehensive School Reform Programs

The COSMOS Corporation (2003a) submitted an impact study to the United States Department of Education on comprehensive school reform demonstration (CSRD) programs implemented in schools across the United States. CSRD schools were those applying for and accepting [federal] funds... expected to implement nine components, one of which [was] an effective, research-based method or strategy. Together, the nine components comprise[d] the comprehensive reform aimed at improving student achievement 1) effective research-based methods and strategies; 2) comprehensive design with aligned components; 3) professional development; 4) measurable goals and benchmarks; 5) support within the school; 6) parental and community involvement; 7) external technical support and assistance; 8) evaluation strategies; and 9) coordination of resources. (COSMOS Corporation, 2003a, p. iii)

At the time of the COSMOS Corporation study (2003a) more than 1,800 sites were receiving federal award funding. Researchers randomly selected schools from those practicing one of the 25 CSRD models being implemented by the vast majority of those sites (COSMOS Corporation, 2003a, 2003b). Three promising reform models found among the top 25 CSRD programs by COSMOS Corporation researchers (2003b) were Advancement Via Individual Determination (AVID), Expeditionary Learning Outward Bound (EL), and High Schools that Work (*HSTW*). Each CSR program - EL, *HSTW*, and AVID - had been cited as exemplary by a number of other research studies (Bodily, 1998;

Borman, 2002; Borman et al., 2009; Martinez & Klopott, 2005; UMass Donahue Institute, 2011).

Expeditionary learning (EL). Bodily (1998) noted that EL was one of only two New American Schools (NAS) designs to show significantly high levels of implementation in partner schools. NAS “was established to develop designs for what were termed break-the-mold schools. Its initial goal was to create designs to help schools enable students to reach high educational standards” (Glennan, 1998, p. xi). An analysis of promising early CSRPs conducted by Borman presented the common components of CSR programs positively impacting student achievement (Borman, 2002; Borman et al., 2009). EL was cited as a highly promising model for meeting the strongest evidence of effectiveness category. This category included the CSR models in Borman’s 2002 study that “had accumulated particularly strong evidence...[as being] capable of improving achievement across a variety of school contexts” (Borman et al., 2009, p. 1).

Researchers at UMass Donahue Institute (2011) analyzed “the efficacy of the...EL model for closing achievement gaps among populations of interest” (p. 1) and explored the progress made at three EL schools in the state of New York. Conclusions of the UMass Donahue Institute’s (2011) study affirmed that EL “addresses learner needs regardless of demographic group” (p. 1) and that the program was unique among “other programs that are designed to meet the needs of specific populations” (p. 1) in addressing students’ comprehensive learning needs.

EL program design. EL was established in 1992 with a class of 13 graduate education students and the class instructor. EL originated from collaboration between the Harvard Graduate School of Education and Outward Bound, USA, later becoming the

Harvard Outward Bound project. The goal of the project was to “foster research and understanding of the experience-based theories developed by Outward Bound as they apply to classroom teachers and administrators...” (Powell, 2000, para. 15) by combining “the philosophies of Kurt Hahn, founder of Outward Bound, and the best of the Harvard Graduate School of Education’s theoretical and practical approach to teaching and learning” (Expeditionary Learning, 2012, p. 3). Hahn was a progressive German educator during the mid-to-late 20th century (Veevers & Allison, 2011). His vision was to see education embracing both the intellect and character of a person and believed education’s purpose was to make a person realize his grand passion (Veevers & Allison, 2011). Hahn co-founded Outward Bound in 1941 as a school for young sailors to learn survival skills through real-life experiences at sea (Veevers & Allison, 2011).

EL has since become established as a CSR archetype that creates school communities promoting “deep engagement in learning and support[ing] students to achieve at high levels [while] gain[ing] skills critical to college readiness and lifelong success...as well as mastery of subject area knowledge” (Expeditionary Learning Outward Bound, 2011c, p. 1). Beginning in the 2011-2012 school year, the EL network included 165 schools, 30 states and DC, 45,000 students, and 4,000 teachers (Expeditionary Learning Outward Bound, 2011a). EL (2011b) took on the charge to partner with schools to improve student achievement through an inquiry and project-based approach. EL inspires the motivation to learn, engage teachers and students in new levels of focus and effort, and transform schools into places where students and adults become leaders of their own learning. (p. 3)

The EL practices were designed to provide “teachers and students with academically rigorous experiences marked by purposeful learning, challenge, collaboration and perseverance” in an environment where “everyone must work together as a team...confront the challenge of academic achievement and succeed” (Expeditionary Learning, 2011c, p. 2). The EL experience was built on ten design principles reflecting the educational philosophies of Hahn. These principles, which branded the EL model, were 1) the primacy of self-discovery, 2) the having of wonderful ideas, 3) the responsibility for learning, 4) empathy and caring, 5) success and failure, 6) collaboration and competition, 7) diversity and inclusion, 8) the natural world, 9) solitude and reflection, and 10) service and compassion (UMass Donahue Institute, 2011, p. 2). This was achieved by concentrating on 37 core practices that exemplified what education ideally looked like in an EL school. Table 8 summarizes the organization and alignment of the five key dimensions and corresponding core practices.

Table 8

EL Dimensions and Core Practices

Dimension	Core Practices
Curriculum	Academic/ college preparatory rigor - standards-based and analyzed regularly for standards alignment; authentic learning
Instruction	Learning target guided - lesson planning and balanced assessment, high achievement culture, differentiated instruction,
Assessment	Student-engaged assessment practices - focus on continual improvement, on-going data inquiry, and analysis
Culture and Character	Personal best mind-set - respect, responsibility, courage, kindness, commitment to quality work and citizenship
Leadership	School-wide shared leadership - all practices guided by strong vision of high academic achievement, continuous improvement

Note. Adapted from “Expeditionary Learning Core Practices: A Vision for Improving Schools,” by Expeditionary Learning Outward Bound, 2011c, p. 5.

Research on EL. EL measured student success based on three indicators: academic achievement, quality of student work, and evidence of engagement (Expeditionary Learning Outward Bound, 2012). Research data on academic achievement supported EL as a successful CSRP focused on college readiness. An annual review of each EL school was conducted to determine the level of implementation. Data from 2009-2010 showed high schools implementing EL scored an average of 16.5 points higher in reading/English language arts than district averages on yearly AYP tests. EL high schools compared to district averages in mathematics AYP tests from 2009-2010 scored an average of 5.2 points higher (Expeditionary Learning Outward Bound, 2011a). Several external studies of EL impact on student achievement as measured by standardized testing also showed a significant positive correlation between students’ level of proficiency and EL implementation (Amoruso, Bontempo,

& Wilson, 2010; UMass Donahue Institute, 2011). Wilson et al (2010) conducted a national study of more than 11,000 students in eight states. The study compared students in EL schools with students in non-EL schools. Researchers concluded that students in high-fidelity EL schools implemented for three or more years, achieved significantly greater achievement test score gains in reading, math, and language usage than the comparison group.

Two studies conducted in New York by researchers with UMass Donahue Institute (2011) showed similar positive correlations between improved academic achievement and implementation of EL. A two-year study in the Rochester, NY school district compared students in EL elementary and middle schools to peers in non-EL schools. Results showed enrollment “in an EL school resulted in substantial and statistically significant achievement advantages for elementary students in English/language arts (ELA) and math, and for both years of middle school ELA” (Expeditionary Learning Outward Bound, 2011a, p. 6). Researchers concluded it could be predicted that 39% of students enrolled in an EL middle school would improve from non-proficient to proficient on state English and Language Arts AYP exams.

The second study conducted by UMass Donahue Institute (2011) examined progress towards closing the achievement gap in New York, NY and Rochester, NY schools implementing EL. Student achievement data from the New York State English language arts and mathematics tests were collected between 2006 and 2010. The specific study population included five groups: Hispanic students, African-American students, students with Individualized Education Plans (IEP), English Language Learners, and

students eligible for free or reduced lunch - and indicated the following (UMass Donahue Institute, 2011):

1. Results provide strong evidence that EL schools are closing achievement gaps for these populations in Rochester and New York City. Residual effect sizes are large and consistent in ELA in all three schools and in math in two of the schools.
2. Effect sizes suggest that the EL schools in this study are substantially closing achievement gaps for students eligible for free or reduced price lunch, English language learners, and African-American and Hispanic students. In many cases, the achievement gap was completely closed. (p. 6)

EL established a goal that 100% of students graduating from schools in the EL network would be accepted to four-year colleges. To celebrate this achievement, EL established a 100% College Acceptance Club. In 2010, 10 EL high schools were inducted into the club (Expeditionary Learning Outward Bound, 2011a).

High schools that work (*HSTW*). *HSTW* has been noted by Martinez and Klopott (2005) as an exemplar CSR model for preparing graduates possessing all facets of college and career readiness skills. Martinez and Klopott (2005) connected predictors including academic rigor, access to social networks, and information regarding college culture to facets of college and career readiness.

HSTW was cited as a particularly important CSR program by Martinez and Klopott (2005) for serving “students who previously were tracked in vocational and general education programs” (p. 21). Martinez and Klopott (2005) noted *HSTW* goals and restructuring components were closely associated with the predictors for increasing

the number of students having access to and going to college. Another exemplary component of *HSTW* was the link between vocational and academic curricula. The integration of both curricular areas facilitated students' preparation for postsecondary success while deepening their knowledge of core academic content (Martinez & Klopott, 2005).

HSTW has been noted as a CSR program that successfully drives school improvement by The Comprehensive School Reform Quality (CSRQ) Center (American Institutes of Research, 2006). American Institutes of Research (2006) concluded the program's success was ensured through valuable professional development and by providing a firm underpinning of core components. Additional factors denoting *HSTW* as an exemplary CSR program included formal protocols for developing stakeholder's early understanding of the program, building site staff buy-in through informal processes, measuring implementation using standardized benchmarks, and providing technical assistance (American Institutes of Research, 2006).

HSTW program design. The State Vocational Education Consortium of the Southern Regional Education Board (SREB, 2013a) established *HSTW* in 1987. The program was piloted in 28 sites across 13 states. As of 2012 the *HSTW* network, partnering with schools and technical centers to "improve students' academic and technical achievement and high graduation rates" (SREB, 2013c, slide 1), included more than 1,200 sites in 30 states. The *HSTW* mission was "to create a culture of high expectations and continuous improvement in high school and the middle grades" (SREB, 2013a). *HSTW* were designed to achieve the program mission through a set of goals for continuous improvement (SREB, 2013b):

1. Increase the percentage of high school students who meet college and career readiness goals to at least 85%.
2. Increase the percentage of students completing the *HSTW*-recommended curriculum to 85%.
3. Increase the percentage of high school students who complete high school in four years to 90%.
4. Advance state and local policies and leadership initiatives that sustain a continuous school improvement effort.
5. Help all students leave high school with an employer certification, postsecondary credit, or the knowledge and skills needed to avoid remedial postsecondary studies. (para. 1)

A foundational belief of *HSTW* was that all stakeholders within a learning community must work together to create a culture in which “student achievement, graduation rates and school culture can improve” (SREB, 2013b, para. 2). This belief was supported by seven explicit conditions for accelerating student achievement in individual schools within the *HSTW* network: a) a clear, functional mission statement; b) strong leadership; c) plans for continuous improvement; d) qualified teachers; e) a commitment to goals; f) flexible scheduling; and g) support for professional development (SREB, 2013b, para. 2). *HSTW* was “about raising achievement and graduation rate by changing what is taught, how it is taught, what is expected of students, and how educators work with each other, the home and the community” (SREB, 2013c, slide 2).

Students enrolled in an *HSTW* school completed a rigorous program of courses designed to prepare graduates to be successful in postsecondary endeavors. “The intent

[was] to promote school and classroom practices that foster greater student effort to meet course standards” (SREB, 2013c, slide 4). The recommended academic core for all *HSTW* students included four credits in college prep/honors English; four mathematics credits in Algebra I, geometry, Algebra II and above; three science credits at the college prep level; three years of social studies; and a career or academic concentration (SREB, 2013c, slide 7).

Research on HSTW. *HSTW* used multiple measures to analyze implementation success including data on their graduating vocational completers using the *HSTW* Assessment, which was “a series of tests based on the science, mathematics, and reading examinations included in the National Assessment of Educational Progress-NAEP” (Kaufman, Bradby, & Teitlebaum, 2000, p. 2). Other measures of success included the patterns of courses students took, and teacher and student attitudes (SREB, 2012, 2013c). Table 9 presents the results from a study that showed a higher percentage of students who completed two or more parts of the *HSTW* course program met the college and career readiness goals than the percentage completing one or no parts. Studies on the effectiveness of *HSTW* as a CSR have been conducted internally by SREB (2013b) as well as by a number of outside researchers (Andrele, 2008; Johnson, 2003; Kaufman et al., 2000).

Table 9

Impact of Course Completion on Percentage of Students Meeting Goals

Parts	College and Career Readiness Goals		
	Reading	Mathematics	Both
Two to Three	68.00	65.00	52.00
One or Less	43.00	40.00	25.00

Note. Adapted from “About High Schools that Work” by the Southern Regional Education Board, 2013c, slide 8.

Johnson (2003) compared student performance on selected *HSTW* variables against previous performance at two sites - Randolph County, West Virginia and Sussex County, Delaware - in a longitudinal study from 1990 through 2002. Student achievement data used by Johnson (2003) included scores from the NAEP test, ACT composite scores, and SAT math, verbal, and basic skill scores. Results indicated Sussex Tech students’ 2002 NAEP scores continuously improved and exceeded *HSTW* benchmarks in mathematics, science, and reading. Tenth grade students achieved academic improvement on the Delaware Student Testing Program in mathematics, reading, and writing skills in 1998 through 2002, the number of students taking the SAT increased from eight percent in 1993 to 48% in 2001. Other measures supporting Johnson’s (2003) conclusion that adherence to the practice of the *HSTW* reform model could positively impact student achievement as well as non-academic facets of college and career readiness, included a gradual attendance rate increase; a decreased dropout rate to less than two percent by 2002; students expressing an intent to pursue

postsecondary education increased by 58%, and 64% of graduates involved in the study enrolled in college (p. 111).

Anderle (2008) studied the impact of integrating academics and career-technical education on student achievement in two California charter schools, grades 9-12.

Anderle (2008) explored four areas of implementation including evidence of positive educational outcomes. The positive educational outcomes included: 1) improved test scores, 2) improved college and work placement, and 3) improved motivation towards school. Results indicated improved standardized test scores for students at both schools.

California measured the yearly academic performance and growth of schools with the Academic Performance Index (API) (California Department of Education, 2013).

The API at both the Gary and Jerri-Ann Jacobs High Tech High and Yuba County Career Prep [increased] since the implementation of [*HSTW*]. At the Gary and Jerri-Ann Jacobs High Tech High the API moved from 792 in 2006 to 829 in 2007. Yuba County Career Prep [saw] the most significant improvement...with an increase of fifty points from the 2006 to 2007 school year. (Anderle, 2008, p. 115)

To determine if *HSTW* led to improved college and work placement and improved motivation towards school, Anderle (2008) conducted interviews with students, parents, and staff at both schools. Feedback from all interviewees indicated agreement that participation in the program 1) helped prepare graduates for college and work and 2) resulted in improved motivation for students (Anderle, 2008). The findings of Anderle's (2008) study "suggested positive educational outcomes for students, which include: 1)

improved motivation towards school, 2) improved test scores, and 3) improved college and work placements” (p. 115).

Advancement Via Individual Determination (AVID). Martinez and Klopott (2005) identified AVID as an exemplar model because the program proactively seeks to raise achievement and increase college preparedness for students at risk, it deliberately addresses the predictors of college going behavior and uses college entrance and completion as measures of its success, making it unique among reform models...AVID achieves its goals by providing students with tremendous amounts of social and academic support. It seeks to create a network of caring and informed adults around each student, establishes high expectations for students, and provides a means by which they can meet these expectations. The strong focus on providing academic support enables AVID students to take high-quality and high-intensity courses and to succeed when doing so. For students who otherwise would be enrolled in a noncollege preparatory track, AVID develops their social-psychological strengths and propels them toward completing high school and enrolling in college, making college attendance a reality for underserved students. (p. 18)

While the AVID model was built around the students’ experience in the AVID elective classroom, program success lay with multiple stakeholders. Research has shown the AVID design provided the kind of support and scaffolding students needed for developing the skills and dispositions necessary for postsecondary success; supported teachers with ongoing professional development critical to schoolwide success; and

provided the data AVID sites needed to inform instruction, for proper implementation, and was essential for refinement and expansion of the program (AVID, 2013).

