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A Random Assignment Evaluation of a College and Career Coaching Program

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A Random Assignment Evaluation of a College and Career Coaching Program

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Abstract

Razor C.O.A.C.H. (Creating Opportunities for Arkansan's Career Hopes) is a college and career coaching program for at-risk students in 15 Northwest Arkansas high schools. To perform a random assignment evaluation, at-risk students were targeted to apply to the program, and applicant students were randomly assigned to the program. Academic coaches from the University of Arkansas College of Education and Health Professions utilized a needs-based intervention focusing on pro-academic behaviors, college or technical school preparation, and post-secondary and career exploration. The evaluation included two cohorts of students. Cohort One treatment students received the full intervention throughout the 2012-13 school year, and a follow-up intervention with lower dosage in the 2013-14 school year. Cohort Two treatment students received the full intervention in the 2013-14 school year, meeting with a coach at least once a week in individual or group meetings.

To determine the impact of participation in Razor C.O.A.C.H., I examine the impact of the program on students' academic, short-term non-cognitive, and post-secondary preparation outcomes. The main research questions are:

1. *What is the impact of being assigned a coach on high school academic outcomes (high school GPA, core-subject GPA, credits earned, and ACT performance)?*
2. *What is the impact of being assigned a coach on short-term non-cognitive outcomes (academic self-efficacy, academic responsibility, grit, and future-mindedness) as measured during high school?*
3. *What is the impact of being assigned a coach on post-secondary preparation outcomes (college and career readiness outcomes, FAFSA and scholarship completion, and future plans)?*

The results from the evaluation suggest that the program is impacting students' non-cognitive outcomes, as treatment students display higher levels of self-efficacy and responsibility in school and are preparing for post-secondary life more than the control students. In addition, students feel more accountable to adults at school; however, there is no evidence to suggest that the program is impacting students' academic outcomes overall. These null results on academic measures are consistent with other evaluations of college and career coaching programs. In the future, it will be important to continue to examine the impact of the program by examining longer-term outcomes, including college attendance and graduation.

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Chapter 1 – Introduction

This paper presents a comprehensive random assignment evaluation of the Razor C.O.A.C.H. (Creating Opportunities for Arkansan's Career Hopes) program in the 2013-14 school year. Razor C.O.A.C.H. is a college and career coaching program for at-risk students in Northwest Arkansas school districts. In 15 high schools, at-risk students were targeted to apply for the program, and then applicant students were randomly assigned to participate in the program or serve in the control group.

In this chapter, the issue of post-secondary access and preparation is examined to demonstrate the need for college and career coaching programs. Then, an introduction to the Razor C.O.A.C.H. program is provided, followed by an introduction to the evaluation design and the research questions presented in this evaluation.

The Issues

The percentage of students attending colleges, universities, and other degree-granting institutions has increased steadily over the past three decades in the United States. In 1982, 26.6 percent of 18- to 24-year-olds were enrolled in a degree granting institution, and by 2012, 41.0 percent of that population was enrolled in a degree-granting institution (U.S. Department of Education, 2013). However, low-income and minority students are less likely than their peers to enroll in and graduate from post-secondary institutions. In fact, Bailey and Dynarski (2011) find "growing gaps between children from high- and low-income families in college entry, persistence, and graduation." In 2012, only 52 percent of high school graduates from the lowest income quintile enrolled in college, while 82 percent of high school graduates from the highest income quintile enrolled in college (Clinedinst, 2015). In addition to the income gaps, racial gaps exist in post-secondary attendance and completion. In 2012, only 36.4 percent of black 18-to-24-

year-olds and 37.5 percent of Hispanic 18-to-24-year-olds were enrolled in a degree-granting institution, while 42.1 percent of their white peers were enrolled. While college-going rates have increased for white students, students from minority groups fall behind in college enrollment (Gandara, 2001). In addition, low-income and minority students are more likely to attend less selective schools and are less likely to graduate from post-secondary schools (Cahalan & Perna, 2015).

There are a number of barriers that prevent low-income and minority students' access to and preparation for post-secondary education. One barrier is a lack of information and access to knowledge about post-secondary institutions and the application process, leading to fewer post-secondary opportunities and poor matches between students and institutions. In addition, low-income and minority students are less likely to be prepared for the academic, financial, and social aspects of life after high school. These barriers can be attributed to many social and structural factors, including the role of the school counselor or another individual to provide post-secondary support. In 2011-12, the counselor-to-student ratio in US public schools was 1-to-475 on average (Clinedinst, 2015); however, the recommended ratio is 250-to-1 (Avery et al., 2014). The role of school counselors has been documented to reveal that a typical school counselor fulfills a number of responsibilities, including many noncounseling administrative activities (Avery et al., 2014). Often, school counselors coordinate or oversee student course placement, scheduling, special education placement and accommodations, family communication, mental health counseling, soft skill development, assessments, and school-based programs or events. In addition, high school counselors usually serve as the bridge to students' post-secondary opportunities. The body of evidence reveals that school counselors often are not able to provide the full scope of the services required of their position. Therefore, schools face

the dilemma of whether to hire more counselors, seek alternative staffing arrangements, or allow some tasks to fall aside. At the high school level, post-secondary support is often limited to the latter high school grades, when students need to complete tasks such as signing up for post-secondary assessments, collecting letters of recommendation, or sending their transcripts to post-secondary institutions. A 2014 National Association for College Admission Counseling (NACAC) survey found that the average public high school counselor spends 24 percent of his/her time with post-secondary counseling, while the average high school counselor at a private school spends 52 percent of his/her time on post-secondary counseling (Clinedinst, 2015). The NACAC survey found that 32 percent of public high schools reported having at least one counselor exclusively devoted to college counseling, while 71 percent of private high schools did. Research points to financial barriers and time and training barriers in many public schools preventing schools from hiring additional counselors or post-secondary advisors (Avery et al., 2014).

Therefore, as low-income and minority students are less likely to be prepared for post-secondary success, schools, community centers, non-profits, and others have turned to college and career coaching programs to address the needs of students to be successful for life after high school. An increasing number of programs have sought to increase post-secondary access and prepare at-risk students for life after high school. In fact, a 2014 *New York Times* article highlights the "new push to get low-income students through college," by examining college access and preparation programs (Leonhardt, 2014). Based on the Educational Longitudinal Survey of 2002, 5% of students in public high schools participated in programs designed for disadvantaged students to address post-secondary access and preparation (Domnia, 2009). However, in the past 13 years, a number of college access and preparation programs have

opened. One of those programs is the National College Advising Corps, which started in 2005 and serves low-income students in 14 states. Post-secondary access and preparation programs vary in design, scope, focus, and in other traits; but the common premise of post-secondary access and preparation programs are to prepare students for success after high school.

Razor C.O.A.C.H.

To better prepare students for post-secondary success, the state of Arkansas created the Arkansas Works College and Career Coach Program to target the counties in the state with the lowest average income (Arkansas Department of Career Education, 2012). Since the northwestern counties of Arkansas did not qualify in this category, Northwest Arkansas school districts could not benefit from the program. However, the Northwest Arkansas Council, charged with supporting the region, recognized that there was a gap in post-secondary support for students in the local school districts. Therefore, the Council decided to create a program for at-risk students in the region through private funding. The Council's Educational Excellence Work Group collaborated with the University of Arkansas College of Education and Health Professions, the Walton Family Foundation, the Northwest Arkansas Service Cooperative, and local school districts to create a college and career coaching program called Razor C.O.A.C.H. (Creating Opportunities for Arkansan's Career Hopes). The Razor C.O.A.C.H. program is housed in the Counselor Education Department at the University of Arkansas College of Education and Health Professions. In the 2012-13 school year, the program worked in 16 high schools in Northwest Arkansas; and in the 2013-14 school year, the program worked in 15 high schools.[1]

[1] Gravette High School in the Gravette School District left the program after the 2012-13 school year, and so no students from the school were served by the program in the 2013-14 school year.