AVID model and program design. AVID has been described as “transformative education” because it was unique to many other CSRPs by “providing opportunities for students to discuss and critique social reality through an open dialogue between students and teachers. AVID moved beyond academics and included an examination of social systems and the opportunity for change” (Lipovski, 2004, p. 100). AVID, contrary to traditional school norms, encouraged teachers and students to examine, discuss, and debate many societal norms in an effort to understand, find success within, and perhaps change them (Lipovski, 2004). The executive director of AVID expanded Lipovski’s description of AVID to include it being a program that could ensure all students in a school graduated with the necessary skills to be college and career ready in all facets (Nelson, 2012):

The AVID system is designed to open all...doors and give every student the opportunity to fulfill their college dream. AVID works as a safety net, catching all of the students who might otherwise be missed. AVID sees the potential in the good student and helps lift them to greatness. AVID finds the dreams that are buried in the hearts of students and opens the doors that are often closed and locked. (p. 3)

Theoretical foundations and early development. Mary Catherine Swanson began AVID in 1980 as a way to ensure her English class of 32 students at Clairemont High School in San Diego, California met the demands of a court-ordered desegregation of the city’s school district (AVID. n.d.a.). Swanson’s class was built on her philosophy to

“hold students accountable to the highest standards, provide academic and social support, and they will rise to the challenge” (AVID, n.d.a., para. 1). This philosophy has remained the foundational belief of AVID as it has grown to

an elementary through postsecondary college readiness system designed to increase schoolwide learning and performance. The AVID College Readiness System (ACRS) accelerates student learning, uses research based methods of effective instruction, provides meaningful and motivational professional learning, and acts as a catalyst for systemic reform and change. (AVID, n.d.a., paras. 4-5)

Since Swanson’s first class of 32 students, AVID network of schools and districts experienced continual growth and widespread impact.

Many schools and districts are using AVID as a research-proven comprehensive school reform model to affect change and improve their schools. During the 2011-2012 school year, AVID served over 425,000 students and was implemented in more than 4,700 sites in over 900 districts across the United States and internationally. (AVID, n.d.a., para. 1)

AVID’s mission was “to close the achievement gap by preparing all students for college readiness and success in a global society” (AVID, n.d.b., para. 1). The program was designed to prepare students in the academic middle for postsecondary eligibility to four-year colleges. This was intended to be achieved by concentrating on AVID’s three primary goals: 1) increase GPA; 2) increase rigorous course enrollment; and 3) increase college application and acceptance. The targeted AVID students were

in the academic middle – B, C, and even D students – who have the desire to go to college and the willingness to work hard. These are students who are capable of

completing rigorous curriculum but are falling short of their potential...AVID pulls these students out of their unchallenging courses and puts them on the college track: acceleration instead of remediation. (AVID, n.d.a., para. 2)

While AVID was mostly implemented as a social and academic support elective class designed to assist students in their rigorous college preparatory courses, it was intended that AVID became “institutionalized as a schoolwide program and a core function of the school’s efforts to meet the needs of all students” (Borman et al., 2002, para. 1).

Student identification and participation. Potential secondary AVID students were most commonly identified by general education teachers and school counselors sometime in the second semester of the final junior high/middle school year among those students with characteristics fitting the “ideal” AVID candidate. Once potential AVID candidates were identified based on academic performance, teachers and counselors collaborated to screen students on additional selection criteria including a) desire and determination: whether the student wanted to attend college and they were willing to work hard to reach that goal; and b) sub-group: whether the student was a member of an underserved group within their school and/or district population (AVID, n.d.a.).

The final step in the AVID enrollment process was an invitation to interview with site team teachers, counselors, and program coordinators. Before this final step, student candidates had to have chosen to participate in AVID. Voluntary participation was considered critical for student and program success. Research has shown both teachers and students in AVID schools agreed that student commitment and willingness to take part and to do the hard work was necessary (Guthrie & Guthrie, 2002).

Some teachers insist that the interview is a critical component in the student selection process—that is when you can really tell if the student wants to participate ...never sugar-coat AVID requirements in the interview. It's important to be up-front with students when describing the program. To maintain the discipline and work load that AVID requires, students have to be motivated from within. (Guthrie & Guthrie, 2002, p. 4)

Once enrolled in AVID, students were put on a course track of college readiness. The model focused student academic achievement through acceleration instead of remediation.

Teacher selection and participation. Like AVID students, AVID elective teachers volunteered to participate in the program. AVID teachers were central to ensuring a college and career readiness focus existed in the classroom and school environment (Watt, Huerta, & Mills, 2009, p. 4).

The AVID elective class is led by a teacher who's been trained in the program's methodologies...In this way, AVID students are supported in content-area classrooms as well as in the AVID elective, and even more students can benefit from the AVID program. (AVID, n.d.h., p. 2)

AVID site team members, who typically included a teacher, program leader, counselor and building principal, received training and resources through ongoing professional development (Huerta, Watt, & Alkan, 2008). Professional learning opportunities offered by AVID Center, the national AVID organization, included annual events such as summer institutes and the national conference, as well as ongoing events

such as coordinator workshops, site team conferences, data analysis training, and various leadership training sessions (AVID, n.d.a.).

Cited as one of the key ingredients to AVID's success...intensive, sustained professional development begins with AVID Summer Institutes held throughout the country. A team of eight teachers, administrators, and counselors from each AVID school attends the institute to learn how to use AVID techniques, strategies, and curriculum, as well as how to disseminate AVID philosophy and teachings to a schoolwide audience. Regional or district AVID directors then hold monthly workshops, meetings, and visitations to extend the knowledge base concerning AVID's curriculum to others who did not attend the Summer Institute, thus ensuring the integrity of AVID principles and safeguarding its effective school-wide implementation. (AVID, n.d.a., p. 61)

Program components and benefits. The AVID elective class was designed to be college preparatory, exposing students to an academic environment similar to that found in college classrooms. The curriculum was designed to guarantee that students graduated with the academic requirements for entrance into 4-year colleges. AVID teachers worked closely with students and parents to develop a four-year plan for high school that included rigorous courses such as honors and Advanced Placement (AP) level classes in core curricular areas including English, mathematics, and science. The AVID program also focused on developing critical skills including technical reading and writing such as completing college applications, standardized entrance exam preparation, and applying for financial aid (AVID, n.d.g.; Watt et al., 2009).

Sets of skills considered as non-academic measures of college readiness were also targeted by the AVID teacher and tutors in the AVID elective class (AVID, n.d.f.). Such skills were considered non-academic facets of college and career readiness in the sense that they were not directly measured through achievement tests of content knowledge (Conley, 2007). Non-academic facets of college readiness addressed through the AVID class included general skills and specific strategies. General skills addressed through AVID included note-taking, studying, presenting, organization and writing; building self-confidence, self-expectation; and increasing engagement in classes and other school activities. Specific strategies learned in the AVID class for increasing students' college success included Cornell notes, Socratic Seminars, tutorials, and yearly college visits (AVID, n.d.b.).

Pedagogy. The AVID class provided students the skills needed for success in high-school college preparatory classes through a core curriculum and specific teaching methodologies. Teachers trained in program curriculum and methodologies led AVID classes. Methodologies were included in the Program Components used in this study. The curricular foundation of AVID was built on WIC-R, an acronym for writing, inquiry, collaboration, and reading strategies. AVID lesson design included each component to provide a balanced learning experience for AVID participants (see Appendix G for complete explanations). Table 10 presents an explanation of the curricular foundation of AVID.

Table 10

WIC-R

Methodology		Explanation
W	Writing to learn	Clear communication; understanding concepts
I	Inquiry emphasis	Questioning to facilitate higher-order thinking
C	Collaborative approach	Students, teachers and tutors work together to ensure learning occurs
R	Critical reading	Close reading and higher-order thinking skills

Note. Adapted from “What is AVID?,” by AVID, n.d.h., p. 1.

Rigorous standards, Cornell note-taking, and Socratic Seminars completed the AVID curriculum. The AVID curriculum and pedagogy were designed to develop students into active classroom contributors and critical thinkers, important and necessary college readiness skills (AVID, n.d.d.). Through the targeted training and professional development from AVID, teachers received supporting

resources and are at the center of ensuring a classroom and school environment conducive to empowering students to become more responsible for their learning, while they themselves become more responsible not only for their teaching within the classroom but also for their leadership roles outside of the classroom. (Huerta et al., 2008, p. 61)

To support the AVID elective teacher and ensure core-practices of the AVID curriculum became embedded school-wide, AVID “created site teams of administrators and educators from different content areas, encouraging communication and sharing among teachers, counselors, and principals” (Taft Union HSD, 2013, para. 2).

Impact on general education experience. The responsibilities of school site AVID teams extended beyond their classrooms. AVID team members were expected to serve in leadership roles throughout their learning community. A goal for schools implementing AVID was “to expand the teaching strategies and methodologies used in the AVID elective classroom to all classrooms in the school, thereby creating schoolwide reform” (Watt, Powell, Mendola, & Cossio, 2006, p. 3). Site team members who were actively engaged in facilitating implementation and growth of the AVID experience throughout the learning community “received comprehensive professional development in order to use AVID’s teaching methodologies and curriculum to ultimately disseminate AVID strategies to all teachers in the school” (Watt et al., 2006, p. 5).

Research on AVID. A large internal database supported AVID as a successful CSRP focused on college readiness. “Since 2005, nearly 125,000 AVID students have graduated from high school [planning] to attend college. Of the 27,891 AVID graduates in 2011, 91% plan[ned] to attend a postsecondary institution; 58% in four-year institutions and 33% in two-year institutions” (AVID, n.d.d., para. 5). Statistics indicated the rate AVID students completed college entrance requirements as higher than the rate of non-AVID cohorts. Information from the AVID Senior Data Collection 2010-2011 “confirmed the average rate for six AVID states, including California, Texas, North Carolina, Illinois, and Florida ($n = 22,578$), at nearly 90% while the national average for all seniors was 36%” (AVID, n.d.b., paras. 9-10). Data by ethnicity for completion of four-year college entrance requirements by 2010-2011 seniors ($n = 27,891$) indicated “all ethnicity group rates at or above 84% compared to the overall percentage of U.S. 2010-2011 seniors below 50%, with three of the six reported ethnicity groups’ rates being 25%

or less” (AVID, n.d.b., para. 11). The “percent of 2010-2011 AVID seniors ($n = 27,783$) applying and being accepted to four-year colleges was 89% and 74%, respectively” (AVID, n.d.b., para. 3) (see Appendix H for a complete table of college entrance requirement completion rates for AVID and overall U.S. 2010-2011 seniors).

Numerous external studies have been conducted to determine the impact of AVID on student achievement; many investigated multiple measures to determine the program’s effectiveness including standardized test scores, high school grades or GPAs, and teacher or student perceptions (AVID, n.d.b., n.d.d.; Connors, 2010; Ford, 2010; Hale, 2006; Rorie, 2007). Fewer studies researched only standardized test scores as measures of the AVID program’s success (Lake, 2009). In most cases, these studies obtained mixed results and presented varied conclusions as to the impact of AVID on student achievement and college readiness.

Research with mixed results. Connors (2010) examined the relationship of student participation in AVID and academic performance; specifically the study was conducted to determine if there was a mean difference in student performance on the Florida Comprehensive Assessment Test (FCAT) in mathematics, reading, and writing between students who participated in the AVID program during their first two years of high school and students who had similar demographics (e.g., ethnicity, gender, and economic status) but did not participate in the AVID program for 2007-2009. (Connors, 2010, p. iii)

Connors (2010) matched AVID students with non-AVID students from six high schools in two central Florida school districts based on student demographics and tenth grade math and English courses. The results of the study were mixed; no statistically

significant differences existed between AVID and non-AVID students in scale score gains for the FCAT math and reading tests, but tenth grade AVID students performed significantly higher on the writing portion. Connors (2010) also found there were no statistically significant mean differences in reading or math based on any interactions of the demographic variables. While Connors (2010) concluded that overall AVID enrollment did not positively impact students' academic achievement as measured by the FCAT tests, it was acknowledged that the study revealed AVID students appeared to perform as well as the regular honors students on the mathematics and reading FCAT.

Ford (2010) studied the impact of AVID on closing the achievement gap. The study's location was in one high school, grades nine through twelve, in an urban northeast Texas school district. All demographic and academic data were obtained from the school database; a behavioral skills survey was administered to teachers to determine students' possession of cultural capital. Ford (2010) defined cultural capital as the student's possession of the knowledge and skills necessary to increase academic success in the classroom in an effort to close the gap in academic achievement. Ford (2010) addressed whether participation in AVID 1) increased student academic achievement as measured by Texas high school students' course grades, GPA, and the Texas Assessment of Knowledge and Skills (TAKS) results; and 2) impacted students' possession of the cultural capital of the dominant society as measured by "student possession of academic and behavioral skills that positively impact student achievement" (p. vii).

The study results showed non-AVID students were more successful academically than the AVID students; on all measures except the TAKS; AVID students' academic

performance was significantly lower than non-AVID students. There was no statistical difference between sub-groups on the TAKS. Ford (2010) reported

one-way ANOVA results showed there was a significant difference in possession of the cultural capital that positively impact academic performance in the classroom, such as ‘organized’, ‘put forth effort’, and ‘complete homework in a timely fashion’, between the AVID and non-AVID student groups (p. 86)

though teachers did not perceive AVID students possessed dominant culture social capital. Based on the mixed results, Ford (2010) concluded that though “there [was] strong evidence to support the positive effects of the AVID program on AVID participants for academic achievement and student possession of cultural capital” (p. vii), it was not possible to substantiate AVID’s impact on academic achievement.

Hale (2006) conducted a cross-sectional comparative study examining the 1) attitudinal disposition and perceptions of AVID program participants and non-AVID students’ beliefs and self-perceptions (esteem, efficacy, and personal beliefs), and 2) whether a difference existed between the attitudinal disposition and perceptions of high school AVID freshmen and AVID seniors. Hale’s (2006) study group included voluntary focus groups of underrepresented students in a California high school. Several surveys were administered to the focus groups to collect data: the Perceptions of Abilities of Assessment of Academic Self Concept & Motivational Scale; the Academic Self-Efficacy Scale; the Mentoring Scale; and the Cultural Congruity Scale. Though results showed mixed and varied responses on individual respondents’ surveys, Hale (2006) reported overall findings led to the conclusion the AVID program was doing what it set out to do. Hale (2006) cited evidence to support this conclusion including AVID students

1) believed the program benefited their academic self-concept and level of academic self-efficacy; 2) reported easily obtaining mentoring-type support such as getting information needed for success in college courses; 3) felt a sense of community and accountability, which led to increased academic achievement because students were more capable of maintaining friendships and willing to participate in study groups; and 4) held that the positive interactions between their teachers and peers led to a feeling of greater connectedness to peers and an overall sense of belonging.

Rorie (2007) used a quasi-experimental design to investigate the impact on high school students' achievement enrolled in AVID. The study involved matched groups of AVID and non-AVID students in grades 9-12 from Pine View School District, a suburban Colorado district. All students graduated from one of four high schools in 2005 or 2006. Scores in reading, math, and writing from the ninth and tenth grade Colorado Student Assessment Program (CSAP), the tenth grade PLAN assessment, and the eleventh grade Colorado edition of the ACT (COACT) were compared to determine if AVID students outperformed non-AVID students in the same junior year cohort (Rorie, 2007). Grade point averages were used to examine the effectiveness of the AVID program in raising overall achievement. Results of the study varied depending on the measure used to determine academic impact and program effectiveness. Rorie (2007) expected AVID students to outperform non-AVID students on all content tests examined "because of the extensive support and intense concentration on these...skills" (p. 127). However, the standardized test results indicated both groups performed statistically similarly on all three content assessments. Rorie (2007) concluded that the lack of differences on standardized tests was attributable to several variables including 1) the

maturity of the AVID program in the Pine View School District, 2) the program benefits of AVID had been realized by students across classes, and 3) the schools had become “AVID-ized,” meaning the AVID practices had become systemic throughout each high school as well as across the Pine View School District (p. 130).

Results supported Rorie’s (2007) expectation that AVID student’s overall performance in high school classes would be significantly higher than the non-AVID students as evidenced by twelfth-grade non-weighted GPAs. Further evidence of AVID’s impact on overall academic performance cited by Rorie (2007) was that AVID students “successfully participated in more honors, AP, and International Baccalaureate (IB) courses than their non-AVID counterparts” (p. 127). Rorie (2007) concluded 1) AVID improved students’ approach to school and performance in classes and 2) “the central mission of AVID - to prepare students for college entrance and college level academic work - [had] been accomplished” (p. 133).

Research with single results. Lake (2009) conducted a quantitative study to evaluate the impact of AVID on academic achievement of ninth graders enrolled in AVID during the 2007-2008 school year. Reading and math achievement were determined by analyzing students’ fall 2007 and spring 2008 MAP scores. Writing achievement was determined using district writing assessment scores from spring 2007 and spring 2008. The data needed to conduct the study was obtained from the district electronic student information system; all data were collected by an employee of the district. Lake (2009) conducted a *t* test for independent means to test the research hypotheses. “Results...showed no statistical difference in student achievement in the academic domains of reading, writing, and mathematics between the students enrolled in

the AVID program and those students who chose not to enroll in the AVID program” (p. 1). Lake (2009) concluded no relationship existed between student participation in the AVID program and academic success as measured by the MAP reading and math tests and the district writing assessment.

Summary

This chapter provided a literature review of comprehensive school reform (CSR) as a catalyst for high school intervention programs. The review of literature explained the impact of the Comprehensive School Reform Program (CSRP) found in the No Child Left Behind (NCLB) federal law and discussed the condition of secondary education in United States’ high schools. The discussion of secondary education included research-supported suggestions for bringing high schools into the 21st century to meet the needs of students. Three exemplary secondary CSRPs were presented with evidence to support exemplar categorization: Expeditionary Learning (EL), High Schools That Work (*HSTW*), and Advancement Via Individual Determination (AVID). An overview of the program design and research related to EL and *HSTW* was followed by a comprehensive discussion of the AVID model. Information on the AVID model included theoretical foundations and early development; the process of student identification and requirements for participation; teacher selection and participation; curriculum design and instructional pedagogy; an overview of the AVID program and benefits; and implications on general education in AVID schools. Finally, studies supporting and/or challenging the efficacy of AVID as an effective CSR intervention program were provided. The research on AVID presented in this literature review was both internal and external to the national

AVID Center; four of the five external studies included multiple measures to test research hypotheses and presented mixed results.

The findings from the review of literature indicated CSR programs such as EL, *HSTW*, and AVID successfully served as college and career readiness programs. However, the research on AVID was heavily, yet understandably, skewed toward schools and school districts with large populations of characteristically underserved students. Only two studies, Rorie (2007) and Lake (2009), were located in suburban districts with relatively small percentages of minority students and students from low socioeconomic families. This review of literature provided the rationale to conduct further research on the impact CSR programs have on students' college and career readiness in districts with student populations that are in large part non-minority and from homes in middle to high socioeconomic levels. The next chapter provides a detailed overview of the methodology used in this research.

Chapter Three

Methods

The purpose of this study was to analyze the relationships between enrollment in AVID and the academic and non-academic facets of college readiness as measures of the success of Advancement Via Individual Determination (AVID). The study included academic measures and non-academic facets of postsecondary readiness as indicators of the program's success identified by the program publishers. The methodology used to determine AVID's success is explained within this chapter. This chapter is organized into five sections: (a) the study's research design, including a discussion of the population, sample, and sampling procedures; (b) instrumentation, measurement, and validity and reliability; (c) data collection procedures; (d) data analysis and hypothesis testing; and (e) limitations of the study.

Research Design

This study was a quantitative, non-experimental research design with AVID enrollment status as the independent variable. The academic achievement dependent variables were measured using students' scores on the PLAN, ACT, and KCA math and reading assessments, and high school grade point average (GPA). At the time of this study, KCA was used by the KSDE to determine AYP status for Kansas students and schools. AYP, mandated by the 2001 authorization of NCLB, was a school's yearly progress toward achieving state academic standards (Kansas Parent Information Resource Center, n.d.). Non-academic achievement variables, which were measured using the student survey, were used in this study to determine the AVID students' perceptions of

the impact of the program's components and benefits on non-academic facets of college readiness.

Population and Sample

The population of interest was comprised of students from all District X high schools in grades 9 through 12 who satisfied the criteria for enrollment in AVID as an elective course in 2008-2009, 2009-2010, 2010-2011, and 2011-2012. There were two groups within the sample: students enrolled in the AVID course and students who opted not to enroll in the AVID course. The groups were labeled as participants and non-participants.

Sampling Procedures

Accessing the District X Student Information System (District X SIS) and District X Data Warehouse (District X DW) made it possible to use purposive sampling, because the information about students who satisfied the AVID eligibility criteria was readily available (Bennett, Briggs, & Triola, 2003). The District X SIS database listed enrollment and grade level information for each District X high school student. Four hundred and six students eligible to enroll in AVID between 2008-2009 and 2011-2012 were selected for this study.

Instrumentation

Measurement of academic achievement was obtained from the most recent available scores on four standardized tests. These tests included the PLAN, ACT, KCA math, and KCA reading. Students' most recent non-weighted cumulative semester GPAs were also obtained. A survey was administered to students enrolled in AVID to collect data for the dependent variable of students' perceptions of the impact of the AVID

program on college readiness. Information obtained from the publishers of AVID was used to develop the survey topics (AVID, n.d.a; n.d.e.). The following sub-sections describe the overview of the measurement, reliability and validity, and specific information for tests used in this study.

Standardized tests. A test is considered standardized when multiple forms have the same standard for questions, administration, scoring, and interpretation (Christensen, n.d.). A primary feature of standardized tests is the consistency of the items. Items are usually multiple-choice; however, Christensen (n.d.) noted that although not as common, some standardized tests contain performance-type extended response items such as essays and short-answer. Performance-type extended response items remain standard by presenting the same prompts in all forms of the test. Examples of standardized tests containing performance items include the optional writing portion of the ACT trilogy, which includes the EXPLORE, PLAN, and ACT tests (ACT, 2011b), and the KCA writing test that was administered to all Kansas students in grades 4, 7, and 11 prior to 2013 (KSDE, 2010).

Standardized tests are usually *norm-* or *criterion-referenced*. A norm-referenced test compares all students taking the same test. Students receive a percentile score that compares their raw score ranking to all others taking the given test. For example, a student receiving a percentile score of 80 means the student performed better than 80% of students taking that particular test (Christensen, n.d.). A grade-equivalent is also provided on some norm-referenced tests. A grade-equivalent reports the student's score as it relates to the average of students in a given grade. For example, "a score of 6.5

means the student scored as high as average sixth graders” in the fifth month of the sixth grade school year (Christensen, n.d., para. 3).

Unlike norm-referenced tests, which rank peers within a testing cohort, criterion-referenced tests measure how well the test-taker meets an identified standard or specific level of performance (Christensen, n.d.). For example, if a student scores 8 out of 10 on a criterion-referenced test, this would demonstrate 80% mastery of the tested material. An example of a criterion-referenced test is the Dynamic Measures of Basic Early Literacy Skills (DIBELS). DIBELS is based on benchmarks and a “set of procedures and measures for assessing the acquisition of early literacy skills...designed to be...used to regularly monitor the development of early literacy and reading skills” (Good & Kaminski, 2009, para. 1).

Validity and reliability. Validity and reliability of measurement instruments used in a study are critical. Instruments must be reliable and valid; reliability is necessary for validity (Lunenburg & Irby, 2008). Reliability “refers to whether scores for items on an instrument are internally consistent...stable over time...and whether there was consistency in test administration and scoring” (Creswell, 2009, p. 233). Validity is “the degree to which an instrument measures an intended content area” (Lunenburg & Irby, 2008, p. 181). Evidence of reliable tests includes (1) groups taking the test at different times receive the same results as the test sample normed group, (2) absence of construction errors, and (3) no major inconsistencies in performance (Christensen, n.d.).

Each of the standardized test instruments used in this study to determine impact on academic achievement was determined to consistently measure what each was intended to measure. The validity and reliability of standardized test instruments were

established by the publisher of the given tool. The instruments used to collect non-standardized test data for this study were determined to measure what each was intended to measure with the exception of GPA, which is discussed in the GPA sub-section of this chapter. The following sub-sections describe the instrumentation, measurement, reliability, and validity of each instrument.

PLAN and ACT. The PLAN and ACT tests were part of an integrated series of standardized assessments labeled ACT's Educational Planning and Assessment System (EPAS™), which is published by ACT, Inc. (2007). Benchmark scores for college readiness were provided for the content areas in all EPAS™ tests. Benchmark scores were used to determine whether a student was on track for meeting college readiness standards. Composite data could be derived from individual test subject scores (ACT, Inc., 2007). Students' composite scores on the PLAN or ACT were used as a data source to determine the academic impact of enrollment in AVID.

ACT, Inc.'s (2007) test development procedures included "an extensive review process with each item being critically examined at least sixteen times" (p. 62). Content and statistical specifications were used in developing the PLAN and ACT tests. To ensure that scale scores were comparable, content specifications were used to keep the year-to-year structure of EPAS™ tests as similar as possible (ACT, Inc., 2007). In addition, specific characteristics of test items were reviewed regularly; consultants reviewed all versions of each test to verify content accuracy and alignment to content specifications. The general content of the tests remained constant, but specific types of items may have changed (ACT, Inc., 2007).

Additionally, statistical specifications governed the level of difficulty and acceptable level of discrimination. ACT, Inc. (2007) intentionally selected the distribution of item difficulty with a target mean of .58 and range of difficulty approximately .20 to .89. This target and range of difficulty allowed for effective differentiation across a wide range of student achievement levels. ACT, Inc. (2007) reported that the standard error of measurement for any particular ACT test score or sub-score was approximately the same for low-scoring examinees as it was for high-scoring (p. 49). Based on an approximately normal distribution of error, users of ACT test data could expect that close to two-thirds of students taking the test would be mismeasured by less than one standard error of measurement (ACT, Inc., 2007).

Measurement. The EPAS™ tests measured the academic skills students needed to successfully complete college level work. Specifically, EPAS™ tests were “designed to determine how skillfully students solved problems, grasped implied meanings, drew inferences, evaluated ideas, and made judgments in subject-matter areas important to success in college” (ACT, Inc., 2007, p. 3). The primary format of EPAS™ tests was multiple-choice; each test measured academic achievement in the core content areas of English, mathematics, reading, and science. Each EPAS™ test was curriculum-based. The assessments measured what students knew about and were able to do with the content and skills of the tested standards; they did not measure “abstract qualities such as intelligence or aptitude” (ACT, Inc., 2007, p. 1).

The EPAS™ tests were scored on the same composite scoring scale ranging from 1 to 36 but had different maximum scores (ACT, Inc., 2007). Figure 5 illustrates the overlap of score ranges between the three EPAS™ tests. A common scale score made it

possible for school communities to use the EPAS™ formatively, “to measure students progressive development of knowledge and skills in the same four academic areas” (ACT, Inc., 2007, p. 17) throughout the students’ secondary experience.

Figure 5. Score Ranges for EPAS™ Tests

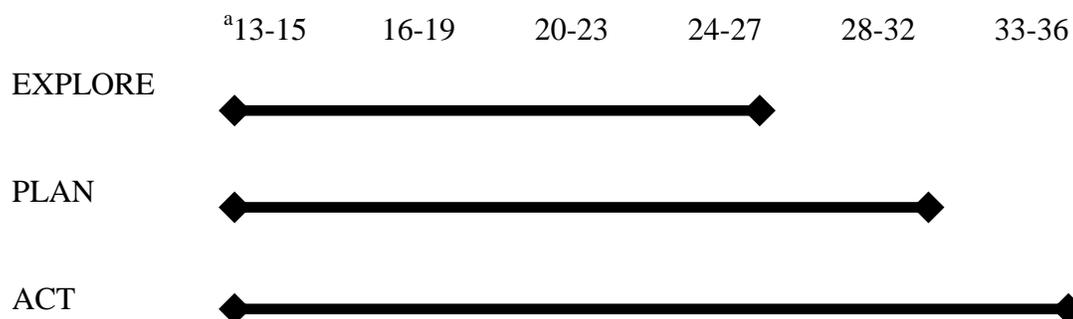


Figure 5. Illustration of the ^ascore ranges for EPAS™ tests. The first four score ranges apply to scores for all three tests; the fifth score range applies only to PLAN, while the sixth applies only to ACT. Adapted from “ACT Technical Manual,” ACT, Inc., 2007, p. 18. Copyright 2007 by ACT, Inc.

The ACT College Readiness Benchmarks were the minimum EPAS™ test scores required for students to have a high probability of success in first-year, credit-bearing college courses (ACT, Inc., 2007, p. 36). The significance of EPAS™ benchmark scores was explained in the ACT technical manual (ACT, Inc., 2007).

In addition to the Benchmarks for the ACT, there are corresponding...PLAN Benchmarks for use by students who take these programs to gauge their progress in becoming college ready in the...tenth grade. Students who meet a Benchmark on the ACT have approximately a 50% chance of earning a B or better and approximately a 75% chance or better of earning a C or better in the corresponding college course or courses. Students who meet a Benchmark on ...

PLAN are likely to have approximately this same chance of earning such a grade in the corresponding college course(s) by the time they graduate high school. (p. 24)

See Table 11 for the PLAN and ACT benchmarks in English, math, and reading.

Table 11

EPAS™ College Readiness Benchmark Scores

Subject Area	College Course	PLAN	ACT
English	English Composition	15	18
Math	College Algebra	19	22
Reading	College Social Sciences	17	21

Note. Adapted from “ACT Technical Manual,” by ACT, Inc., 2007, p. 127.

Validity and reliability. Content validity has been established for the EPAS™ tests in measuring educational achievement including “[three] of the most common interpretations and uses” (ACT, Inc., 2007, p. 62) of the ACT and PLAN relevant to this study. Table 12 summarizes each area of content validity. Interpretations and uses relevant to this study included measuring collegebound students’ educational achievement in particular subject areas, evaluating the effectiveness of high school college preparatory programs, and evaluating students’ probable success in the first year of college and beyond (ACT, Inc., 2007). The ACT, Inc. Technical Manual (2007) provided an in-depth discussion of validity evidence for all uses of EPAS™ scores.

Table 12

EPAS™ Validity Evidence

Area	Study Results	Argument
College readiness benchmarks	High school courses are more important than short-term test preparation.	EPAS™ are valid measures of educational achievement based on increases in average scores as students' progress through high school.
Probable college success	Mean scores for collegebound students are higher than for the national study group.	Valid as predictor of college success, because students with higher aspirations and grades earn higher scores on ACT.
High school grades	Grades are relative due to variability between schools.	Validity as predictor of college readiness is improved when combined with ACT scores.

Note. Adapted from “ACT Technical Manual,” by ACT, Inc., 2007, pp. 62-91.

The reliability of multiple forms of ACT tests was established using equipercentile equating methodology. In equipercentile equating, a score on Form X of a test and a score on Form Y are considered to be equivalent if they have the same percentile rank in a given group of examinees (ACT, Inc., 2007). The conversion tables resulting from this process were used to transform raw scores to scale scores on new forms of EPAS™ tests as they were added to the ACT test collection. Table 13 presents summary correlations for scale score reliability and average standard errors of measure (SEM) for the reading, math, and composite scores for ACT tests.

Table 13

ACT Reliability Summary Statistics

Test	Scale Score Reliability			Average SEM		
	Median	Min.	Max.	Median	Min.	Max.
Mathematics	.91	.89	.91	1.71	1.65	1.79
Reading	.85	.85	.87	2.18	2.11	2.26
Composite	.77	.76	.78	1.75	1.67	1.89

Note. Adapted from “ACT Technical Manual,” by ACT, Inc., 2007, p. 59.

Data were obtained by ACT, Inc. through systematic sampling of 2,000 examinees during the 2005-2006 national administration of each test and sub-test. The composite score was equated using “a rounded arithmetic average of the scale score for the four [multiple-choice] equated tests” (ACT, Inc., 2007, p. 49). The data provided evidence that reliability for the composite of all tests was acceptable to strong; coefficients above .90 are strong evidence for a reliable test, and above .70 are acceptable (George & Mallery, 2003).