The stated mission of the Razor C.O.A.C.H. program is "to improve high school retention and graduation rates, increase the number of Northwest Arkansas students who pursue education after high school, and build the Northwest Arkansas work force" (Razor C.O.A.C.H.). The program targets at-risk students with one or more of the following characteristics: low GPA, eligible for free-or-reduced lunch (FRL), failed End-of-Course state exam, repeated grade(s), limited English proficiency, minority student status, poor attendance rates, teenage pregnancy/mother, and potential first generation college students. Targeted students were asked to complete an application (which included a parental survey allowing data collection), and applicant students were randomly selected to participate in the program or serve in the control group. The program placed 25 treatment students with a masters- or doctorate-level counseling student (the "coach"). Coaches used information from student applications and surveys and information from student's teachers and counselors to initially guide the intervention; and as the semester progressed, coaches tailored interventions to individual students. Factors, such as grade-level and academic background and needs, played a role in the type of interventions students received. Interventions included: examining post-secondary options, career exploration, ACT/SAT test taking strategies and practice, financial aid and FAFSA support, career assessments and skill building, teaching time management skills, and teaching study/test-taking skills and other pro-academic skills. Coaches shared resources throughout the year; however, given that the curriculum was needs based, the particular details of the intervention varied by coach and by student. Coaches were required to meet with students at least two times a month for first year students (Cohort Two) and at least one time a month for second year students (Cohort One).

Random Assignment Evaluation

The Razor C.O.A.C.H. program received an initial three-year grant from the Walton Family Foundation to operate in Northwest Arkansas high schools. Under the grant, the Office for Education Policy is required to evaluate the impact of the program on students for each of the three years of the grant. The program and evaluators decided to utilize a random assignment lottery of applicant students for a number of reasons, including oversubscription, fairness in selection, and for the purposes of a rigorous evaluation. With a random assignment design, the evaluation is able to determine the causal impact of participation in the program (Cook & Campbell, 1976; Wolf et al., 2010).

In this study, I evaluate the second year of the program (the 2013-14 school year). This evaluation includes two cohorts of students: Cohort One (entered the program in 2012-13) and Cohort Two (entered the program in 2013-14). Cohort One's treatment students received a full intervention in the 2012-13 school year and a lesser dosage of intervention in the 2013-14 school year. The program referred to Cohort One as "booster students," because of the nature of the lesser intervention during the second year of the program. Cohort Two's treatment students received the full intervention in the 2013-14 school year. Control students had no interaction with the coaches; therefore, the evaluation is able to determine the impact of participation in the program, as the differing factor between the treatment and control groups was participation. The evaluation is considered to be intent-to-treat, as all students who applied to the program are included in the analysis.

Research Questions

To determine the impact of participation in the Razor C.O.A.C.H. program, I examine the impact of the program on students' academic, short-term non-cognitive, and post-secondary preparation outcomes. The three main research questions are:

1. *What is the impact of being assigned a coach on high school academic outcomes?* The evaluation measures the change in academic outcomes from the year prior to intervention as compared to the year of the intervention. The academic outcomes include high school GPA, core-subject GPA, credits earned, and ACT performance.
2. *What is the impact of being assigned a coach on short-term non-cognitive outcomes as measured during high school?* The non-cognitive outcomes include: academic self-efficacy, academic responsibility, grit, and future-mindedness.
3. *What is the impact of being assigned a coach on post-secondary preparation outcomes?* The post-secondary preparation outcomes include: college and career readiness self-perception outcomes; FAFSA and scholarship completion; and future plans.

To answer the first research question, all applicant students' academic transcripts were collected from the year prior to the intervention and the year of the intervention. To answer portions of the second and third research questions, a survey was administered to treatment and control students at the end of the 2013-14 school year. By performing a random assignment evaluation, any positive and statistically significant differences between the treatment and control groups can be attributed to the intervention.

Paper Organization

In the second chapter of the paper, I provide a review of research regarding college and career coaching programs and interventions. In this review, I find that there are a growing

number of evaluations of college and career programs, but this evaluation will add to the literature since it is a rigorous evaluation with a random assignment design. In the subsequent chapter, I present a descriptive overview of the program, partner schools, and applicants. In the fourth chapter, I describe the methods of the evaluation, including the surveys administered to students. Chapter five reveals the results of the program, by examining the academic, non-cognitive, and post-secondary preparation outcomes. To conclude, in chapter six, I discuss the results, future analyses of the program, and provide program and policy recommendations, based on the results of the random assignment evaluation.

Chapter 2 – Literature Review

As low-income and minority students are less likely to attend and graduate from post-secondary institutions, an increasing number of programs have opened to prepare high school students for post-secondary success. College and career access and preparation programs range from school-based programs in high schools to community-based or partner-based programs, offered during the school year or during summer months. These programs may have a variety of focuses, including academic achievement, college entrance test preparation, applications for college or other post-secondary options, and matriculating to college or other post-secondary options. Therefore, research on the effectiveness of college and career access and preparation programs measure varied outcomes including: academic outcomes in high school and college; non-cognitive outcomes including college-going mindsets and persistence mindsets; and longer-term outcomes, such as college graduation and earnings.

While there are a growing number of college and career access and preparation programs, there is limited rigorous research examining the effectiveness of these programs. This rigorous evaluation of Razor C.O.A.C.H. adds to the literature on college and career access and preparation programs. It also adds value to the field of rigorous education research, as it is a random assignment evaluation. In fact, the Institute of Education Science's What Works Clearinghouse lists only 242 education-related randomized controlled trials (U.S. Department of Education, 2015).

In this chapter, I begin by presenting a review of the research examining barriers to post-secondary access and enrollment. Then, I comprehensively review the research on the effectiveness of college and career access and preparation programs by examining and systematically synthesizing the results of all rigorous evaluations to date on such programs.

Barriers to Post-Secondary Education

Low-income and minority students attend post-secondary institutions at lower rates than their peers; therefore, educators and researchers examine the barriers that prevent post-secondary access and enrollment. In this section, I provide evidence that two primary barriers to attending a post-secondary institution for low-income and minority students: a lack of information and a lack of guidance necessary to access and be matched to post-secondary institutions. These barriers are created through various mechanisms, whether through a lack of school involvement, parental involvement, and/or other forms of social capital.

The conversation about post-secondary access typically revolves around the academic and financial barriers that may prohibit post-secondary education for certain students. Educators and researchers focus on the achievement gaps that exist between low-income and minority students and their peers and the lack of academic preparation necessary to enroll and succeed in post-secondary institutions. In addition, educators, economists, and researchers point to the increasing cost of post-secondary education.

While these barriers are significant, there are other barriers less widely talked about. Kelly et al. find that financial barriers and academic preparation are "clearly important concerns;" however, Kelly et al. (2014) point to a growing body of evidence showing that there are other barriers prohibiting low-income and minority students from applying to and attending post-secondary institutions. Kelly et al. (2014) define barriers for low-income and minority students, describing them as the "bottlenecks." For certain students, access to post-secondary education is prohibited according to "knowledge, skills, and abilities;" however, Kelly et al. (2014) conclude that "qualified students with college aspirations often fail to complete the steps necessary to make the jump to college." For example, in a study of Chicago Public school

students, Roderick et al. (2008) find that among students who aspire to attend college, only 41% took the steps to apply to college. In a 2001 paper, Cabrera & La Nasa explain that the likelihood of attending college is explained by three tasks: acquiring college qualification, graduating from high school, and applying to a college. Using the National Education Longitudinal Survey of 1988, Cabrera and La Nasa (2001) find that 81% of those who complete those three things enroll in college by 1994. However, only 10% of low-income students from the 1988 dataset enroll in college; and Cabrera and La Nasa (2001) show that it may be primarily due to a lack of the third task, applying to college. In another study of post-secondary enrollment, Avery and Kane (2004) find that 45 percent of students in Boston public schools with at least a 3.0 grade point average, who self-identified as wanting to attend a four-year college at the start of 12th grade, do not attend a post-secondary institution the fall after high school gradation. These studies and others show that academic performance is not always the primary barrier to post-secondary enrollment, but there are other barriers that prevent access to post-secondary institutions for low-income and minority students.