The ACT tests were designed to measure students’ problem-solving skills and knowledge in particular subject areas... The usefulness of EPAS™ test scores for measuring students’ problem-solving skills and subject area knowledge “provide[d] the foundation for validity arguments for more specific uses. (ACT, Inc., 2007, p. 62)

Kansas Computerized Assessment (KCA). Student scores on the KCA math and KCA reading tests supplied additional information regarding academic achievement within this study’s sample. This data were used in this study when considering each sub-groups’ collegereadiness based on academic measures. Kansas state assessments were

norm-referenced tests administered between 2006 and 2013 to Kansas students in grades 3 through 11 and were used to measure student, school, and district progress toward meeting AYP targets (KSDE, 2013).

Kansas students took the KCA reading and math tests once during high school, in grade 9, 10, or 11; the testing year was determined by each Kansas school district (KSDE, 2011). High school students were given the Opportunity to Learn (OTL), which allowed students scoring below proficiency to have their scores “banked” by the school district for that testing year. A banked score was not reported to the state as counting towards AYP. This gave the student an opportunity to retake the test the next school year. A student’s highest score of the two testing years was recorded by the state and counted toward school and district AYP (KSDE, 2011). This study utilized students’ scores from the 2009, 2010, 2011, and 2012 testing cycles.

The KCA tests were developed following universal design guidelines (KSDE, 2011). Thompson et al. (2002) explained universal design assessments as tests that are designed and developed from the beginning to allow participation of the widest possible range of students, and to result in valid inferences about performance for all students who participate in the assessment. Universally designed assessments add a dimension of fairness to the testing process. (para. 14)

Thompson et al. (2002) explored the application of the universal design principle to large scale assessments. The universal design principle included the following seven elements guiding large-scale assessment design: (1) inclusive assessment population; (2) precisely defined constructs; (3) accessible, non-biased items; (4) amenable to accommodations;

(5) simple, clear, and intuitive instructions and procedures; (6) maximum readability and comprehensibility; and (7) maximum legibility.

Measurement. All Kansas general assessments measured students' mastery of the content-specific curriculum. The state curriculum was organized in a framework of standards, benchmarks, and indicators. The levels of the framework were defined by the Kansas Parent Information Resource Center (n.d.) as:

- Standard: Subject matter benchmarks to measure students' academic achievement. (p. 15)
- Benchmark: A detailed description of a specific level of student achievement expected of students at particular ages, grades, or developmental levels. (p. 4)
- Indicator: A learning outcome. (p. 14)

The high school mathematics test assessed students' knowledge and skills associated with indicators contained in the state standards: *Numbers and Computation, Algebra, Geometry and Data* (see Appendix I for details of the standards and indicators assessed on the high school mathematics test). KCA reading test items included reading selections representing narrative, expository, technical, or persuasive text types (see Appendix I for details of the standards, benchmarks, and indicators assessed on the high school reading test).

To determine student, school, and district progress toward meeting AYP targets, students' scores were calculated on a 0–100 point scale. The scale was divided into five performance levels: *Exemplary, Exceeds Standards, Meets Standards, Approaches Standards, and Academic Warning*. The range of each performance level varied by tested content and grade level (Poggio et al., 2007). Each performance level was determined by

a cut-score, which was the lowest percentage of correct answers a student could score on a given level and included a description of what a student independently knew and was able to do regarding the tested content and skills (KSDE, 2011) (see Appendix J for the 2011 KCA reading and math high school grade level score ranges and descriptors of each performance level).

Validity and reliability. The benchmark standard setting cohorts also evaluated the test structure validity based on samples of students who were administered the 2006 KCA reading and math tests. The grade-level cohorts examined the criterion-related validity of test scores. Criterion-related validity was established by determining the degree to which examinees' performance on a test correlated at expected levels with one or more outcome criteria, including the KCA formative assessment system. The formative assessment system was “designed to provide feedback regarding whether a student ha[d] mastered particular content standards during the course of instruction” (Poggio et al., 2007, p. 76). The coefficient for the predictive function of the high school mathematics test forms was .82; the coefficient for all reading test forms was .83 (Poggio et al., 2007). The results of the predictive validity study showed that both KCA test scores were systematically related to the formative assessment system. These results provided evidence to support the validity of 2006 KCA scores and for making inferences about a student’s current or future performance on other indicators or criteria (Poggio et al., 2007).

The battery of KCA tests used for this study was first administered in 2006. The scores collected by Poggio et al. (2007) during the spring of 2006 served as the baseline for the cycle of state assessments ending in 2014. All KCA test items were randomly

distributed through multiple test forms; all test forms at a grade level were constructed to the same content and statistical specifications; the number of items on a test form varied by grade level. Table 14 shows the reliability coefficients for all forms of the high school reading and math state assessments. The reliability coefficients for all forms were acceptable for the purpose of equating comparable scores across multiple test forms (Poggio et al., 2007).

Table 14

Descriptive Statistics for Equating KCA Reading by Test Form

Reading			Mathematics		
Form	<i>N</i>	Reliability	Form	<i>N</i>	Reliability
592	9614	0.93	590	11106	0.95
480	5766	0.93	590	4966	0.95
581	5748	0.93	702	4816	0.95
582	5899	0.92	719	4852	0.94
583	5709	0.92	720	4881	0.94
			721	4848	0.95

Note. Adapted from “Technical Manual for the Kansas General Assessment, Kansas Assessments of Multiple Measures, Kansas Alternate Assessments,” by A. Poggio, X. Yang, P. Irwin, D. Glasnapp, & J. Poggio, 2007, p. 71.

Following the 2005-2006 testing dates, researchers from the Center for Education Testing and Evaluation (CETE) worked with Kansas Department of Education (KSDE) to convene a benchmark standard setting cohort, i.e., a representative group of Kansas educators, for each tested content area at each tested grade level. The CETE researchers co-facilitated the cohort work. The cohorts were trained to conduct test-item analysis and

establish performance level cut-scores. Based on a portion of the cohort work, all reliability coefficients were greater than .90. This indicated sufficient reliability for equating across multiple forms of each test (Poggio et al., 2007).

Cohorts also used test scores from each content test form to conduct reliability analyses for performance level classification. Two indices, consistency index and classification category index, were used for reliability analyses. Table 15 shows classification indices by cut-points for high school tests in mathematics and reading.

Table 15

KCA Classification Indices

^a Cut-point	Reading		Mathematics	
	Accuracy	Consistency	Accuracy	Consistency
1/2345	0.99	0.99	0.93	0.91
12/345	0.98	0.97	0.94	0.91
123/45	0.95	0.93	0.96	0.94
1234/5	0.90	0.85	0.97	0.96

Note. Adapted from “Technical Manual for the Kansas General Assessment, Kansas Assessments of Multiple Measures, Kansas Alternate Assessments,” by A. Poggio, X. Yang, P. Irwin, D. Glasnapp, & J. Poggio, 2007, p. 101.

^aCut-points were 1 = *Academic Warning*, 2 = *Approaches Standard*, 3 = *Meets Standard*, 4 = *Exceeds Standard*, and 5 = *Exemplary*.

The consistency index for performance category classification measured the alignment level between parallel test forms; the classification accuracy index measured how closely observed cut-score classifications approximated classifications based on true cut-scores (Poggio et al., 2007). Poggio et al. (2007) reported generally high levels for

reliability of classification for both mathematics and reading. These results were evidence that classification reliabilities were acceptable.

AVID Student Survey. The AVID survey data were used to measure the variable of students' perception of the impact of AVID enrollment on college readiness. Survey items were developed in 2011 by the researcher with the District X statistician and program evaluator. The District X program evaluation department used some data collected by the survey to develop an internal report on the overall status of the AVID program.

The survey was administered to AVID students using SurveyKey.com and completed during AVID class time. The survey contained four closed-response sections: (1) Program Components, (2) Program Benefits, (3) Impact on General Education, and (4) Demographics. The nine Program Components and 10 Program Benefits, and the accompanying prompt stems included on the survey are listed in Table 15. The student responses from the Impact on General Education were not used in this study. Students were also provided an open-ended space at the end of the survey for typing further comments or suggestions about AVID; these comments were not used in this study (see Appendix L for the complete AVID student survey).

Table 16

Sections One and Two of AVID Student Survey

Category	Stem	Components
Program Components	Please indicate how helpful each of the following components has been in preparing you for college success.	Cornell Notes Socratic Seminars Tutorials Tutors College visits and research ACT/SAT prep Push from AVID teacher Staying with same classmates Staying with same teacher
Program Benefits	Please indicate the degree to which you think you have improved in each of the following areas.	Note-taking skills Test-taking Writing skills Presentation skills Study skills Self-confidence Self-expectation Self-discipline Self-advocacy Engagement

Note. Adapted from “District X Avid Student Survey,” by District X, 2011, pp. 1-2.

Measurement. The survey was used to measure students’ perceptions of the impact of the AVID experience on measures of non-academic facets of college readiness. Students’ responses on Sections 1, 2, and 4 were analyzed for this study. Section 3 collected information specific to District X teacher practices and was not analyzed for this study. Section 2 measured students’ perceptions of the impact of AVID Program Components on their readiness for college and the factors associated with Program Benefits were related with students’ perceived improvement.

The Program Components and Program Benefits categories each listed specific subareas on a Likert-type scale. For each subarea within a given category, students were

asked to select from the scale labels that most closely described their perception of the impact of the AVID program: the Program Components scale labels were 4 = *Very Helpful*; 3 = *Fairly Helpful*; 2 = *Of Limited Help*; 1 = *No Help At All*; and 0 = *Not Sure*. Scale labels for Program Benefits were 5 = *A Great Deal*; 4 = *Much*; 3 = *Somewhat*; 2 = *Little*; and 1 = *None*. The results of two closed response survey items from Section 4 of the survey were used in this study: one asked students to identify their level in high school (freshman, sophomore, junior, or senior); a second asked students to identify the number of years enrolled in AVID (one, two, three, or four).

Validity and reliability. The construction of the survey reflected AVID's classification of non-academic facets of college readiness skills as Program Components and Program Benefits (AVID, n.d.f.). A team of people, including the District X program director for AVID and the District X statistician/program evaluator, reviewed the survey. The feedback provided by the team allowed the researcher to establish the content validity of the survey items used in the data collection. Based on the feedback, the researcher made minor changes to the survey items to improve their clarity.

Reliability of the survey was established during the data analysis phase of this study. Internal consistency estimates using Cronbach's alpha demonstrated high coefficients for the Program Components and Program Benefits, $\alpha = .797$ and $\alpha = .937$, respectively. Overall, the survey demonstrated high internal consistency, $\alpha = .927$.

Grade point average (GPA). Each student's most current non-weighted cumulative semester GPA was included in the data analysis. GPAs provide information about academic achievement as measured by course instructors. A student's GPA is the average of course grades for "a particular period, usually on a scale of 1 to 4.0, with 4.0

being the best” (Cambridge University Press, 2013, para. 1). The data were used in this study to provide a third measure of academic achievement related to the AVID enrollment status variable. Students’ final unweighted cumulative semester GPAs were provided by the District X Director of Assessment and Research who obtained the data through the District X SIS in May 2013.

Measurement. Student academic performance and behavior were assessed and reported to parents regularly in District X. The district maintained a common district wide grading system; teachers were primarily responsible for students’ assessment and parent communication (District X, 2000). District X Board Policy 3310 specified guidelines for assigning student grades and calculating GPAs (District X, 2000):

[High school] grades shall reflect the end product of a grading period and shall be recorded in the student’s cumulative record. Teachers shall be strongly encouraged to assess student progress at interim points during the grading period and to report the results to parents and students. A letter grading system of A, B, C, D, F, and I shall be used. Some courses may be graded for credit or noncredit and as pass or fail; such courses shall not count towards the student’s cumulative grade point average, but shall count towards graduation credits earned. Plus and minus indicators may be used to reflect more accurately a student’s academic achievement. (p. 1)

Validity and reliability. Research is mixed regarding the validity of using high school grades and GPAs as indicators of college readiness. Geiser and Santelices (2007) found “high-school grade point average (HSGPA) is consistently the best predictor not only of freshmen grades in college...but of four year college outcomes as well” (p. 1).

Geiser and Santelices (2007) concluded that one reason for this finding may be the similarities between HSGPA and cumulative college GPA. These similarities included the fact that both measures are calculated on many courses taken over a span of years and that they are based on similar academic experiences, such as quizzes, term papers, and summative exams (Geiser & Santelices, 2007).

A number of authors have claimed that the inconsistency of core course grading made it impossible to determine the validity and reliability of grade point averages (Allen, 2009; Guskey, 2007; Marzano, 2006; O'Connor, 2007). Because of possible issues with the validity and reliability of grades, this study included multiple forms of academic achievement measures.

Issues with course grades included potential inconsistencies such as grading being dependent on the teacher or other educator scoring tests, quizzes, or assignments that measure what a student knew or was able to do (Marzano, 2006); the fact that there were multiple purposes for grading (Guskey, 2007); and the inability of grades to truthfully communicate a student's level of achievement (Allen, 2009). ACT, Inc. (2007) directly addressed the issue:

The courses students take in high school and the grades they earn are also measures of educational achievement, but these variables are not standardized measures. They cannot be standardized because course content varies considerably among schools and school districts, and grading policies certainly vary among instructors. Therefore, while high school courses taken and grades earned are measures of educational achievement, their interpretation should

properly take into account differences in high school curricula and grading policies. (p. 62)

Data Collection Procedures

The researcher submitted a formal request to conduct research in District X. This request was approved in December 2011 (see Appendix M). Upon receiving the district's approval, a proposal for research was submitted to Baker University's Institutional Review Board. Approval for research was granted in March 2013 (see Appendix M). The academic achievement data for this study was collected in May 2013. Student data were obtained from the District X SIS and the District X DW. This data were used to create an Excel spreadsheet containing the District X student ID numbers for each of the 189 AVID student participants and the 217 non-participating students. Each student's composite scores for the PLAN and ACT tests were included on the spreadsheet. The spreadsheet also included students' performance levels on the most recent KCA reading and math tests. Finally, students' most recent GPAs were obtained. Survey data were collected by District X from AVID students in April 2011. AVID students' perceptions of Program Components, Program Benefits, year in high school, and the number of years enrolled in AVID were input into an Excel spreadsheet. The data were input into IBM® SPSS® Statistics Faculty Pack 21 for Windows for analysis.

Data Analysis and Hypothesis Testing

Lunenberg and Irby (2008) have characterized data analysis as a critical “component of any research study” (p. 62) and the research questions or hypotheses as the “directional beam of the study” (p. 126). The following research questions,

hypotheses, and statistical tests were used to analyze the relevant data. All hypotheses were tested using a significance level of $\alpha = 0.05$.

RQ1. To what extent does participation in AVID impact academic measures of college readiness?

H1. There is a difference in college readiness, as measured by the PLAN, between students who participate in AVID and those who do not.

H2. There is a difference in college readiness, as measured by the ACT, between students who participate in AVID and those who do not.

H3. There is a difference in college readiness, as measured by the KCA reading test, between students who participate in AVID and those who do not.

H4. There is a difference in college readiness, as measured by the KCA math test, between students who participate in AVID and those who do not.

H5. There is a difference in college readiness, as measured by GPA, between students who participate in AVID and those who do not.

Data were analyzed using an independent-samples *t* test for each of the hypotheses. This test was selected because it is used to compare the means of two groups (Steinberg, 2008). The group means compared for these hypotheses included participants and non-participants in the District X AVID program.

RQ2. What are AVID students' perceptions regarding the impact of the non-academic facets of college readiness?

H6. AVID students perceive Program Components as helpful.

H7. AVID students perceive themselves improved in Program Benefits.

Data were analyzed using a chi-square test of equal percentages for each of the hypotheses. A chi-square test of equal percentages “is a convenient technique for determining the significance of the difference between the frequencies of occurrence in two or more categories with two or more groups” (Key, 1997, para. 1). A chi-square test of equal percentages was used in this study to determine the relationship between the non-academic facets of college readiness and the students’ perceptions of the level of helpfulness of Program Components and the degree to which students perceive themselves improved in Program Benefits.

RQ3. To what extent do relationships exist between the number of years students are enrolled in AVID and their perceptions of the level of helpfulness of Program Components and their degree of improvement in Program Benefits?

H8. There is a relationship between the number of years a student is enrolled in AVID and the student’s perception of the helpfulness of Program Components.

H9. There is a relationship between the number of years a student is enrolled in AVID and the student’s perception of the degree of improvement in Program Benefits.