A growing body of research points to a lack of information, or information asymmetry, as a primary barrier preventing low-income and minority students from applying to and attending post-secondary institutions. Students must complete a number of tasks in order to receive scholarships and financial aid to attend college; and in many cases, students simply do not receive the information to do so. In a 2012 study, Hoxby and Avery examine college applications and enrollment to conclude that funding for many low-income students exists through scholarships and federal grants; however, low-income students do not have access to information about avenues for funding or simply do not access all avenues of funding. In follow-up random assignment evaluation, high-achieving low-income students were randomly assigned to receive

an intervention called the Expanding College Opportunities Project (Hoxby and Turner, 2013). Randomly selected students received information about applying to post-secondary institutions, including selective institutions, with application guidance and customized reminders for requirements and deadlines. In addition, students received fee waivers for applications to selective colleges and semi-customized information with net costs of colleges to break down perceptions of financial barriers. Hoxby and Turner (2013) found that the intervention increased students' likelihood of applying and attending colleges with stronger academic records, higher graduation rates, and more generous resources.

In addition to completing applications to post-secondary institutions, students have to complete other tasks, including taking college entrance exams, college placement exams, and financial aid forms. The Free Application for Federal Student Aid (FAFSA) requires students and a parent/guardian to complete. While the federal government has sought to streamline the process, it remains too confusing for many families (Bettinger et al., 2009). In a study in Chicago public schools, Roderick et al. (2008) find that many low-income students do not complete the Free Application for Federal Student Aid (FAFSA); and when low-income students do not complete the FAFSA, they are much less likely to attend college. In a 2009 study by Bettinger et al., low- to moderate-income families were randomly assigned to receive an intervention by H&R Block for the FAFSA. One randomly assigned group received assistance in completing the FAFSA and received an estimate of their eligibility for aid and information about postsecondary options. Another randomly assigned group received information about aid eligibility, but these families did not receive support to complete the FAFSA. Bettinger et al. (2009) find that students from the group that received information and assistance were more likely to submit the FAFSA, enroll in college, and receive increased amounts of financial aid.

Barriers exist not only in applying to post-secondary institutions, but for enrolling in institutions. In a 2015 paper, Arnold et al. examine the period of time between high school graduation and the fall semester for "college-intending students." Arnold et al. (2015) cite data showing that 20 to 44 percent of low-income students who graduate high school and intend to attend college do not enroll in the fall semester, a phenomenon that Arnold et al. term "summer melt." In a random assignment evaluation, Castleman and Page (2014) find that on-time enrollment increased by 5 percentage points for students who received information and support over the summer months on financial aid and required pre-matriculation tasks and paperwork to begin classes. In another random assignment evaluation, Castleman and Page (2014) examined interventions by text message that reminded students of required tasks for enrolling in college. They found that the intervention increased college enrollment, specifically at two-year colleges, for students who did not receive academic-year support in college access and enrollment. With another random assignment evaluation, Castleman et al. (2012) examined a counselor intervention program for low-income students in seven high schools in Providence, RI during the summer months between high school and post-secondary school. The counselors provided information to students on financial aid and other required pre-matriculation tasks and paperwork. Castleman et al. found that students who received the intervention were more likely to enroll in college (by 14 percentage points) and more likely to maintain the postsecondary plans they developed in 12th grade (by 19 percentage points).

Educators and researchers also point to a lack of social capital for low-income and minority students. Low-income and minority students are less likely to receive guidance, whether from their peer, school, parent, or another form of social capital, necessary to pursue a post-secondary education. High school students need support in applying to post-secondary

institutions, matching to post-secondary institutions, and applying for financial aid and scholarships (Stephan and Rosenbaum, 2013). In addition, high school students may need emotional supports and broader networks that offer support. However, low-income and minority students are less likely to receive these types of support (Stephan and Rosenbaum, 2013). As discussed in chapter 1, there are often higher student-counselor ratios in low-income and high-minority schools (Avery et al., 2014; Clinedinst, 2015). In addition, low-income and high-minority schools have other barriers that may prevent students from receiving the necessary support. In a study examining high-achieving low-income students, Hoxby and Avery (2014) find that high-achieving low-income students who do not apply to selective colleges are more likely to be in small districts, without a "critical mass of fellow high achievers," and are less likely to have a teacher who attended a selective college. Hoxby and Avery (2014) conclude that these students "do not have parents or counselors who ensure that they know something about peer institutions."

As illustrated, there are a number of barriers that may prevent low-income and minority students from attending post-secondary institutions. The barriers that exist include academic preparation and financial restrictions; however, there are other less tangible barriers, including a lack of information and a lack of guidance necessary to access and be matched to post-secondary institutions. College access and career coaching programs seek to overcome these latter barriers, so that at-risk students can access and attend post-secondary institutions.

Review of research on college access and career preparation programs

To understand how to evaluate the Razor C.O.A.C.H. program and to provide context for the results of the evaluation, it is important to review the effectiveness research examining college and career access and preparation programs. I begin the review by developing a sound

definition of college and career access and preparation programs and developing criteria for what to include in the review. Then, I provide a comprehensive review of the research on college and career access and preparation programs and identify the rigorous evaluations conducted on programs. In doing so, I am able to provide a literature review that is relevant for the program and the evaluation.

Literature Review Process: Definition and Selection Criteria

For the purposes of this literature review, college and career access and preparation programs are defined as any program with an intervention by personnel that comprehensively works with students on college and career access and preparation prior to exiting secondary school. In order to develop criteria to determine whether a program should be included in this literature review, it is important to unpack this definition. The review will include any program or intervention that has the goal of developing students for success after high school, whether directly into college or into careers. The interventions may be school-based, philanthropic-based, community-based, or partner-based programs offered during the school year or during summer months. However, for the purposes of this literature review, any evaluation of a school model is excluded, as whole school reforms are not comparable to Razor C.O.A.C.H. and other college and career access and preparation programs. For example, Kemple et al. (2005) is excluded, as it examines a whole school model, the Talent Development High School.

The programs included in the literature review may have a variety of interventions centered around college and career access and preparation, including academic achievement, post-secondary test preparation, applications for college or other post-secondary options, college or post-secondary matching, career matching, and matriculating to college or other post-secondary options. In this literature review, programs with a focus on more than one outcome are

considered; therefore, programs with a single-focused intervention are eliminated from the literature review. For example, an evaluation of incentive payments for Advanced Placement (AP) exams (Jackson, 2014) and evaluations of programs whose sole focus is ACT or SAT test preparation programs are excluded. In addition, Bettinger et al. (2009) is excluded, as it is a single-focused intervention, providing support to families on FAFSA completion. In order to be included in the literature review, the program delivers the intervention at the secondary level, prior to a student exiting high school. For example, Castleman et al. (2012) is excluded as it is an intervention delivered in the summer months after high school graduation to focus on supporting students for college pre-matriculation tasks and paperwork. This program and other programs addressing the "summer melt" issue are different from Razor C.O.A.C.H., as the summer programs work with students who have already applied and been admitted to post-secondary schools.

In addition, in this literature review, in order to be included as a college and career access and preparation program the intervention must be delivered by personnel. Since Razor C.O.A.C.H is a program that places coaches with students in high schools, it is important to compare Razor C.O.A.C.H. to other programs that are personnel-based. For the purposes of this literature review, programs with alternative interventions are excluded. For example, an evaluation of a program that sends text messages to students to drive college enrollment is excluded (Castleman and Page, 2014). In addition, the program must exist in the United States, as secondary and post-secondary systems are different in other countries.

Therefore, with the definition of college and career access and preparation programs firmly established, the guidelines for the types of programs included in the literature review are as follows:

- Programs addressing college and career access and preparation
- Programs with interventions primarily delivered by personnel
- Programs with interventions that focus on multiple outcomes and not a single outcome
- Programs that work with students at the secondary level, prior to exiting high school
- Programs administered in the United States.