Pearson product-moment correlation coefficients were calculated to index the strength and direction of the relationship between the number of years a student is enrolled in AVID and the student’s perception of the helpfulness of Program Components, and the relationship between the number of years a student is enrolled in AVID and perception of the degree of improvement in Program Benefits. A Pearson product-moment correlation “is a measure of the linear relationship between two variables that have both been measured on at least an interval level” (Steinberg, 2008, p.

401). A one-sample t test was conducted to test for the statistical significance of the correlation coefficients.

RQ4. To what extent do relationships exist between students' grade levels in high school and their perceptions of the level of helpfulness of Program Components and their degree of improvement in Program Benefits?

H10. There is a relationship between a student's grade level in high school and the student's perception of the helpfulness of Program Components.

H11. There is a relationship between a student's grade level in high school and the student's perceptions of the degree of improvement in Program Benefits.

Pearson product-moment correlation coefficients were calculated to index the strength and direction of the relationship between a student's grade level in high school and that student's perception of the helpfulness of Program Components, and the relationship between the number of years a student is enrolled in AVID and that student's perception of the degree of improvement in Program Benefits. A one-sample t test was conducted to test for the statistical significance of the correlation coefficients.

Limitations

Lunenburg and Irby (2008) described limitations as factors that were not under control of the researcher but "may have an effect on the interpretation of the findings or generalizability of the results" (p. 133). The limitations of this study are described in this section. Each District X high school has an administrator or counselor who might interpret and adapt the District X guidelines for the AVID student identification process differently. Some teachers assigned to teach AVID classes have changed from year to year. AVID teachers receive different initial and ongoing professional development. The

success of the implementation of the AVID program might vary across district high schools. District level understanding and support of the AVID program has improved during the five years of program implementation in District X. Components of the AVID program implementation vary from high school to high school and teacher to teacher (District X Executive Director School Administration, personal communication, February 28, 2012).

Summary

Chapter three included information concerning the method of this quantitative, non-experimental study, which was designed to determine to what extent relationships exist between (a) enrollment status in the Advancement Via Individual Determination (AVID) program and academic achievement; (b) number of years enrolled in AVID and students' perceptions of Program Components and Program Benefits; and (c) AVID students' grade level in high school and their perceptions of Program Components and Program Benefits. Data were collected using the District X Student Information System, the District X Data Warehouse, and through voluntary online surveys developed for AVID students. Limitations of the study were also discussed in this chapter. Chapter four contains the results of the analysis of this data.

Chapter Four

Results

The purpose of this study was to analyze the relationships between enrollment in AVID and the academic and non-academic facets of college readiness as measures of the success of Advancement Via Individual Determination (AVID). Academic achievement impact was measured by comparing the most recent scores on the PLAN, ACT, KCA reading and math tests, and GPA between two groups: participants and non-participants in AVID. This study also sought to determine the impact of AVID on non-academic facets of college readiness.

Finally, this study sought to determine the extent to which a relationship existed between the number of years students were enrolled in AVID and their perceptions of the level of helpfulness of Program Components, and their degree of improvement in Program Benefits. A survey was administered to AVID students to collect data on the perceived impact on non-academic facets of college readiness. This chapter presents a summary of the data collected, the statistical analyses, and the results of the hypothesis tests conducted to address the four stated research questions.

Descriptive Statistics

The population of interest for this study was comprised of students from all District X high schools in grades 9 through 12 who satisfied the criteria for enrollment in AVID as an elective course in 2008-2009, 2009-2010, 2010-2011, and 2011-2012. There were two groups within the sample: students enrolled in the AVID course and AVID eligible students who opted not to enroll in the AVID course. The groups were labeled as

participants and non-participants. Overall, 406 students eligible to enroll in AVID were selected for this study, with 189 participants and 217 non-participants.

Table 17 displays participants' and non-participants' mean scores, standard deviations, and sample sizes by each standardized test and GPA.

Table 17

Descriptive Statistics for Measures of Academic Achievement

Measure	Participants			Non-Participants		
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>
PLAN	18.18	2.230	177	18.58	2.449	202
ACT	22.84	3.023	81	23.26	3.030	70
KCA Reading	85.21	6.693	187	86.26	7.276	216
KCA Math	75.89	12.663	187	78.34	11.427	216
GPA	3.31	.402	134	3.23	.416	183

Hypothesis Testing

This section contains results from statistical tests conducted to test the hypotheses of each research question.

RQ1. To what extent does participation in AVID impact academic measures of college readiness?

H1. There is a difference in college readiness, as measured by the PLAN, between students who participate in AVID and those who do not.

The results of the independent-samples *t* test indicated a marginally statistically significant difference between the two values, $t = 1.681$, $df = 376$, $p = .094$. The sample

mean for non-participants ($M = 18.58$, $SD = 2.45$) was higher than the sample mean for participants ($M = 18.18$, $SD = 2.23$), which supports H1.

H2. There is a difference in college readiness, as measured by the ACT, between students who participate in AVID and those who do not.

The results of the independent-samples t test indicated there was not a statistically significant difference between the two values, $t = .846$, $df = 149$, $p = .399$. The sample mean for non-participants ($M = 23.26$, $SD = 3.03$) was not different enough from the sample mean for participants ($M = 22.84$, $SD = 3.02$), which does not support H2.

H3. There is a difference in college readiness, as measured by the KCA reading test, between students who participate in AVID and those who do not.

The results of the independent-samples t test indicated there was not a statistically significant difference between the two values, $t = 1.507$, $df = 401$, $p = .133$. The sample mean for non-participants ($M = 86.26$, $SD = 7.28$) was not different enough from the sample mean for participants ($M = 85.21$, $SD = 6.69$), which does not support H3.

H4. There is a difference in college readiness, as measured by the KCA math test, between students who participate in AVID and those who do not.

The results of the independent-samples t test indicated a statistically significant difference between the two values, $t = 2.037$, $df = 401$, $p < .05$. The sample mean for non-participants ($M = 78.34$, $SD = 11.43$) was higher than the sample mean for participants ($M = 75.89$, $SD = 12.66$), which supports H4.

H5. There is a difference in college readiness, as measured by GPA, between students who participate in AVID and those who do not.

The results of the independent-samples t test indicated a marginally statistically significant difference between the two values, $t = -1.739$, $df = 315$, $p = .083$. The sample mean for non-participants ($M = 3.24$, $SD = .416$) was lower than the sample mean for participants ($M = 3.32$, $SD = .403$), which supports H5.

RQ2. What are AVID students' perceptions regarding the impact of the non-academic facets of college readiness?

H6. AVID students perceive Program Components as helpful.

The results of the chi-square test of equal percentages indicated a statistically significant difference between the observed and expected values, $\chi^2 = 80.895$, $df = 3$, $p < .001$. There is an association between the non-academic achievement variables and the AVID students' perceptions of the impact of AVID on college readiness, which supports H6. The observed frequency was greater than expected, which indicates AVID participants perceive the Program Components as helpful and as having a positive impact on their college readiness. See Table 18 for the observed and expected frequencies. See Table 18 for the observed and expected frequencies for H6.

Table 18

Observed and Expected Frequencies for Hypothesis 6

Program Components	Observed	Expected
No Help at All	7	47.8
Of Limited Help	37	47.8
Fairly Helpful	93	47.8
Very Helpful	54	47.8

H7. AVID students perceive themselves improved in Program Benefits.

The results of the chi-square test of equal percentages indicated a statistically significant difference between the observed and expected values, $\chi^2 = 62.063$, $df = 4$, $p < .001$. There is an association between the non-academic achievement variables and the AVID students' perceptions of the impact of AVID on college readiness, which supports H7. The observed frequency was greater than expected, which indicates AVID participants perceive themselves as improved in Program Benefits and as having a positive impact on their college readiness. See Table 19 for the observed and expected frequencies for H7.

Table 19

Observed and Expected Frequencies for Hypothesis 7

Program Benefits	Observed	Expected
None	8	38.2
Little	23	38.2
Somewhat	47	38.2
Much	72	38.2
A Great Deal	41	38.2

RQ3. To what extent do relationships exist between the number of years students are enrolled in AVID and their perceptions of the level of helpfulness of Program Components and their degree of improvement in Program Benefits?

H8. There is a relationship between the number of years a student is enrolled in AVID and the student's perception of the helpfulness of Program Components.

A Pearson product-moment correlation was conducted to test H8. The correlation coefficient ($r = .291$) provided evidence for a weak positive relationship between the

variables. The results of the one-sample t test indicated a statistically significant relationship between the number of years a student is enrolled in AVID and the student's perception of the helpfulness of Program Components, $t = 4.141$, $df = 1, 186$, $p < .001$. This relationship, although weak, indicated the longer a student participates in AVID, the higher the student's overall perception of the helpfulness of the Program Components, which supports H8. See Table 20 for the individual Program Component results.

Table 20

Correlations of Individual Program Components

Component	Years in AVID			Grade Level		
	r	p	n	r	p	n
Cornell Notes	.310	< .001	184	.263	< .001	183
Socratic Seminar	-.036	.630	186	-.071	.335	185
Tutorials	.258	< .001	187	.255	< .001	186
Tutors	-.050	.500	185	-.090	.223	184
College visits and research	.091	.218	185	.121	.100	184
ACT/SAT prep	.248	.001	185	.236	.001	184
Push from my AVID teacher	.329	< .001	188	.277	< .001	187
Staying with the same classmates	.146	.047	186	.096	.192	185
Staying with the same teacher	.316	< .001	185	.228	.002	184

H9. There is a relationship between the number of years a student is enrolled in AVID and the student's perception of the degree of improvement in Program Benefits.

A Pearson product-moment correlation was conducted to test H9. The correlation coefficient ($r = .336$) provided evidence for a moderately weak positive relationship between the variables. The results of the one-sample t test indicated a statistically significant relationship between the number of years a student is enrolled in AVID and the student's perception of the degree of improvement in Program Benefits, $t = 4.862$, $df = 1, 186$, $p < .001$. This relationship, although weak, indicated the longer a student participates in AVID, the higher the student's overall perception of improvement in areas of the Program Benefits, which supports H9. See Table 21 for the individual Program Benefits results for H9 and H11.

Table 21

Correlations of Individual Program Benefits

Benefit	Years in AVID			Grade Level		
	<i>r</i>	<i>p</i>	<i>n</i>	<i>r</i>	<i>p</i>	<i>n</i>
Note-taking skills	.281	< .001	188	.246	.001	187
Test-taking strategies	.184	.012	185	.167	.024	184
Presentation skills	.222	.002	185	.181	.014	184
Organizational skills	.201	.006	187	.199	.007	186
Writing skills	.302	< .001	184	.300	< .001	183
Study skills	.269	< .001	187	.216	.003	186
Self-confidence	.247	.001	188	.194	.008	187
Self-expectations	.243	.001	186	.172	.019	185
Self-discipline	.337	< .001	186	.282	< .001	185
Self-advocacy	.327	< .001	185	.295	< .001	184
Engagement in class and school	.313	< .001	186	.198	.007	185

RQ4. To what extent do relationships exist between students' grade levels in high school and their perceptions of the level of helpfulness of Program Components and their degree of improvement in Program Benefits?

H10. There is a relationship between a student's grade level in high school and the student's perception of the helpfulness of Program Components.

A Pearson product-moment correlation was conducted to test H9. The correlation coefficient ($r = .237$) provided evidence for a weak positive relationship between the variables. The results of the one-sample t test indicated a statistically significant relationship between the student's grade level and the student's perception of the helpfulness of Program Components, $t = 3.318$, $df = 1, 185$, $p < .05$. This relationship, although weak, indicated that the higher the student's grade level in high school, the higher the student's overall perception of the helpfulness of the Program Components, which supports H10 (see Table 18).

H11. There is a relationship between a student's grade level in high school and the student's perceptions of the degree of improvement in Program Benefits.

A Pearson product-moment correlation was conducted to test H11. The correlation coefficient ($r = .278$) provided evidence for a weak positive relationship between the variables. The results of the one-sample t test indicated a statistically significant relationship between the student's grade level and the student's perception of the degree of improvement in Program Benefits, $t = 3.94$, $df = 1, 185$, $p < .001$. This relationship, although weak, indicated that the higher the student's grade level in high school, the higher the student's degree of improvement in the Program Benefits which supports H11 (see Table 19).

Summary

Chapter four reported the hypothesis testing results for each research question. An independent-samples t test was conducted to determine whether differences existed between participation in AVID and college readiness as measured by academic achievement. Outcomes of the hypothesis tests showed mixed results. A chi-square test

of equal percentages was conducted to determine if AVID had an impact on student perceptions. Results indicated statistically significant relationships between AVID and students' perceived impact of the non-academic facets of college readiness related to Program Components and their degree of improvement in Program Benefits.

Results from the Pearson product-moment correlations indicated that the students' overall perceptions of the helpfulness of the Program Components were related to the number of years students participated in AVID, as well as the overall perception of the helpfulness of the Program Benefits. Finally, results indicated statistically significant relationships between an AVID student's grade level in high school and overall perception of the helpfulness of the Program Components, and between grade level and the perceived degree of improvement in the areas of Program Benefits. Chapter five reports major findings of the hypothesis testing, describes the relationship of this study's results to literature, discusses implications for action, and provides recommendations for future study.

Chapter Five

Interpretation and Recommendations

Chapter five presents an overview of the problem, purpose, research questions, methodology, and major findings of the study. In addition, findings related to relevant literature on AVID, implications for actions, and recommendations for future research are addressed.

Study Summary

This study took place in District X, in a suburb of a large Midwestern city. The population of interest was high school students in grades 9 through 12 who satisfied the criteria for enrollment in Advancement Via Individual Determination (AVID) as an elective course in 2008-2009, 2009-2010, 2010-2011, and 2011-2012. There were two groups within the sample: students enrolled in the AVID course and AVID eligible students who opted not to enroll in the AVID course. The purpose of this study was to analyze the relationships between enrollment in AVID and the academic and non-academic facets of college readiness as measures of the success of AVID.

A review of literature included information related to the role AVID has held in the historical context of school improvement and school reform program implementation. The review also included NCLB and the effects on CSR program implementation, secondary education for the 21st century, and research on three exemplar secondary CSRPs. Finally, a deeper review of the AVID program was presented.

Academic achievement impact was measured by comparing the most recent scores on the PLAN, ACT, KCA reading and math tests, and GPAs for the two groups: participants and non-participants in AVID. A survey was administered to AVID students

to collect data on the perceived impact of non-academic facets on college readiness. The four research questions were analyzed using independent-samples *t* tests, chi-square tests of equal percentages, and Pearson product-moment correlation coefficients.

Overview of the problem. The 2001 reauthorization of NCLB caused most districts across the United States to respond to the expanded mandates, which included meeting the academic needs of all students, especially those who were underserved. In order to better prepare students in the academic middle for college success, District X implemented the AVID program in one high school during the 2008-2009 school year. Lake (2009) studied the impact of AVID on the academic achievement of students enrolled in the first and second year of the AVID program in a district similar to District X. Since its inception, the District X AVID program had been implemented in all five of the District X high schools in grades 9-12, and as of 2013 there has been three graduating classes of AVID. Additionally, while numerous studies of AVID's impact have been conducted, this researcher found that only two researchers (Lake, 2009; Rorie, 2007) have studied districts with demographics and academic achievement standings similar to those of District X. College entrance data obtained from the Director of Assessment and Research (District X Director of Assessment and Research, personal communication, January 9, 2012) and results from Lake (2009) and Potts (2010) suggested that there were students graduating from high schools who, while in the academic middle, had the potential for college success. Such students needed a comprehensive school reform program such as AVID to guide them toward enrolling in college preparatory courses and support them while they take a more rigorous high school curriculum. The data reviewed

showed that the need for AVID in District X was strong, but also that the impact on academic achievement and college readiness was unclear.

Purpose statement and research questions. This study was designed to examine the relationships between enrollment in AVID and the academic and non-academic facets of college readiness as measures of the success of Advancement Via Individual Determination (AVID) in District X. Research question one addressed the impact of AVID enrollment on college readiness as measured by variables of academic achievement. Research question two focused on students' perceptions of the impact of the non-academic facets of college readiness related to the AVID Program Components and students' perceived degree of their own improvement in Program Benefits. Research questions three and four focused on the extent to which relationships existed between the perceived impact of AVID Program Components and Program Benefits and the number of years students were enrolled in AVID and high school grade level.

Review of the methodology. This study included a sample of 406 students meeting the District X enrollment criteria for AVID. District X was located in a suburban area of a large midwestern city, with high socioeconomic demographics and a high academic achievement record. The variables in this study included AVID enrollment status of participant ($n = 189$) and non-participant ($n = 217$) academic achievement, and students' perception of AVID's impact. Independent-samples t tests were used to address research question one to determine if statistically significant differences existed between AVID participants and non-participants in college readiness as measured by academic achievement. Academic achievement was measured by students' most recent scores on the PLAN, ACT, KCA reading and math tests, and GPA.

Chi-square tests of equal percentages were used to address research question two to determine participants' perceptions of the impact of AVID Program Components and Program Benefits on non-academic facets of college readiness. Pearson product-moment correlation coefficients were calculated to determine the extent to which students' perceptions were related to years enrolled in AVID and high school grade level.

Major findings. Results of this study were mixed. There was a marginal relationship between participation in AVID and college readiness as measured by academic achievement. A difference was found in college readiness between participants and non-participants, with non-participants being slightly more college ready as measured by the PLAN and KCA math tests. Results of testing showed no statistical difference between participants' and non-participants' mean scores on the ACT and the KCA reading tests. This indicated that participants and non-participants were equally college ready academically when measured by scores on the ACT and KCA reading tests. The results of testing showed the mean non-weighted cumulative semester GPA of 3.31 for participants' was marginally statistically higher than non-participants' mean GPA. This suggested that when non-weighted cumulative semester GPA was used to determine academic college readiness, AVID participants were slightly more ready than non-participants. A close examination of the data revealed interesting comparative results between participants and non-participants mean scores on the PLAN and ACT. The PLAN and ACT tests were part of an integrated series of standardized assessments labeled ACT's Educational Planning and Assessment System (EPAS™), which is published by ACT, Inc. (2007). Benchmark scores for college readiness were provided for the content areas in all EPAS™ tests. Benchmark scores were used to determine

whether a student was on track for meeting college readiness standards. Composite data could be derived from individual test subject scores (ACT, Inc., 2007). The results indicated that non-participants' mean score on the PLAN (18.58), which is administered during the 9th grade year in District X, was greater than the mean score of participants (18.18). However, the mean score of participants (23.26) on the ACT, which is administered during 11th and 12th grade, was greater than that of non-participants (22.84). These results indicate that students participating in AVID grew academically to be slightly more college ready than non-participants between their freshman year in high school and their junior or senior year as measured by the PLAN and ACT. This suggests that AVID was partially meeting the District X aim of meeting the academic needs and personal growth of all students (District X, 2010).

Overall, results from this study also indicated a statistically significant relationship between participation in AVID and students' perceived impact of the non-academic facets of college readiness related to Program Components. The results indicated a statistically significant positive relationship between the number of years a student was enrolled in AVID and the student's perception of the helpfulness of Program Components. This relationship, although weak, indicated the longer a student participated in AVID, the higher the student's overall perception of the helpfulness of Program Components.

Mixed results indicated that AVID participants perceived Program Components as mostly helpful non-academic facets of college readiness. When examined as individual components, results showed negative correlations between students' grade level in high school and years in AVID, and the degree of perceived impact related to the

Socratic Seminar and Tutor Program Components. These results may reflect that the more experience AVID students have in participating in tutorials, due to being in the program for multiple years and more independent learners in the upper grades, the less they rely on tutors to facilitate tutorials. This conclusion is consistent with Conley's (2007) definition of college and career readiness, which is for students to successfully complete a credit bearing post-secondary course without remediation.

All other individual Program Components showed positive correlations to students' years and AVID grade level. The results showed the strongest positive correlations, although weak, between years in AVID and students' perceptions of the helpfulness of the Program Components Cornell Notes, tutorials, push from my AVID teacher, and staying with the same teacher. Similar relationships were found between these components and students' grade level.

The results also indicated a statistically significant positive relationship between the number of years a student was enrolled in AVID and the student's perception of the degree of improvement in Program Benefits. The data indicated mixed results that AVID students perceived themselves as improved in individual areas of Program Benefits. All correlations between the students' number of years in AVID and grade level in high school, and the degree of improvement in individual Program Benefits were positive and statistically significant. The results showed the strongest correlations existed between years in AVID and students' perceptions of the individual Program Benefits of note-taking skills, writing skills, study skills, self-discipline, self-advocacy, and engagement in class and school. Similar relationships were found between these benefits and students' grade level.. These relationships, although weak, may reflect that District X high schools

were becoming “AVIDized”, meaning components of AVID had become systemic throughout each high school across the district. This conclusion is supported by Rorie’s (2007) results that indicated the Program Benefits of AVID had been realized by students across classes and practices had become systemic throughout each high school.

Finally, results showed a positive relationship between grade level and the perception of the degree of improvement in Program Benefits. This relationship, although weak, indicated that the higher the student’s grade level in high school, the higher the student’s degree of improvement in the Program Benefits.

Findings Related to the Literature

Comparing the results of this study to the research presented in chapter two revealed more similarities than differences. The mixed results of this study provided evidence that AVID was at least partially fulfilling District X’s goal of increasing the participants’ college readiness, which supported the research that AVID “addresses the predictors of college going behaviors [non-academic facets]...and achieves its goals by providing students with tremendous amounts of...support” (Martinez & Klopott, 2005, p. 18). This study also supported the AVID (2013) program’s claim that research had shown the AVID design provided the kind of support and scaffolding students needed for developing the skills and dispositions necessary for postsecondary success.

Similar to Rorie (2007), Connors (2010), Ford (2010), and Hale (2006), this study had mixed results regarding the relationship of student participation in AVID and college readiness as measured by academic and non-academic facets. Rorie (2007) studied the impact on high school achievement of AVID students in a suburban Colorado district with demographics similar to District X. Results of Rorie’s (2007) study varied

depending on the measure used to determine academic impact and program effectiveness. A major similarity between Rorie's (2007) study and the current study was that while marginally or no statistically significant differences existed between subgroup scores on state AYP reading tests, the AVID participants' GPA was marginally higher than that of the non-participants. Like Rorie (2007), the results of the current study showed the sample mean score on the state AYP math tests was higher for non-participants than participants. Connors (2010) found when studying AVID and non-AVID students in two central Florida school districts, though no statistically significant differences existed on state AYP math and reading tests, 10th grade AVID students performed significantly higher on the writing portion. Additionally, Connors (2010) concluded that AVID students performed as well on the math and reading portions as regular honors students.

Ford (2010) studied the impact of AVID on closing the achievement gap in one urban Texas high school. Results of Ford's (2010) study showed non-AVID students were marginally more successful than, or there was no statistical difference between, the sub-groups on the study's academic measures. The current study was consistent with Ford (2010) in showing no statistical difference between the mean scores of participants and non-participants on the state reading test. The results of the current study differed from Ford's (2010) results by indicating that non-participants' sample mean on the state math test was statistically significantly higher than the participants' mean. However, similar to Ford (2010), the current study found students' perception of having gained possession of the non-academic facets of college readiness attributable to their AVID experience.

Hale (2006) used two packaged tools to survey AVID freshmen and seniors from a California high school to compare the attitudinal dispositions and perceptions of AVID participants and non-participants. The current study, like Hale (2006), found results showing mixed and varied responses on individual respondents' surveys, while overall findings showed AVID students perceived the instructional practices associated with Program Components and Program Benefits as important to the academic and non-academic facets of their college readiness (see Tables 18 and 19).

Finally, as concluded by Rorie (2007) in her study of AVID in a district with demographics and academic achievement standings similar to those in District X, the lack of statistical differences on some standardized test scores may "reflect the fact that the students did not fit the AVID student profile's characteristics of underachieving, low income, and minority group" (p. 131). While the percentage of such students in the current study's sample was not known, it could be assumed to be very small or nonexistent given District X ethnicity makeup for 2011-2012 was 84.50% White, 3.20% African American, 2.00% Hispanic, and 7.40% Other ($n = 21,864$). Additionally, the poverty rate in District X was also very low, at 1.4%, based on the 2009 American Community Survey (Proximity, 2013), with 8.1% of students receiving free and reduced meals (Mid-America Regional Council, 2013). However, as stated previously, the difference between participants' mean non-weighted cumulative semester GPA of 3.317 ($n = 134$) and non-participants' mean non-weighted cumulative semester GPA of 3.235 ($n = 183$) was marginally statistically significant and the results of hypothesis tests showed AVID students perceived Program Components and Program Benefits as positively impacting their college readiness. Value of a program such as AVID in high

socioeconomic, high achieving school districts was supported by this study. Such a program met both District X's mission of unprecedented academic success and unparalleled personal growth for every student (District X, 2010) and AVID's mission "to close the achievement gap by preparing all students for college readiness and success in a global society" (AVID, n.d.b., para. 1).

Conclusions

District X committed significant resources in terms of time, funding, professional development, and staffing for the implementation of AVID. The findings of this study indicate that the AVID program contributed to slightly positive results for participants' college readiness.

Implications for action. The findings of this study have strong implications for school districts with high socioeconomic demographics and high standing academic achievement records, particularly District X. This study identified statistically significant relationships between participation in AVID and students' perceptions that the Program Components and Program Benefits positively impacted non-academic facets of students' college readiness. The study also had mixed results regarding the impact of AVID on academic measures of college readiness. For District X and other similar school districts, this study reinforced the importance of providing students in the academic middle with a comprehensive school reform program, like AVID, that focuses on non-academic facets of college readiness. For students in such districts, they must have access to courses designed to deliver curriculum intended to develop the confidence and skills needed to enroll in and provide support for more rigorous high school courses that help prepare them for 21st century postsecondary success.

District level site teams could use the results of students' perceived impact of the AVID Program Components and Program Benefits in their college readiness to inform decisions regarding implementing a middle school AVID elective class. If adding the full AVID elective program to middle school was not feasible, the results indicating the strongest correlations of perceived impact could be used to identify individual AVID Program Components and specific Program Benefits to be included in or developed through existing middle school classes such as study skills or guided study.

High school AVID site teams can use the results from this research to cite the positive aspects of participating in AVID during the enrollment period and when holding parent meetings. As research cited in the opening chapter supported the current certainty that the same skill sets and dispositions are required for postsecondary success, whether college or career, site teams might work on expanding program goals to include both college and career readiness. This information can help site teams and district level program managers evaluate the rigor of their AVID program and the alignment and structuring of the AVID course to ensure that it supports the current and future needs of successful learners. Additionally, as districts work to update and strengthen curriculum to support the new Common Core State Standards (CCSS), site teams will need to evaluate the AVID curriculum to ensure that it supports the increased demands of the depth of knowledge required in all content areas, especially the extensive focus on expository reading and writing. These teams can refer to the background information in chapter one and portions of chapter two that discuss the literature on high school reform for the 21st century.

Finally, the data showed positive relationships were found between the participants' number of years in AVID and the perception of the level of helpfulness of the AVID Program Components and improvement in areas of Program Benefits. A positive correlation also existed between the participants' number of years in AVID and the perception of the level of helpfulness of the AVID Program Components. A positive correlation also existed between participants' perceived improvement in areas of Program Benefits and number of years in AVID. These results suggested that AVID students' independence in applying the associated strategies and using the correlated skills to support academic success grows over time. Such results imply AVID site teams could consider practicing gradual release of AVID class requirements: from a very structured and tight freshman experience through a simulated experience with natural consequences of being a first year college student during the high school senior year. Simulated experiences of college life could include freedom of choice such as completing assignments, attending classes, contacting instructors and other college resource personnel as needed for support; or managing time, finances, and other resources.

Recommendations for future research. The goal of this research was to examine the impact enrollment in AVID had on academic and non-academic facets of college readiness in District X. The categorical data of this study underwent analysis for each of the four research questions related to this goal, with the outcome of mixed results related to a given hypothesis. As the results of this study were analyzed, with thoughtful reflection and consideration given to the findings, the following recommendations for future research needed to address the limitations of this research study are as follows.

1. Beginning in 2015, the state AYP tests will be replaced with new state assessments designed to measure students' academic achievement of the CCSS, known in Kansas schools as Kansas College and Career Readiness Standards (KCCRS). According to the KSDE (2013), these tests will create a marked shift from the KCA math and reading tests used in the study. Both participant and non-participant students are taking these new state standardized tests throughout the remainder of their high school years. Evaluating all students meeting the AVID enrollment criteria on these new assessments would provide districts, specifically District X, valuable and current information regarding AVID's impact on academic measures of college readiness.
2. The results of the current research provide the foundation for future studies comparing multiple factors not addressed within this study. Possible combinations of comparative studies include
 - a. Examining the relationship of students' perceived impact on their college readiness between individual components of the AVID program within Program Components, and students' perceived degree of self-improvement related to specific Program Benefits.
 - b. Comparing the courses in which AVID students enroll to the non-participant students who met the AVID enrollment criteria, but chose not to enroll in the AVID elective course.
 - c. Analyzing the change in AVID students' academic achievement measures as well as their perceptions of the impact Program Components and

Program Benefits have on their college readiness before and after enrolling in the AVID program.

- d. Conducting a longitudinal comparative study of AVID students' academic achievement measures throughout their high school years.
 - e. Examining the relationship between students' specific grade level in high school or years in AVID and their perceived impact of Program Components on their college readiness and students perceived degree of self-improvement related to Program Benefits.
3. As comparing postsecondary college and career readiness on an international level becomes more important and a focus of school districts such as District X, studies of the academic impact of AVID programming could be expanded to additional standardized tests.
 4. Three primary goals support AVID's mission: 1) increase GPA; 2) increase rigorous course enrollment; and 3) increase college application and acceptance (AVID, n.d.a.). Including this study and the studies found by this researcher that were set in school districts similar to District X, all three examined standardized test scores to evaluate AVID enrollment's impact on academic achievement, while two, Rorie (2007) and the current study, examined GPA. None looked at goal two or three regarding increased rigor of courses and college application and acceptance rates. School districts, particularly District X, should consider examining AVID enrollment's impact on courses students take while in high school to compare the rigor level using such measures as the number of Honors and AP level courses in which students are enrolled; which students are utilizing

the College Now opportunity; and which students are taking AP tests, including overall numbers of students taking the tests, the content of tests taken, and the associated scores on tests taken. Additional information on AVID impact could be collected by examining students course grades before and after enrolling in the AVID elective class.

Districts could also collect data to compare college application submissions and subsequent acceptance rates of AVID participants and non-participants. This could occur during the students' junior and senior years, which is when this process is included in the AVID curriculum (District X AVID teacher, personal communication, June 30, 2013). Including studies such as those suggested previously, while continuing a comparison of GPAs (including weighted GPAs), would provide school districts with a comprehensive picture of AVID's academic impact on college readiness and an overall understanding of the program's effectiveness in a school or district. Districts could strengthen such research by following and collecting data on AVID graduates enrolled in postsecondary institutions. This extended study could provide districts with longitudinal information on AVID's impact through data such as students' college GPAs and the students' perceptions of impact on their postsecondary experience.

5. For districts with an AVID program in multiple high schools, which is true of District X, program leaders might consider studying how high schools identify, screen, and invite potential candidates to enroll in an AVID elective class, and how records of this process are kept. A very specific process is laid out by the AVID organization to ensure selection of students with characteristics fitting the

ideal AVID candidate. A summary of this process, as described in chapter two, includes recommendations by general education teachers, a review of academic performance, and an interview with the AVID site team members (AVID, n.d.a.). Much variation in this process between high schools within the same district could negatively affect the program's impact and consequently be interpreted as a short-coming of the program design rather than a result of program implementation. This concern is supported by research on sustainable CSRPs in chapter three. Berman and McLaughlin (1975) provided one of the seminal reports on CSRPs and concluded "the predictors of effective implementation are likely to lie in those project characteristics promoting or inhibiting adaptation to the institutional setting [or] the implementation strategy rather than in the educational [intervention]...itself" (p. 16). This was subsequently confirmed through numerous and more contemporary studies (Borman et al., 2002; Evans et al., 2005; Rutherford, 2005).

Concluding remarks. The purpose of this study was to analyze the relationships between enrollment in AVID and the academic and non-academic facets of college readiness as measures of the success of Advancement Via Individual Determination (AVID). The data were analyzed to determine 1) the academic impact of AVID enrollment on college readiness, 2) AVID participants' perceptions of the impact of Program Components and Program benefits; and 3) the extent to which relationships existed between the perceived impact of AVID Program Components and Program Benefits and the number of years students were enrolled in AVID and high school grade level.