To provide a literature review that describes the up to date state of the evidence on the effectiveness of these types of programs, it is important to restrict the review to evaluations that are relevant and of high quality. The intent of the literature review is to collect studies that examine the effectiveness of programs by evaluating measured short-term or long-term outcomes. With the above criteria, qualitative studies and studies that utilize non-rigorous methods are excluded. For example, "Beating the Odds: How Thirteen NYC Schools Low-Performing Ninth-Graders to Timely Graduation and College Enrollment" was excluded, as it is a qualitative analysis that shares best practices based off of non-rigorous methods (Ascher and Maguire, 2007). This guideline was established to avoid studies that provide soft evaluations of programs without quantitative evidence to verify the evaluation and to avoid studies that solely provide opinions about programs. Lastly, to be included in the literature review, the research had to be conducted in 1980 or later. As the post-secondary environment has changed in the past fifty years, this date was selected to include relevant programs. It is important to note that only published studies are included in this literature review. By including only published studies, bias may occur, as studies are more often published when revealing a result, whether negative or positive. Therefore, in order to be included in this literature review, the evaluation must:

- Evaluate the effectiveness of the program

- Include short-term and/or long-term quantitative outcomes, including but not limited to: academic outcomes in high school and college; non-cognitive outcomes including college-going mindsets and persistence mindsets; and long-term outcomes, such as college graduation and earnings
- Utilize quasi-experimental or experimental methods
- Be conducted in 1980 or later.

Literature Review Process: Application of Selection Criteria

After developing the definition and selection criteria for evaluation of programs, I sought to identify all relevant studies. To do so, I used the following search engines of electronic databases: University of Arkansas library resources (Ebsco databases and JSTOR) and Google Scholar. I also searched academic and non-academic journals and websites including the National Bureau of Economic Research, Journal of Policy Analysis and Management, Education Finance and Policy, Educational Evaluation and Policy Analysis, Mathematica Policy Research, American Institutes for Research, and the What Works Clearinghouse. In these databases, I used the following search terms to identify relevant studies: "college and career access and preparation program" OR "college and career coaching program" OR "college access program" OR "college preparation program" OR "career preparation program" OR "college and career preparation intervention" OR "college and career readiness program" AND "effectiveness" OR "evaluation" OR "impact." In order to ensure all rigorous evaluations were included, I conducted further searches with "random assignment" attached to the search terms. As these search terms resulted in a large number of hits, I first conducted a review of titles to decide which abstracts to examine. When the titles began to become irrelevant to my search, I stopped looking through the search engine with that search term. After that preliminary review of titles, I examined the

abstracts of the studies to determine which should be included. In the abstract review, I focused on the characteristics of the program, the methods used in the evaluation, and the outcomes measured. I eliminated studies that did not follow the outlined criteria about the program or the evaluation. After the abstract review, I examined the retained articles to ensure that the studies were relevant to this literature review. Lastly, to ensure that I included all studies of relevance, I conducted a review of the works cited or bibliography section of the retained articles. In addition, I used a review of literature on college and career access and preparation programs by Domina (2009) to check my findings. By using these methods, I am confident that I am presenting a comprehensive review of the research on college access and career preparation programs that are relevant to the Razor C.O.A.C.H. program.

Literature Review Findings

As a result of the search process, a total of 11 studies are included in this literature review, including six random assignment evaluations and five quasi-experimental evaluations (Table 2.1). In a 2001 report by NCES, Gandara concludes that "although thousands of early intervention programs [addressing post-secondary] exist across the nation, data about whether they work, or for whom and under what circumstances, are generally sparse." Since 2001, there have been a number of evaluations measuring the effectiveness of college and career access and preparation programs; however, in a 2009 report, Domina provides a similar conclusion to Gandara (2001). Domina (2009) reviews five quasi-experimental or experimental evaluations of four college and career access and preparation programs. In the six years since 2009, there have been additional studies published on college and career access and preparation programs. In Table 2.1 below, Domina's review of literature is expanded by including all experimental or

quasi-experimental studies that have been published by May 2015, as outlined by the selection criteria in the section above.

Table 2.1: A review of experimental or quasi-experimental published research on college access and preparation programs, adopted and updated from Domina (2009)

Study	**Program**	**Method**	**Sample**	**Outcome Measure(s)**	**Results**
Hahn (1994); Schirm et al. (2006)	Quantum Opportunities Program	Experimental	Hahn et al.: 200 students Schirm et al.: 1069 students entering 9th grade	High school graduation; college enrollment and graduation; employment	Mixed Hahn et al. (1994): Positive on high school graduation Schirm et al. (2006): Null impact on high school graduation; null impact on post-secondary enrollment or graduation
Kemple & Snipes (2000)	Career Beginnings	Experimental	1,574 11th grade students	College enrollment;	Positive Positive impact on college enrollment
Bergin et al. (2007)	EXCEL	Experimental	83 8th grade students	Academic performance; non-cognitive measures; post-secondary enrollment	Null Null impact on academic performance Null impact on post-secondary enrollment; however, treatment students more likely to attend sponsoring college
Chaplin et al. (2010)	Roads to Success	Experimental	1,400 7th-8th grade students	Student non-cognitive; career exploration	Limited No overall impacts on students' ambitions or motivations for learning job skills No impact on study skills Positive impact on knowledge about best-fit jobs and requirements for jobs Positive impact on discussing academic and career plans with school staff
Carrell & Sacerdote (2013)	Dartmouth mentoring/ coaching program	Experimental	1,150 12th grade students	Post-secondary enrollment and persistence	Limited Increased post-secondary enrollment and persistence for women; null impacts for men
Constantine et al. (2006)	Talent Search	Quasi-experimental	6,186 9th grade students; 54,529 matched comparison 9th grade students	Financial aid applications; college enrollment	Positive Positive impact on completing financial aid applications Positive impact on college enrollment; larger for two-year institutions

Study	Program	Method	Sample	Outcome Measure(s)	Results
Standing et al. (2008)	GEAR UP	Quasi-experimental	4,692 7th grade students	Academic performance; attendance; discipline; post-secondary awareness	Limited No impact on academic performance, attendance, or discipline Positive impact on student and parent knowledge of post-secondary options
Seftor et al. (2009)	Upward Bound	Quasi-experimental	1,296-1,677 high school students	Post-secondary enrollment and graduation	Limited Positive impact on enrollment in selective post-secondary institutions Positive impact on post-secondary graduation
Avery (2013)	College Possible	Quasi-experimental	238 11th and 12th grade students	College applications submitted; College acceptance; College enrollment; ACT scores	Limited Positive impact on applications submitted and application to 4-year institutions No impact on college enrollment or ACT scores
Stephan & Rosenbaum (2013)	Chicago Public Schools coaching program	Quasi-experimental	44,627 high school students	College prep tasks; college enrollment	Limited Positive impacts on students completing college prep tasks Null overall impact on college enrollment, but positive impact on impacts on the types of colleges that students attend

From Table 2.1, it is evident that the research on college access and career preparation programs finds limited results at best. The evaluations examine various outcomes, including high school academic performance, high school graduation, college preparation outcomes, non-cognitive outcomes, post-secondary enrollment, post-secondary graduation, and career outcomes.

Academic Outcomes

When examining the academic impact of college and career coaching programs, the review of literature reveals null results (Bergin et al., 2007; Standing et al. 2008; Schirm et al., 2006), though high school academic performance was only measured in three of the eleven evaluations. In a 2007 random-assignment evaluation of a college access program, Bergin et al. examine the impact of the EXCEL program on students who began the program in 8th grade. The EXCEL program provided college access, including a scholarship to the sponsoring university. Bergin et al. find null impacts on academic performance and null impacts on college enrollment; however, students in the program were more likely to attend the sponsoring universities. Standing et al. (2008) evaluate the Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP) that provides tutoring, mentoring, and college and career coaching for low-incomes students. With a quasi-experimental study, Standing et al. compared middle school students in GEAR UP compared to similar middle school students at similar schools without GEAR UP. Standing et al. find no impact on academic performance, attendance, and discipline measures; however, Standing et al. find positive impacts on students' and parents' knowledge of post-secondary opportunities and positive impacts on parent perceptions and expectation for their students.

Non-Cognitive and Post-Secondary Preparation Outcomes

Non-cognitive and college preparation outcomes are examined in a number of evaluations to find mixed results (Chaplin et al., 2010; Constantine et al., 2006; Avery, 2013; Stephan & Rosenbaum, 2013). As described by Chaplin et al. (2010), the Roads to Success Program is a school and career planning intervention for 7^{th} – 12^{th} grade students, implemented for 45 minutes a week at school. With a random assignment evaluation, Chaplin et al. find limited impacts on non-cognitive and career exploration outcomes. The program has no overall impact on students' ambitions or motivations for learning job skills and no impact on study skills. However, the program has a positive impact on student knowledge about best-fit jobs and the requirements for those jobs. In addition, the evaluation finds a positive impact on students discussing academic and career plans with school staff, but no impact on discussing those matters at home. Constantine et al. evaluate Talent Search, a federally funded post-secondary preparation TRIO program. With a quasi-experimental design, Constantine et al. examine the impact of Talent Search on 9^{th} grade students in four states. Constantine et al. find positive impacts on completing financial aid applications and post-secondary enrollment, with a larger impact on attending two-year institutions. In a random assignment study of the College Possible, a non-profit college access program in Minneapolis and St. Paul, Minnesota, Avery (2013) evaluates the college access program for low-income high school juniors and seniors. The evaluation finds positive impacts on applications and enrollment to four-year colleges and selective four-year colleges (Avery, 2013). However, Avery (2013) finds no impact of the program on ACT performance or college enrollment overall. In a 2013 quasi-experimental evaluation, Stephan & Rosenbaum examine the impact of a new counseling model in Chicago public schools that provides college-related resources to high school students. Stephan &

Rosenbaum (2013) find positive impacts on student completion of college prep tasks (applying to college, completing the FAFSA, etc). However, the evaluation finds a null overall impact on college enrollment, but positive impacts on the types of colleges that students attend (Stephan & Rosenbaum, 2013).

Post-Secondary Outcomes

Finally, college enrollment is examined in many of the evaluations to find positive impacts with some programs (Hahn,1994; Kemple & Snipes, 2000; Carrell & Sacerdote, 2012; Constantine et al., 2006; Seftor et al., 2009) and null impacts with other programs (Schirm et al., 2006; Avery, 2013; Stephan & Rosembaum, 2013). In a 2000 evaluation of the Career Beginnings program, Kemple and Snipes (2000) used a random assignment design to determine the impact of participating in Career Beginnings. The program worked with 11th grade students, providing mentoring, post-secondary counseling, and employment opportunities between 11th and 12th grade. Kemple and Snipes (2000) find positive impacts on college enrollment. In a 2012 random assignment evaluation of a late intervention program, Carrell and Sacerdote (2012) examine the effectiveness of college coaching and mentoring during students' senior year of high school. Carrell and Sacerdote (2012) find positive impacts on college enrollment and persistence for women; however, the evaluation finds no impacts for men. The Upward Bound program has been the subject of a number of studies by Mathematica Policy Research since 1991 (Seftor et al., 2009). As a federally funded TRIO program, Upward Bound provides academic and post-secondary support for low-income high school students during the school year and summer months. In the final report of a long-term quasi-experimental evaluation, Seftor et al. (2009) examine the effectiveness of a math and science focused Upward Bound program. Seftor et al. (2009) find positive impacts on enrollment for selective four-year institutions and post-secondary

degree completion. It is important to note that Mathematica's evaluations of Upward Bound programs were not positive on every measure (Myers et al., 2004); but Seftor et al. (2009) found positive impacts on longer-term measures. There are two evaluations of the Quantum Opportunity Program, a program for at-risk high school students in seven school districts funded by the Ford Foundation and the US Department of Labor (Hahn, 1994). The after-school program started with 9th grade students and continued throughout high school, providing educational activities and support, service activities, social development, and college and career development. The Quantum Opportunity Program is not strictly a college access and career preparation program; however, as the program included at least 250 hours of development for college and career support, the program can be considered a college access and career preparation program. Unlike other programs, students were paid stipends to participate in the program and received funding for post-secondary activities. With a random assignment evaluation, Hahn (1994) found positive impacts on high school graduation and college enrollment. However, in a 2006 random assignment evaluation, Schirm et al. examine the long-term impacts of the program to find no impacts on high school graduation or post-secondary enrollment and graduation. In addition, the program did not have academic impacts on students in high school (Schirm et al., 2006).

Conclusion

In conclusion, it is evident that experimental and quasi-experiment evaluations of college and career coaching programs present limited results. The majority of positive results are found on completing tasks for post-secondary entrance and on college enrollment. The limited results on academic outcomes can be explained by a number of different reasons. Chaplin et al. discuss the role of contamination of treatment in school-based programs, where treatment students

interact and share information with non-treatment students (2010). Additionally, other national programs, such as GEAR UP, are so expansive that it is difficult to undergo a program evaluation that does not bend to the mean. In addition, large-scale national programs face issues, including program fidelity and other implementation concerns. When considering high school outcomes, Gandara (2001) examines the lack of positive impacts on high school academic outcomes. Gandara (2001) explains that many of the college access and career preparation programs are peripheral to school and are not able to "fundamentally change the way schools interact with students," which may be necessary when working to change behaviors and patterns for at-risk students. As a personnel-based program, the Razor C.O.A.C.H. program is not a whole school model; and in fact, as the coaches are not employees of the school district and do not daily interact with teachers at the schools, there is reason to believe that the coaches may not be able to influence teacher-student and counselor-student relationships. The Razor C.O.A.C.H. program is similar to the College Possible program, in that non-school personnel provide interventions to students (Avery, 2013). Avery (2013) finds positive impacts on college enrollment with the College Possible program; and on the whole, the promising evidence points to positive impacts on college enrollment. While this evaluation does not yet include complete data on college enrollment, the Office for Education Policy will continue to examine the continued impact of Razor C.O.A.C.H. on college enrollment and college graduation. For now, we are able to consider the impact of the Razor C.O.A.C.H. program on academic outcomes, non-cognitive outcomes, and post-secondary preparation outcomes. My hope is that this evaluation will contribute to the growing literature on what we might expect from these types of programs.

Chapter 3 – Overview of the Razor C.O.A.C.H. Program

In this chapter, I first present a detailed description of the Razor C.O.A.C.H. program. Next, I describe the schools and students in the program, and then, I describe the coaches and the intervention.

Background Information

Razor C.O.A.C.H. (Creating Opportunities for Arkansan's Career Hopes) is a collaborative program between the University of Arkansas College of Education and Health Professions, the Northwest Arkansas Council's Educational Excellence Work Group, and Northwest Arkansas school districts and service cooperative. The program is housed at the University of Arkansas College of Education and Health Professions in the Counselor Education Department. The idea of Razor C.O.A.C.H. initiated from the Arkansas Works College and Career Coach Program. In the 2012-13 school year, the Arkansas Works program had 43 college and career coaches in 21 counties in Arkansas. However, the Arkansas Works program does not serve school districts in Northwest Arkansas, as it targets the counties in the state with the lowest average income. As the Northwest Arkansas Council became aware of the Arkansas Works Program, the Council recognized that Northwest Arkansas could benefit from a similar program. The Northwest Arkansas Council is a nonprofit organization that focuses on "economic development, physical infrastructure, workforce development, and regional stewardship" (Northwest Arkansas Council, 2015). The council sought partners and funding to create a college and career coaching program that would impact students and in turn, have an economic impact in the region. In 2012, the Razor C.O.A.C.H. program was established to operate for an initial three-year period through a $1.5 million grant from the Walton Family Foundation.

Description of the Schools

In the 2013-14 school year, Razor Coach operated in 15 high schools in 13 school districts in Northwest Arkansas: Fayetteville (Fayetteville SD), Lincoln (Lincoln SD), Springdale (Springdale SD), Har-Ber (Springdale SD), Elkins (Elkins SD), Rogers High (Rogers SD), Heritage (Rogers SD), West Fork (West Fork SD), Greenland (Greenland SD), Gentry (Gentry SD), Pea Ridge (Pea Ridge SD), Siloam Springs (Siloam Springs SD), Decatur (Decatur SD), Prairie Grove (Prairie Grove SD), and Bentonville (Bentonville SD). Table B.1 in the Appendix provides the demographic information of these schools. While all of the schools are in Northwest Arkansas, the schools serve student bodies with varied demographics; and there are both rural and suburban schools. The schools have an average of 49% students receiving free-and-reduced lunch (FRL) and 28% minority students. The schools' enrollment numbers range from 222 students (Decatur High School) to 4,144 students (Bentonville High School), with an average enrollment of 1,275 students.