The mixed results of this study indicated positive relationships between participation in AVID and college readiness, as measured by academic achievement, and between participation in AVID and students' perceived impact of the non-academic facets of college readiness. It is certain that schools and districts across the United States will continue to strive to meet the demands of ESEA mandates, provide teaching and learning environments that prepare graduates for their postsecondary success as it will exist through the 21st century, and search for just the right CSRPs that fits their schools' and districts' demographic profiles. As districts do so, it will be critical to continue this research in determining the impact of AVID enrollment on college and career readiness.

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Appendices

Appendix A: District X Strategic Focuses Articulated through Performance Targets

Focus	Target
*Kansas State Assessments-A Path Toward Continued Excellence	All schools and all grade levels will achieve the Standard of Excellence on the Kansas State Assessments. On each state assessment, special focus will continue to be placed on the performance of identifiable subgroups, as well as the percent of students scoring at the exemplary level.
Measures of Academic Progress (MAP)	K-8 students will participate in MAP testing in order to provide diagnostic and progress data.
ACT Trilogy	Schools will show yearly increases in the percentages of students who meet college readiness benchmarks on the ACT.
Measure of Academic Progress (MAP)	Schools will show annual increases in the number of students enrolled in college credit bearing courses.
College and Career Readiness in the 21 st Century	Students will be provided with the experiences and opportunities to be ready for college and career.
Personal and Social Responsibility	Students will be provided with the experiences and opportunities to enhance their responsibilities in their community and the world-at-large.
Technology and Tools	All students will have access to curriculum-embedded technological tools, will demonstrate knowledge of the appropriate use of such tools, and will be able to apply this knowledge in a variety of contexts.

Note. Adapted from “*Strategic plan, 2010-2015: Education beyond expectations,*” by District X, 2010, pp. 17-20. Copyright 2010 by District X.

*Currently under revision to reflect the adoption of the Common Core State Standards by the state of Kansas.

Appendix B: Conley's Facets of College Readiness

Facet	Definition	Manifestations
Key Cognitive Strategies	Intelligent behaviors necessary for college readiness; emphasis on behaviors need to be developed over time	Intellectual openness; inquisitiveness; analysis; reasoning, argumentation, proof; interpretation; precision and accuracy; problem-solving
Key Content	Academic skill areas repeatedly identified as centrally important to college success	Writing; research; English; math; science; social studies; the arts; world languages
Academic Behaviors	Range of behaviors reflect greater student self-awareness, self-monitoring, and self-control of a series of processes; behaviors necessary for academic success, independent of particular content area	Awareness of level of mastery and understanding of a subject; ability to reflect-what worked v. areas needing improvement; tendency to persist on given task; tendency to identify, systematically select and employ range of learning strategies; capability to transfer learning and strategies to settings and situations; mastery of study skills
Contextual Skills & Awareness	Primarily the privileged information necessary to understand how college operates as a system and culture.	Systematic understanding of post-secondary educational system; specific knowledge of norms, values, and conventions of interaction; human relations coping skills; ability to collaborate and work in teams, interact with diverse people, communicate informally, demonstrate leadership, and apply college knowledge

Note. Adapted from “Toward a More Comprehensive Conception of College Readiness,” by D. Conley, 2007, pp. 12-17. Copyright 2007 by the Educational Policy Improvement Center.

Appendix C: CSR Components

Eleven Components of a Comprehensive School Reform Program

Research-based methods. Proven strategies and methods for student learning, teaching, and school management that are founded on scientifically based research and effective practices and that have been replicated successfully in schools.

Comprehensive design. School-wide reform plans that include instruction, assessment, classroom management, professional development, parental involvement, and school management in a comprehensive approach to addressing the specific needs of the school and enabling all students to meet challenging state standards.

Focus on student achievement. Measurable goals for student academic achievement and benchmarks for meeting these goals.

Buy-in. Support from teachers, principals, administrators, school staff, and other professional staff.

Professional development. High-quality and continuous teacher and staff professional development.

Support for school staff. Support for teachers, principals, administrators, and other school staff.

Partnerships with parents and communities. Meaningful involvement of parents and the local community in planning, implementing, and evaluating school improvement activities.

External support. High-quality external technical support and assistance from an entity that has experience and expertise in school-wide reform and improvement.

Evaluation planning. A plan for the annual evaluation of the implementation of school reforms and the student results achieved.

Combining resources. Identification and coordination of other resources, including federal, state, local, and private resources to support and sustain the comprehensive school reform effort.

Evidence of effectiveness. Programs that have been found through scientifically based research to significantly improve the academic achievement of participating children or have strong evidence that they will achieve this result.

Note. Adapted from “Correlates of Effective Schools: The First and Second Generation,” by L. Lezotte, 1991, pp. 2-7. Copyright 1991 by Lawrence W. Lezotte; and from “Comprehensive School Reform Program,” by the United States Department of Education, 2007.

Appendix D: Educational Reform Lessons

Reform	Positives	Negatives
New Textbooks	<ul style="list-style-type: none"> ▪ Main tool of classroom teachers ▪ K-12 systems hunger for new and better materials 	<ul style="list-style-type: none"> ▪ Requires intensive training and ongoing professional development support ▪ Use of content and materials vary between teachers
Increased Graduation Requirements	<ul style="list-style-type: none"> ▪ High scores on achievement tests for students enrolled in advanced classes ▪ Students can learn harder content if exposed to it 	<ul style="list-style-type: none"> ▪ Increased dropout rates in states with increased graduation requirements ▪ Efforts to increase content coverage should begin earlier and across grade levels
Standards-Based Reform and Accountability	<ul style="list-style-type: none"> ▪ Tested content will be taught ▪ Test formats will be mimicked in instruction ▪ Teaching improves when tests and test formats are better ▪ Instructional changes are more consequential when reform efforts are more intensive ▪ Deeper reform outcomes result from more intensive efforts to support professional development 	<ul style="list-style-type: none"> ▪ Awful teaching results from awful tests and testing formats
Comprehensive School Reform	<ul style="list-style-type: none"> ▪ Successful educational reform is intensive and multi-dimensional 	<ul style="list-style-type: none"> ▪ Wide variety of programs ▪ Mixed success in changing instruction and improving student achievement

Note. Adapted from “Changing Instruction and Improving Student Learning: Lessons from Comprehensive School Reform,” by B. Rowan, 2007, p. 1.

Appendix E: Five Lessons for Sustained CSR

Lesson	Key Take-aways
1. Sustainability isn't just maintenance of a program	<ul style="list-style-type: none"> ▪ Sustainable programs move beyond maintenance and develop the ability to evolve ▪ The ability to adapt is critical ▪ Reform leaders must find pathways for adapting programs to new contextual conditions
2. Programs go through stages as they move toward sustainability	<ul style="list-style-type: none"> ▪ Establishment phase-focus on introducing the program and ensuring key elements of curriculum leadership structures, and professional development are well established and embedded in school culture ▪ Maturation phase-focus on wide acceptance of program and habitual embedded implementation of practices ▪ Evolution phase-focus on existing condition of program; address resource, material, and professional development needs; deepen teachers philosophic and instructional understanding of program
3. Contextual conditions influence the sustainability of programs	<ul style="list-style-type: none"> ▪ School / District culture-program must be compatible with culture regardless of will, interest, or intention ▪ Decision-making structures-have skills to negotiate existing structures; gaining access; building support strategically; building relationships ▪ Equity issues-it is critical to uncover and address deeply rooted issues such as who will be affected-some or all students; some classrooms or the whole school
4. Factors expected to affect sustainability do so in unexpected ways	<ul style="list-style-type: none"> ▪ Accountability-this is a competing force for and against sustainability; the direction depends on current priorities such as curriculum or political during given evolutionary phase of program ▪ Instructional materials-who is involved in the decision of materials adoption is as important on the selected materials ▪ Leadership- successful leadership simultaneously responds to variable program needs and conditional changes in the district over time; echo cultural of districts ▪ Money-sustainability is possible with and without large input of funds from external sources ▪ Partnerships-while these can contribute to sustainability, they can also pose challenges ▪ Professional development - a most critical aspect for "introducing, illustrating, indoctrinating, and dissemination [a] programs core beliefs and values" (p. 5)
5. Intangible and sometimes invisible factors affect sustainability in pivotal, dramatic ways	<ul style="list-style-type: none"> ▪ Critical mass-two factors are related to sustainability: <ul style="list-style-type: none"> ▪ reaching the number of teachers who create a "culture of program self generation" (p. 5) ▪ achieving a depth where sufficient numbers of stakeholders understand and commit to the core program beliefs and values ▪ Program history-origins, circumstances and events when the program was initiated and that influence sustainability; longevity of a program can add or take away from sustainability if its importance is allowed to be diminished ▪ Implementation and adaptation-leadership needs to be aware of and responsive to the district circumstances and culture, and use them to contribute to a program's sustainability ▪ Perception because these act significantly to support or inhibit sustainability it is important to collect ongoing reliable data regarding the program ▪ Philosophy-individual beliefs about teaching and learning impact the depth of a program's critical mass ▪ Quality-alignment between a "program and the district's accountability system is the primary indicator of program quality" (p. 6)

Note. Adapted from "Sustaining Your Reform: Five Lessons from Research," by J. Century & A. Levy, 2002, pp. 2-6.

Appendix F: Cited Program Goals for High School Reform

David Conley	<ul style="list-style-type: none"> • Create and maintain a college-going culture in the school. • Create a core academic program aligned with and leading to college readiness by the end of twelfth grade. • Teach key self-management skills and academic behaviors and expect students to use them. • Make college and careers real by helping students manage the complexity of preparing for and applying to postsecondary education. • Create assignments and grading policies that more closely approximate college expectations each successive year of high school. • Make the senior year meaningful and appropriately challenging. • Build partnerships with and connections to postsecondary programs and institutions.
Partnership for 21 st Century America	<ul style="list-style-type: none"> • Core subjects: English, reading or language arts; mathematics; science; foreign languages; civics; government; economics; arts; history; and geography. • 21st century content: global awareness; financial, economic, business and entrepreneurial literacy; civic literacy; health and wellness awareness. • Learning and thinking skills: critical-thinking and problem-solving skills; communication skills; creativity and innovation skills; collaboration skills; contextual learning skills; and information and media literacy skills. • Information and communications technology (ict) literacy: the ability to use technology to develop 21st century content knowledge and skills, in the context of learning core subjects to learn content and skills; know <i>how</i> to learn, think critically, solve problems, use information, communicate, innovate and collaborate. • Life skills: essential skills deliberately, strategically and broadly

	<p>taught; include leadership, ethics, accountability, adaptability, personal productivity, personal responsibility, people skills, self-direction, and social responsibility.</p> <ul style="list-style-type: none"> • 21st century assessments: essential foundation of a 21st century education; authentic and measure all five results that matter — core subjects; 21st century content; learning and thinking skills; ICT literacy; and life skills; use modern technologies; a balanced assessments program including high quality standardized testing, effective classroom assessments; includes formative and summative.
<p>Association for Career and Technical Education</p>	<ul style="list-style-type: none"> • High expectations for students with frequent feedback, an academically upgraded and concentrated program of study. • A college-preparatory curriculum built on real-world problem and project application of academic content and skills. • Increased connection to intellectually challenging studies that emphasize higher-level skills needed in future career and education. • Work-based learning. • Collaboration among and between teachers of all content areas. • Actively engaging student in learning, a guidance and advisement system that involve students and parents. • A structured system of extra assistance. • A systems-wide culture of continuous learning.

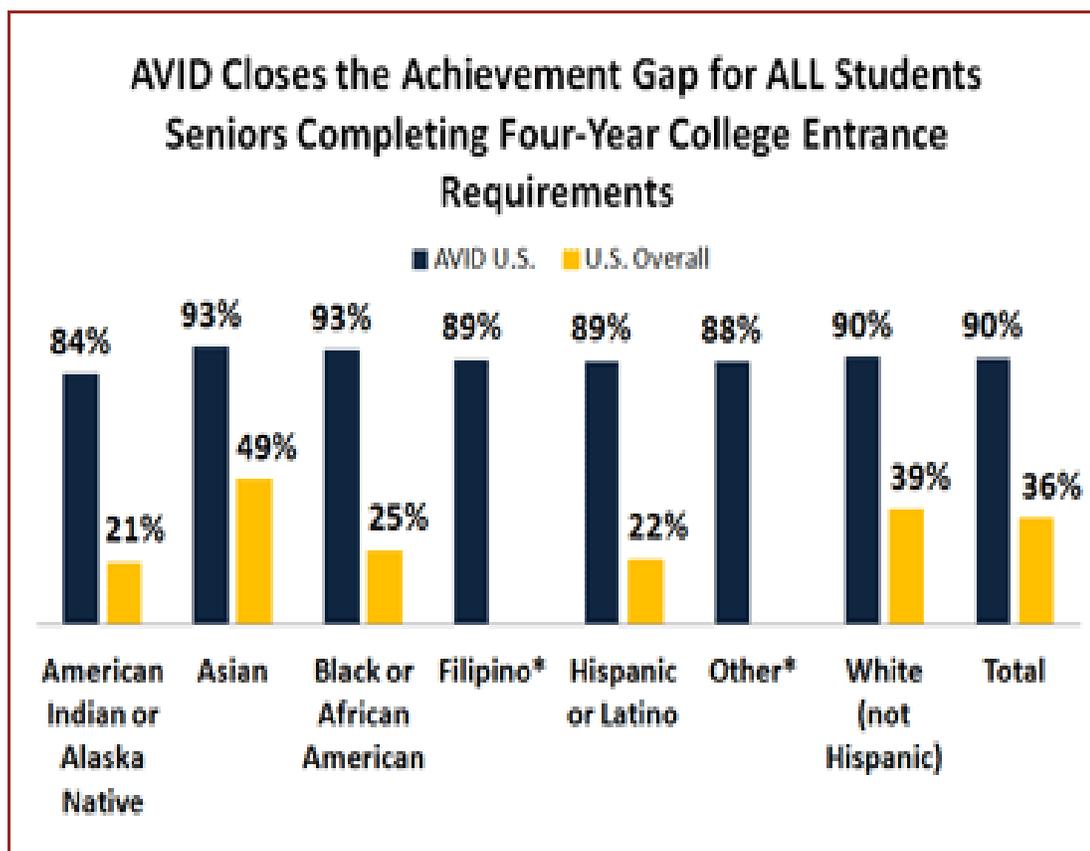
Note. Adapted from “College and Career Ready: Helping all Students Succeed Beyond High School,” by D. Conley, 2010, pp. 104-132; and from “Results that Matter: 21st Century Skills and High School Reform,” by M. Vockley & L. Vockley, 2006, pp. 10-11; and from “Reinventing the American High School for the 21st Century,” by the Association for Career and Technical Education, 2006, pp. 1-3.

Appendix G: WIC-R Framework

Acronym	Methodology	Explanation
W	Writing to learn	<ul style="list-style-type: none"> ▪ Emphasizes writing in all subjects ▪ Focused on students clarifying and communicating thoughts and understanding material
I	Emphasis on inquiry	<ul style="list-style-type: none"> ▪ Inquiry- not lecture-based ▪ Many activities are built around asking questions, which forces students to clarify, analyze, and synthesize material
C-	A collaborative approach	<ul style="list-style-type: none"> ▪ Non-traditional classroom ▪ Teacher is a facilitator and an advocate ▪ Students, not teachers or tutors, are responsible for their learning ▪ Tutors function as discussion leaders, while students challenge, help, and learn from one another
R	Critical reading	<ul style="list-style-type: none"> ▪ Students do more than just read words on a page ▪ Students are taught to analyze, question, critique, clarify, and comprehend the material

Note. Adapted from “What is AVID?,” by AVID, n.d.h., p. 1. Copyright n.d.h. by AVID

Appendix H: AVID College Requirements Completion Rates



Note. Adapted from “Data & Results,” by AVID, n.d.d., para. 3. Copyright n.d.d. by AVID.