Description of Targeted Students

As the program sought to serve at-risk students, the program outlined the following characteristics of targeted students: low GPA, eligible for free-or-reduced lunch (FRL), failed End-of-Course exam(s), repeated grade(s), limited English proficiency, minority student, poor attendance rates, teenage pregnancy/mother, and potential first generation college students. By examining school data, the evaluation team initially predicted almost 5,000 eligible students in the 13 school districts. As the coaches worked with teachers, counselors, and administrators to distribute applications, 1,575 students were targeted for recruitment.

Coaches recruited students to apply to Razor C.O.A.C.H. during a three-to-four week period at the start of the 2013-14 school year. Coaches actively recruited students through

various methods: explaining the program to classes of students, meeting with targeted students in individual or group settings, and advertising the program to students and parents through the school's acceptable methods (e.g. flyers around the school, e-mails, etc). With the assistance of teachers, counselors, and administrators, coaches distributed applications to targeted students in grades 10 – 12. While the target characteristics guided recruitment, no students were disqualified from applying to Razor C.O.A.C.H. Furthermore, in some schools, teachers, counselors, and/or administrators focused on recruiting certain subsets of students, such as first generation college students.

Students were required to complete and return an application, in order to be considered as an applicant (Appendix A). The application asked demographic information about the student, the student's family, and parent/guardian. The application also included an initial needs-assessment and a survey to assess student's perceived barriers to pursue post-secondary options. The applications required a parent/guardian signature.

To ensure oversubscription for the purposes of a rigorous evaluation and to reach as many students who might benefit as possible, the program staff instructed coaches to aim for a target goal of applications at each school, depending on the school's size. These efforts resulted in 652 applications completed for the 2013-14 school year. The coaches were initially placed at a high school to recruit and then assigned to schools based on the number of applicants at the school; therefore, coaches were motivated to recruit as many students as possible. In schools with a half-time coach, a lower number of students applied to the program, so those coaches were split between two schools. Schools with more than one coach recruited more than enough students for a full coach load (approximately 25 students), so an additional half-or-full coach was assigned.

Description of the Coaches

In 2013-14, Razor Coach placed 15 coaches in 14 high schools: 14 master-level counseling students and 1 doctorate-level counseling student in the University of Arkansas College of Education and Health Professions. The 15 coaches received a graduate assistantship to participate in the program; therefore, many of the coaches were recruited and attracted to the university to participate in the Razor C.O.A.C.H. program. Of the 15 coaches, seven were serving their second year as coaches, while eight were first year coaches. There were 14 female coaches and one male coach. Two coaches identified as being proficient in Spanish. Prior to attending graduate school, the coaches worked or studied in various fields, including education and psychology. Twelve coaches identified as having worked with students in roles prior to working with Razor C.O.A.C.H.

Description of the Intervention

Treatment students in Cohort One received the full intervention throughout the 2012-13 school year and a follow-up intervention with lower dosage throughout the 2013-14 school year, in which students met with coaches at least twice a month in individual or group meetings. Cohort one students who exited high school after 2012-13 school year were omitted from this evaluation. Treatment students in Cohort Two received the full intervention throughout the 2013-14 school year, where students met with coaches at least once a week in individual or group meetings. Coaches were required to spend 20 hours a week working for the program and at least three days a week at their assigned high school(s). Coaches were assigned to 25 Cohort Two students and no more than 25 Cohort One students.

Prior to the 2013-14 school year, the coaches received approximately 60 hours of training, including a two-day intensive workshop at the onset. The training covered topics

including: working with at-risk students, post-secondary options, ACT/SAT testing, financial aid and FAFSA, career exploration, career assessments and skill building, teaching time management skills, teaching study/test-taking skills, and using a Social Cognitive Career Theory to guide interventions. Training was administered by the Razor C.O.A.C.H. Director, professors involved in the program, and outside experts.

As stated previously, the goals of Razor C.O.A.C.H. are to increase graduation rates, increase post-secondary enrollment, and improve the quality of the Northwest Arkansas workforce. The program was guided by the programs' core beliefs:

- "There are pro-academic behaviors that students can engage in to help them succeed in school and life.
- Developing targeted, caring relationships between students and adults will help students succeed in school and life.
- There is information that can be provided to students, which will help them overcome barriers in their pursuit of education, careers and their desired lifestyle.
- There is more than one path after high school that students can pursue to achieve their goals" (Razor C.O.A.C.H.).

During the year, Coaches met bi-weekly with the program director to provide updates, receive training, and share resources. Furthermore, coaches were required to submit weekly documentation of their time in school and progress reports on students. As the coaches' work varied, the reports provide evidence of the various interventions performed by the coaches. The program was a needs-based intervention that focused on meeting the individual college access and career preparation needs of students. The main areas of focus were:

- Pro-academic behaviors

- Post-secondary exploration
- College or technical school preparation: Financial aid completion, college entrance exams, and applications
- Career exploration

At the beginning of the semester, the coaches administered a social cognitive survey to students, created by the coaches and program advisors, in order to learn more about their assigned students. In addition, on the application, students completed questions designed by the program to identify barriers students faced for post-secondary success. Coaches used these surveys, information from student's applications, and information from student's teachers and counselors to initially guide the intervention. As the semester progressed, coaches tailored interventions to individual students and groups of students. Factors, such as grade-level and academic status and needs, played a role in the type of interventions students received. Interventions included: creating post-secondary goals, career planning, ACT/SAT test taking strategies and practice, identifying and completing financial aid and FAFSA support, career assessments and skill building, teaching time management skills, and teaching study/test-taking skills and other pro-academic skills. Coaches shared resources throughout the year; however, given that the curriculum was needs-based, the intervention varied by coach and by student.

To strengthen the intervention, Razor C.O.A.C.H. held a number of events for participants:

- "College Experience Day – students visit local college campuses to learn firsthand what college can offer.
- FAFSA Night – Students and families were provided an overview of the financial aid process, provided resources, and had the opportunity to complete the FAFSA on sight.

- ACT Camps – In partnership with the University of Arkansas College Access Initiative, selected students engaged in a four-day class to learn about the test, to receive test-taking strategies, and to build confidence for test taking.
- Career Fair & Expo – In partnership with the Fayetteville Chamber of Commerce, students were given an opportunity to engage with local employers in their search for careers. This event also provided a forum for students to learn the application process, tone interview skills and improve resumes" (Razor C.O.A.C.H.).

Through these events, the Razor C.O.A.C.H program could leverage local resources, including the University of Arkansas and Northwest Arkansas Community College.

As a needs-based intervention, the Razor C.O.A.C.H. program delivered varied treatments to students in the program. Through interviews with coaches and staff, it is evident that the program changed (and ideally improved) from the 2012-13 school year to the 2013-14 school year. In the first year of the program, training for coaches was more general, while in the second year of the program training was more focused to provide coaches with more specific development. In the second year of the program, many coaches were experienced and better able to tailor the program to the needs of the students. The experienced coaches led portions of training, by sharing best practices learned in the first year of the program. In addition, the program developed more resources for coaches and additional programs for treatment students Therefore, I hypothesize that the program may find more or more pronounced positive impacts for treatment students in Cohort Two, as the intervention may have improved in the second year of administration. In addition, as Cohort One did not receive the full intervention in the 2013-14 school year, so the effects of the program may fade away. Lastly, I hypothesize that there may be

varied impacts by coach or by school, as a needs-based intervention may be administered differently across coaches and schools.

Chapter Conclusion

In the 2013-14 school year, the Razor C.O.A.C.H. program placed 15 coaches in 15 high schools to work with at-risk students to prepare the students for life after high school. The coaches were masters or doctorate level students in a counseling program at the University of Arkansas College of Education and Health Professions. The coaches worked with Cohort One students at least twice a month and Cohort Two students at least once a week. The coaches provided a needs-based intervention to address pro-academic behaviors, post-secondary exploration, post-secondary school preparation, and career exploration. As the program is in its second year of operation, many coaches had experience and the coaches received more targeted training.

Chapter 4 – Methods

In this chapter, I identify the methods used to evaluate the effectiveness of the Razor C.O.A.C.H. program. First, I describe the research questions set forth in the evaluation; and then, I describe the sample of students, including a description of the random assignment process that identified the treatment and control students. In addition, I describe the sub-sample of students who completed the survey and thus were included in the analysis of non-cognitive impacts. Next, I describe the instruments used in the evaluation, including the survey that I created to examine non-cognitive and post-secondary factors. Finally, I describe the analytic strategy utilized to answer each question. By virtue of the fact that students were selected for the program based on a random assignment lottery, I am able to use my analyses to draw causal conclusions about the impact of participation in the Razor C.O.A.C.H.

Research Questions

To determine the impact of participation in Razor C.O.A.C.H., I examine the impact of the program on students' academic, short-term non-cognitive, and post-secondary preparation outcomes. The three research questions are:

1. *What is the impact of being assigned a coach on high school academic outcomes?* The academic outcomes examined are high school grade point average (GPA), core-subject GPA, credits earned, and ACT performance. The evaluation measures the change in academic outcomes from the year prior to intervention as compared to the year of the intervention for GPA, core-subject GPA, and credits earned.
2. *What is the impact of being assigned a coach on short-term non-cognitive outcomes as measured during high school?* The non-cognitive outcomes include: academic self-efficacy, academic responsibility, grit, and future-mindedness.

3. *What is the impact of being assigned a coach on post-secondary preparation outcomes?* The post-secondary preparation outcomes include: college and career readiness outcome; FAFSA and scholarship completion; and future plans.

To answer the first research question, I collected students' academic data from the schools for the year prior to the intervention and the year of the intervention. To answer the second and third research questions, I led our research team in administering a survey to treatment and control students at the end of the 2013-14 school year.

Sample

Random Assignment Process

When the Razor C.O.A.C.H. program received a grant to operate for a three-year period, the grantee required a rigorous evaluation to determine the effectiveness of the program. As a result, program staff, in cooperation with the evaluation team from the Office for Education Policy, chose to use a random lottery to select program participants from the set of students who applied to participate in the program. As described in the previous chapter, students were targeted to apply to the program based on student demographics and characteristics, but no applications were turned away. The application process was conducted in order to acquire a pool of students with baseline interest in the program, and the application also served as a way to obtain parent consent and baseline information from all students.

To run the lottery, I conducted a randomization process in Microsoft Excel, using the random number generator feature on all applicant students. Lotteries were run within each school. The software program assigned a random number to each student and the lowest numbers were selected into the program, based on the number of slots available at each school. For reasons that will become clear, schools were given a number of program slots based on the

number of coaches assigned; and the number of coaches assigned was based on the number of applications per school. Therefore, most schools were given one coach and thus 25 program slots. However, some schools with fewer applications were allocated 12 or 13 slots to be served by a half-time coach and some schools were given 50 program slots to be served by 2 full-time coaches.

Students were notified of their acceptance status by letter; and coaches received a list of selected students at their school(s). As 2013-14 was the second year of the program, students who were rejected from the program in 2012-13 were allowed to reapply in the 2013-14 school year. Students who were in the control group in 2012-13, but selected into the treatment group in 2013-14 were included in their respective groups for the purpose of the evaluation. The program developers and grant provider decided to utilize a random assignment lottery of applicant students for a number of reasons, including oversubscription, fairness in selection, and for the purposes of a rigorous evaluation.

By examining demographic and academic data from the school districts, the program developers recognized that there would be more targeted students than the program would have the capacity to serve, as the developers sought a student-to-coach ratio of 25 students to one coach. With an oversubscribed program, the program developers could have chosen to admit students on a first-come-first-serve basis or based on demographics, characteristics, or merit. The program developers felt that it would be difficult to identify the students who would most benefit from the program. In addition, the developers believed that it would be unfair to turn down targeted students by design. Therefore, with a random assignment lottery, the program developers did not have to choose students, and applicant students had an equal chance of being accepted at each school.

Finally, a random assignment lottery was conducted for the purposes of a rigorous evaluation that would allow the impact of the program to be measured. As applicant students were randomly assigned to the intervention or control, those in the treatment group, who received a coach, were no different on average than those in the control group. Both groups of students were targeted to the program and expressed some interest in the program by applying. The students not selected to participate in the intervention (control students) represent the status quo, as these students may receive post-secondary support, but they are not a part of the Razor C.O.A.C.H. program. Therefore, any differences between the treatment and control groups can be attributed to participation in the program.

When schools were recruited to participate in Razor C.O.A.C.H., some school personnel were hesitant about the random assignment process and advocated to select the students to participate. As a compromise, the program developers and the evaluators allowed schools to select one or two students to participate in the program and bypass the random assignment lottery ("wildcard" students). Furthermore, schools elected to allow siblings of students selected into the treatment group to bypass the lottery and participate in the program. These students are considered to be "sibling wildcard" students. Twelve schools elected to select a small number of "wildcard" students to participate in the program, totaling 32 students. All "wildcard" students are not included in the evaluation sample, as they were not randomly assigned into the program.

Overall Sample

Tables 3.1 and 3.2 highlight the random assignment process in Cohort One (2012-13 school year) and Cohort Two (2013-14 school year). As random assignment was stratified at the school level, the number of treatment spots at each school depended upon the number of applications at the school; therefore, the probability of being selected into the program varied by

school, because the number of applicants varied by school. In 2012-13, the probability of selection into the program ranged from 41% to 81%, and in 2013-14, the probability of selection ranged from 40% to 75%. The reason for this unevenness is that coaches cannot be allocated to schools as continuous numbers; that is, regardless of the number of applicants in a school, if a school was to participate, the school had to receive at least a half-time coach. To put it even more concretely, consider two different schools – one with 44 applicants and the other with 56 applicants. Based on the number of coaches available, each of these schools would likely have been allocated a single full-time coach. Razor COACH applicants in the first school would have had a 57% chance (25/44) of being selected for the program while applicants in the second school would have had only a 45% chance (25/56) of being selected for the program. After all applications were accepted, the program reorganized coaches in schools where the number of applicant students was much lower or higher than coach capacity. This reorganization resulted in coaches splitting time between two schools. In 2013-14, there were four schools with half-time coaches, and there were two schools with one full-time coach and one half-time coach. In addition, there was one school with two full-time coaches.

To adjust for the fact that random assignment was stratified at the school level resulting in varying probabilities of treatment selection, weights are utilized to create equal comparison groups for analyses. Without weighting to account for the differences in probability of selection, the results may be biased due to the fact that students had higher or lower probabilities of being selected into treatment. That is, the control group would not necessarily be appropriately representative of the treatment group. Following similar methods to Wolf et al. (2010), the weight is the inverse of the probability of being selected to treatment or control. Table B.2 in the Appendix reveals the weights placed on each group of students.

Table 3.1 describes the sample of students in Cohort One. These students applied to the program in the 2012-13 school year; and all students who did not leave the school (whether due to graduating, moving, or dropping out of school) continued in the sample in the 2013-14 school year. As discussed in the previous chapter, Cohort One treatment students received a "booster" intervention in the 2013-14 school year. After the first year of the program, one school left the program and one school had previously only included seniors, resulting in 14 schools with "booster" treatment programs. In 2013-14, the Cohort One sample was composed of 205 treatment students (64% of the original treatment sample) and 170 control students (62% of the original control sample).

Table 3.3 presents the demographic and background information of Cohort One students in the 2013-14 school year. The data are provided from the student application, so all data are self-identified (Appendix A). Cohort One completed the application prior to the intervention in the 2012-13 school year. Cohort One treatment and control groups generally are statistically similar, but not identical. Overall, 92% of Cohort One students are potential first generation college students (94% of the treatment group and 89% of the control group); and at the time of application, 64% of Cohort One indicated that they plan to attend a four-year college after high school (66% of the treatment group and 62% of the control group).

Table 3.2 describes the sample of students in Cohort Two. In the 2013-14 school year, 652 students applied to participate in the program. Of those students, 32 were "wildcard" treatment students that are not included in this evaluation. From the lottery, 321 students were assigned to the treatment group and 299 students where assigned to the control group.