Appendix I: KCA Math Standards and Indicators

Standard	Indicator
Numbers and Computation	Properties with the real number system Adjusts estimate based on additional information Solves multi-step real-world problems
Algebra	(NC) Solves word problems linear equations and inequalities (NC) Solves linear equations with 2 unknowns Interprets the x- and y- intercepts, slope, etc. Changes in constant and/or slope changes graph
Geometry	Word problems with Pythagorean Theorem Impact of transformations on perimeter, area, & volume Relationship between slopes of parallel and perpendicular lines Transforms the equation into slope-intercept form
Data	Relationship between probability and odds Data analysis and data displays Effect of outliers Line of best fit

Note. Adapted from “Assessment Framework,” by KSDE, 2010, p. 7. Copyright 2010 by KSDE.

Appendix J: KCA Reading Standards and Indicators

Standard 1 - Reading: The student reads and comprehends text across the curriculum.
Benchmark 3: The student expands vocabulary
<p>▲ Determines meaning of words or phrases using context clues (e.g., definitions, restatements, examples, descriptions, comparison/contrast, clue words, cause/effect) from sentences or paragraphs.</p> <p>▲ Determines meaning of words through structural analysis, using knowledge of ▲ Greek, ▲ Latin, and Anglo-Saxon ▲ roots, ▲ prefixes, and ▲ suffixes to understand complex words, including words in science, mathematics, and social studies.</p> <p>Interprets, and analyzes the use of figurative language, including similes, metaphors, analogies, hyperbole, onomatopoeia, personification, idioms, imagery, and symbolism.</p>
Benchmark 4: The student comprehends a variety of texts (narrative, expository, technical, and persuasive).
<p>▲ Understands the purpose of text features (e.g., title, graphs/charts and maps, table of contents, pictures/illustrations, boldface type, italics, glossary, index, headings, subheadings, topic and summary sentences, captions, sidebars, underlining, numbered or bulleted lists, footnotes, annotations) and uses such features to locate information in and to gain, meaning from appropriate-level texts.</p> <p>▲ Uses information from the text to make inferences and draw conclusions.</p> <p>▲ Analyzes and evaluates how authors use text structure (e.g., sequence, problem/solution, comparison/contrast, description, cause-effect) to achieve their purposes. and contrasts varying aspects (e.g., characters' traits and motives, themes, problem/solution, cause/effect, relationships, ideas and concepts, procedures, viewpoints, authors' purposes, persuasive techniques, use of literary devices, thoroughness of supporting evidence) in one or more appropriate level texts.</p> <p>▲ Explains and analyzes cause/effect relationships in appropriate level narrative, expository, technical, and persuasive texts.</p> <p>▲ Uses paraphrasing and organizational skills to summarize information (stated and implied main ideas, main events, important details, underlying meaning) from appropriate level narrative, expository, technical, and persuasive texts in logical or sequential order, clearly preserving the author's intent.</p> <p>▲ Identifies the topic, main idea(s), supporting details, and theme(s) in text across the content areas and from a variety of sources in appropriate level texts.</p> <p>▲ Analyzes and evaluates how an author's style (e.g., word choice, sentence structure) and use of literary devices (e.g., foreshadowing, flashback, irony, symbolism, tone, mood, satire, imagery, point of view, allusion, overstatement, paradox) work together to achieve his or her purpose for writing text.</p> <p>▲ Identifies the author's position in a persuasive text, describes techniques the author uses to support that position (e.g., bandwagon approach, glittering generalities, testimonials, citing</p>

authority, statistics, other techniques that appeal to reason or emotion), and evaluates the effectiveness of these techniques and the credibility of the information provided.

▲ Distinguishes between fact and opinion, and recognizes propaganda (e.g., advertising, media, politics, warfare), bias, and stereotypes in various types of appropriate level texts.

Standard 2 - Literature: The student responds to a variety of text.

Benchmark 1: The student uses literary concepts to interpret and respond to text.

▲ Identifies and describes different types of characters (e.g., protagonist, antagonist, round, flat, static, dynamic) and analyzes the development of characters.

▲ Analyzes the historical, social, and cultural contextual aspects of the setting and their influence on characters and events in the story or literary text.

▲ Analyzes and evaluates how the author uses various plot elements (e.g., problem or conflict, climax, resolution, rising action, falling action, subplots, parallel episodes) to advance the plot and make connections between events.

Note. Adapted from “Assessment Framework,” by KSDE, 2010, p. 7. Copyright 2010 by KSDE.

Appendix K: Score Range and Description of KCA 2011 Assessments

Level	Range	Descriptor
Academic Warning	0-37	When independently reading grade-appropriate narrative expository, technical, and persuasive text, an unsatisfactory student has incomplete comprehension.
Approaches Standard	38-49	When independently reading grade-appropriate narrative expository, technical, and persuasive text, the basic student has partial comprehension.
Meets Standard	50-67	When independently reading grade-appropriate narrative expository, technical, and persuasive text, a proficient student has satisfactory comprehension.
Exceeds Standard	68-81	When independently reading grade-appropriate narrative expository, technical, and persuasive text, an advanced student has full comprehension.
Exemplary	82-100	When independently reading grade-appropriate narrative expository, technical, and persuasive text, an advanced student has full comprehension, making connections within and outside the text.

Note. Adapted from “Assessment Framework,” by KSDE, 2010, p. 1. Copyright 2012 by KSDE.

Level	Range	Description
Academic Warning	0-37	Student always performs inconsistently and/or inaccurately when working on all grade-level mathematical tasks.
Approaches Standard	38-49	Student usually performs inconsistently and/or inaccurately when working on most grade-level mathematical tasks.
Meets Standard	50-67	Student usually performs consistently and accurately when working on most grade-level mathematical tasks.
Exceeds Standard	68-81	Student usually performs consistently and accurately when working on all grade-level mathematical tasks.
Exemplary	82-100	Student always performs consistently and accurately when working on all grade-level mathematical tasks.

Note. Adapted from “Assessment Framework,” by KSDE, 2010, p. 7. Copyright 2012 by KSDE.

Appendix L: AVID Student Survey

Impact on General Education

3. From your experience, how many of your general education teachers at your school have adopted and used the following AVID components in their classroom?

<i>AVID component</i>	None	Several	Quite A Few	Many	Almost Everyone
Cornell Notes	<input type="checkbox"/>				
Socratic Seminars	<input type="checkbox"/>				
Tutorials	<input type="checkbox"/>				
Tutors	<input type="checkbox"/>				
WICR	<input type="checkbox"/>				
ACT/SAT prep	<input type="checkbox"/>				

Demographics

4. You are a _____
- Freshman
 - Sophomore
 - Junior
 - Senior
5. This year is your _____ in AVID?
- First year
 - Second year
 - Third year
 - Fourth year
6. Are you planning on staying in AVID next semester?
- Yes
 - No
7. If you chose “No” to the previous question, please indicate the degree to which each of the following is the reason for you to leave the program.

<i>Reason</i>	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
There is nothing new for me to learn in this program	<input type="checkbox"/>				
It is too much work	<input type="checkbox"/>				
Other courses I'd like to take are more important than AVID	<input type="checkbox"/>				
I have not seen improvement on myself	<input type="checkbox"/>				

Comment

If you have other thoughts or suggestions about AVID, please write them here.

--

Note. Adapted from “District X Avid Student Survey” by District X, 2011.

Appendix M: District X Approval to Conduct Research

Request to Conduct Research in [REDACTED] Schools

November 30, 2011

Researcher: Jill K. Bergerhofer
 Address: 16409 Horton, Stilwell, KS 66085
 Phone: jillkbergerhofer@stu.bakeru.edu -4366, (C) 816-809-4852
 Email: jbergerhofer@bluevalleyk12.org
 Adviser: Dr. Brad Tate, Baker University brad.tate@bakerU.edu
 [REDACTED] Staff Consulted: [REDACTED]
 Schools Involved in Study: All five [REDACTED] High Schools

Description of Study:

In order to fulfill the requirements for the dissertation in my doctoral program through Baker University, I am requesting access to the following forms of academic data specific to [REDACTED] District high school students recommended for participation in the AVID program in the years 2008, 2009, 2010, and 2011.

1. Individual ACT Plan composite scores.
2. Individual ACT composite scores.
3. Individual KSA performance scores for reading and math.
4. Most current cumulative semester GPAs.

The data for this study will need to be obtained during the winter of 2011-12, which is the estimated time frame for my IRB approval. Data analysis will tentatively be completed by February of 2012, and the final dissertation document will be submitted and defended in April of 2012.

The data will be used to determine whether a relationship exists between participation in AVID and students' academic performance. Additionally, the population will be sorted by students recommended for and enrolled in AVID and those who were recommended and did not enroll. The student information system and data warehouse data will be used to determine scores on the Kansas State Assessment of Reading and Math, scores on the Plan and actual ACT, and GPA (college and non-college preparatory). The data will be analyzed using a 2-sample *t*-test.

At no time in the research or in the subsequent publication of the study will any student names or identifying information be released or published. The names of the five existing [REDACTED] High Schools will not be mentioned. Comparisons of the data from the five high schools will not be conducted. Additionally, the same confidentiality measures required of me as a district mentor and member of the Education Services Support Team for [REDACTED] School District will be employed at all times as the data is being collected, handled, and analyzed for this study.

Approved: _____



12/9/2011

Appendix N: Baker University IRB Application



Date: March, 15, 2013

SCHOOL OF EDUCATION

IRB PROTOCOL NUMBER _____

GRADUATE DEPARTMENT

(IRB USE ONLY)

IRB REQUEST

Proposal for Research**Submitted to the Baker University Institutional Review Board****I. Research Investigator(s)** (Students must list faculty sponsor first)**Department(s)** **School of Education Graduate Department**

Name	Signature	
1. Brad Tate	_____	Major Advisor
2. Katie Hole	_____	Research Analyst
3.		University Committee Member
4.		External Committee Member

Principal Investigator: Jill K. Bergerhofer

Phone: 913-814-0701

Email: Bergerhofer@sbcglobal.net

Mailing address: 16409 Horton

Stilwell, KS 66085

Faculty sponsor:

Phone:

Email:

Expected Category of Review: ___Exempt X Expedited ___Full

II: Protocol: (Type the title of your study)

The Impact of AVID Participation on Academic and Non-Academic Measures of
College Readiness

Summary

In a sentence or two, please describe the background and purpose of the research.

AVID is a comprehensive school reform model targeting students in the academic middle to help them develop postsecondary readiness skills. The purpose of this study is to determine whether participation in AVID has an impact on academic and non-academic facets of college readiness.

Briefly describe each condition or manipulation to be included within the study.

No manipulation will occur in this study.

What measures or observations will be taken in the study? If any questionnaire or other instruments are used, provide a brief description and attach a copy.

To assess impact on academic facets, the researcher will analyze (1) composite scores on the PLAN and the ACT tests; (2) students' most recent performance on the KCA reading and the KCA math tests; and (3) students' most current high school GPAs.

To assess the perceived impact on non-academic skills necessary for college readiness, the researcher will administer a survey to AVID-enrolled students (see attached). The survey will measure three areas of non-academic facets of college readiness. Part 1 will measure AVID students' perceived helpfulness of the Program Components in preparing each respondent for college success (Cornell Notes, Socratic Seminars, tutorials, tutors, college visits, ACT/SAT prep, push from AVID teacher, staying with the same classmates, and staying with the same teacher). Part 2 of the survey will ask respondents to rate the Program Benefits (note-taking skills, test-taking strategies, presentation skills, organization skills, writing skills, study skills, self-confidence, self-expectation, self-discipline, self-advocacy, engagement in class, and school enrollment) in terms of the degree of personal improvement. Part 3 of the survey, Demographics, will collect data on respondents' high school grade level, number of years enrolled in AVID, and plans to stay enrolled in AVID in the coming semester.

Will the subjects encounter the risk of psychological, social, physical or legal risk? If so, please describe the nature of the risk and any measures designed to mitigate that risk.

Subjects will not encounter any risk - academic data will be accessed through the District X student information system by student school ID numbers, which ensures students' identities remains anonymous. Also, by using SurveyKey.com to administer the student survey through the AVID elective classes, responses will be accessed and analyzed without requiring subjects' identities.

Will any stress to subjects be involved? If so, please describe.

Subjects will not be involved in any stress.

Will the subjects be deceived or misled in any way? If so, include an outline or script of the debriefing.

Subjects will not be deceived or misled in any way.

Will there be a request for information which subjects might consider to be personal or sensitive? If so, please include a description.

There will not be any request for information which subjects might consider to be personal or sensitive.

Will the subjects be presented with materials which might be considered to be offensive, threatening, or degrading? If so, please describe.

Subjects will not be presented with materials which might be considered offensive, threatening, or degrading.

Approximately how much time will be demanded of each subject?

No more than a normal class period, which is approximately 45 minutes.

Who will be the subjects in this study? How will they be solicited or contacted? Provide an outline or script of the information which will be provided to subjects prior to their volunteering to participate. Include a copy of any written solicitation as well as an outline of any oral solicitation.

Participants in this study will include students identified by District X staff as meeting the criteria for enrollment in the AVID program. The only contact will be with students in the AVID participants sub-group through the AVID student survey. AVID teachers will be sent an email by the District X AVID program manager requesting they schedule time during class for students to complete the survey. The email will contain a link for the students to use to access the survey.

What steps will be taken to insure that each subject's participation is voluntary? What if any inducements will be offered to the subjects for their participation?

The email from the District X AVID program director will instruct AVID teachers to clearly communicate to the students that their completion of the survey is voluntary.

How will you insure that the subjects give their consent prior to participating? Will a written consent form be used? If so, include the form. If not, explain why not.

A written consent will not be used; students consent will be evidenced by their decision to complete the survey.

Will any aspect of the data be made a part of any permanent record that can be identified with the subject? If so, please explain the necessity.

No aspect of the data will be made a part of any permanent record that can be identified with the subjects.

Will the fact that a subject did or did not participate in a specific experiment or study be made part of any permanent record available to a supervisor, teacher or employer? If so, explain.

The fact that a subject did or did not participate in a specific experiment or study will not be made part of any permanent record available to a supervisor, teacher, or employer.

What steps will be taken to insure the confidentiality of the data? Where will it be stored? How long will it be stored? What will be done with it after the study is completed?

Academic data obtained using subjects' District X student identification numbers will be secured by the District X Director of Data and Assessment. At no time will the researcher have possession of students' identification numbers, names, or high schools.

Survey data will be completely anonymous. It will be accessed from the District X SurveyKey.com account.

The academic and survey data will be stored in Excel worksheets on the researcher's laptop and jump drive until it is analyzed using SPSS. The raw data will kept on the researcher's laptop and jump drive files for three years, after which it will be destroyed.

If there are any risks involved in the study, are there any offsetting benefits that might accrue to either the subjects or society?

There are no risks involved in this study; therefore, there will not be offsetting benefits that might accrue to either the subjects or society.

Will any data from files or archival data be used? If so, please describe.

Archived data will be used, which includes academic data including participants' scores on the following standardized tests taken between 2009 and 2012: KCA reading and math tests, the PLAN, the ACT, and most recent GPA will be obtained from the District X student information system or data warehouse.

Appendix N: Baker University IRB Approval



March 25, 2013

Ms. Jill K. Bergerhofer
16409 Horton
Stilwell, KS 66085

Dear Ms. Bergerhofer:

The Baker University IRB has reviewed your research project application (E-0166-0321-0325-G) and approved this project under Expedited Review. As described, the project complies with all the requirements and policies established by the University for protection of human subjects in research. Unless renewed, approval lapses one year after approval date.

The Baker University IRB requires that your consent form must include the date of approval and expiration date (one year from today). Please be aware of the following:

1. At designated intervals (usually annually) until the project is completed, a Project Status Report must be returned to the IRB.
2. Any significant change in the research protocol as described should be reviewed by this Committee prior to altering the project.
3. Notify the OIR about any new investigators not named in original application.
4. Any injury to a subject because of the research procedure must be reported to the IRB Chair or representative immediately.
5. When signed consent documents are required, the primary investigator must retain the signed consent documents for at least three years past completion of the research activity. If you use a signed consent form, provide a copy of the consent form to subjects at the time of consent.
6. If this is a funded project, keep a copy of this approval letter with your proposal/grant file.

Please inform Office of Institutional Research (OIR) or myself when this project is terminated. As noted above, you must also provide OIR with an annual status report and receive approval for maintaining your status. If your project receives funding which requests an annual update approval, you must request this from the IRB one month prior

to the annual update. Thanks for your cooperation. If you have any questions, please contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Carolyn Doolittle". The signature is written in a cursive, flowing style with a large initial 'C'.

Carolyn Doolittle, EdD
Chair, Baker University IRB