Table 3.4 highlights the demographic and background information of Cohort Two students collected from the application completed prior to the intervention during the 2013-14

school year. The treatment and control groups are similar, but not identical. The control group has a higher percentage of Hispanic students (41% compared to 31%). The higher percentage of Hispanics in the control group can be attributed to stratified randomization. Two schools with higher percentages of Hispanic students had higher numbers of students apply to the program, and so more Hispanic students were in the control group in the lottery. In addition, there are a larger percentage of white students in the treatment group, which can be attributed to the stratified random sampling at the school level. By utilizing weights to account for the stratified lottery, the differences are no longer significant. Overall, 86% of Cohort Two students are potential first generation college students (87% of the treatment group and 85% of the control group); and at the time of application, 65% of Cohort Two indicated that they plan to attend a four-year college after high school (64% of the treatment group and 65% of the control group).

Table 3.5 examines the baseline academic data of Cohort One and Cohort Two. With Cohort One, there is a significant difference between treatment and control groups on core GPA. For overall GPA and credits earned, there are no significant differences between the treatment and control groups in Cohort One. For Cohort Two, there are no significant differences between the treatment and control groups for credits earned, core grade point average (GPA), or overall grade point average (GPA) in the year prior to the intervention.

Lastly, in order to perform a subgroup analysis based student academic performance, I split the treatment and control groups in quartiles based on student's prior academic performance (Tables B.3 and B.4 in the Appendix). This subgroup analyses allow a better understanding of whether the treatment impacts different students differently. For example, one might hypothesize that the program would impact the lowest-performing students the most effectively. On the contrary, one might hypothesize that the highest-performing students in the sample would be

more likely to enroll in college; and thus, the evaluation may reveal positive results for this subgroup.

In conclusion, due to the use of a random assignment lottery, and my subsequent examination of the treatment and control group characteristics, I am confident that there are no major compositional differences between the treatment and control groups. The application data confirmed that the overall treatment and control groups are fairly similar statistically (though not identical), with all differences attributed to stratified random sampling. Finally, it is important to note that the analytic strategy conservatively estimates the impact of Razor C.O.A.C.H., as it includes all lotteried students who applied to the program. Students may have dropped out of the program or received a lesser intervention (dosage); however, all lotteried students are included in the analysis. By utilizing an intent-to-treat (ITT) analysis, a lower-bound estimate is provided for the impact of the program. Nevertheless, if a student moved from a school and there is no end-of-year data for that student or if there is missing data for a student for an unknowable reason, the student is excluded from the treatment or control groups in the analysis.

Table 3.1: Random assignment lottery by school; Cohort One, 2012-13 and 2013-14

School	N Applications Returned	Probability of Selection in Lottery	2012-13 N Coaches	2012-13 Treatment	2012-13 Treatment "Wildcard"	2012-13 Control	2013-14 N Coaches	2013-14 Treatment	2013-14 Control
Bentonville High School	74	42%	1.5	27	10	37	1	13	20
Decatur High School	21	44%	0.5	8	3	10	0.5	6	6
Elkins High School	25	52%	0.5	12	2	11	1	10	13
Fayetteville High School	31	81%	1	25	0	6	1	1	0
Gentry High School	25	45%	0.5	10	3	12	0.5	5	5
Gravette High School	23	41%	0.5	7	6	10	0	-	-
Greenland High School	18	56%	0.5	10	0	8	0.5	7	6
Lincoln High School	24	58%	0.5	14	0	10	1	8	5
Pea Ridge High School	41	58%	1	22	3	16	1	6	4
Prairie Grove High School	42	59%	1	23	3	16	1	20	12
Rogers Heritage High School	56	45%	1	25	0	31	1.5	11	12
Rogers High School	93	52%	2	46	4	43	2	42	40
Springdale High School	37	66%	1	23	2	12	1	12	8
Har-Ber High School	64	56%	1.5	34	3	27	1.5	-	-
Siloam Springs High School	25	60%	1	15	0	10	1	12	8
West Fork High School	39	54%	1	21	4	14	0.5	12	7
Total	638	54%	15	322	43	273	15	165	146

NOTE: Cohort One students began the program in the 2012-13 school year. Students who graduated or left school after the end of the 2012-13 school year are not included in the analysis for the 2013-14 school year.
SOURCE: Application administered to Cohort One students at the beginning of the 2012-13 school year.

Table 3.2: Random assignment lottery by school; Cohort Two, 2013-14

School	N Applications Returned	Probability of Selection in Lottery	N Coaches	Treatment	Treatment "Wildcard"	Control
Bentonville High School	46	51%	1	22	3	21
Decatur High School	18	50%	0.5	8	2	8
Elkins High School	34	59%	1	19	2	13
Fayetteville High School	40	56%	1	19	6	15
Gentry High School	26	58%	0.5	15	0	11
Greenland High School	23	60%	0.5	12	3	8
Lincoln High School	43	56%	1	23	2	18
Pea Ridge High School	68	53%	1	35	2	31
Prairie Grove High School	16	75%	1	12	0	4
Rogers Heritage High School	61	40%	1.5	24	1	36
Rogers High School	103	47%	2	47	3	53
Springdale High School	46	52%	1	23	2	21
Har-Ber High School	69	52%	1.5	34	4	31
Siloam Springs High School	50	48%	1	23	2	25
West Fork High School	9	56%	0.5	5	0	4
Total	652	52%	15	321	32	299

SOURCE: Application administered to Cohort Two students at the beginning of the 2013-14 school year.

Table 3.3: Sample demographics; Cohort One, 2013-14

	% Total Sample	N Treatment	% Treatment	N Control	% Control	Diff.: T&C	P-value
Gender							
Male	38%	70	42%	49	34%	+8%	0.109
Female	62%	95	58%	97	66%	-8%	0.109
Grade							
Grade 10	1%	0	0%	3	2%	-2%	0.065*
Grade 11	29%	49	30%	41	28%	+2%	0.755
Grade 12	70%	116	70%	102	70%	0%	0.933
Race/Ethnicity							
African American	3%	5	3%	3	2%	+1%	0.589
Hispanic	51%	78	48%	78	53%	-5%	0.280
White	37%	65	40%	50	34%	6%	0.350
Other	9%	14	9%	15	10%	-1%	0.590
Language at Home							
English	63%	105	65%	87	60%	+5%	0.465
Spanish	35%	50	31%	56	38%	-7%	0.136
More than one language	1%	2	1%	1	1%	0%	0.636
Other	2%	4	2%	2	1%	+1%	0.501
Parent Education							
At least one parent graduated from college	8%	10	6%	16	11%	-5%	0.120
No parent graduated from college	92%	155	94%	130	89%	+5%	0.120
Post-Secondary Plans							
4-year college	64%	104	66%	87	62%	+4%	0.535
2-year college	9%	12	8%	14	10%	-2%	0.463
Technical/vocational school	6%	9	6%	9	6%	0%	0.790
Armed Forces	2%	4	3%	2	1%	+2%	0.501
Pursue job/employment	2%	3	2%	3	2%	0%	0.880
Other	16%	24	15%	23	16%	-1%	0.259
Unsure	1%	1	1%	3	2%	-1%	0.767

*** p<0.01, ** p<0.05, * p<0.1

NOTE: Differences between treatment and control students for categorical variables are estimated using chi-squared tests.

SOURCE: Application administered to Cohort One students at the beginning of the 2012-13 school year.

Table 3.4: Sample demographics; Cohort Two, 2013-14

	% Total Sample	N Treatment	% Treatment	N Control	% Control	Diff.: T&C	P-value
Gender							
Male	41%	124	40%	126	43%	-3%	0.418
Female	59%	189	60%	168	57%	+3%	0.418
Grade							
Grade 10	9%	30	10%	24	8%	+2%	0.539
Grade 11	61%	186	59%	186	63%	-4%	0.332
Grade 12	30%	97	31%	84	29%	+2%	0.516
Race/Ethnicity							
African American	3%	11	4%	7	2%	+2%	0.305
Hispanic	36%	96	31%	117	41%	-10%	0.019**
White	45%	149	49%	120	42%	+7%	0.093*
Other	15%	50	16%	41	14%	+2%	0.485
Language at Home							
English	68%	222	71%	187	65%	+6%	0.055*
Spanish	23%	69	22%	71	25%	-3%	0.539
More than one language	4%	11	4%	18	6%	-2%	0.133
Other	5%	10	3%	11	4%	-1%	0.713
Parent Education							
At least one parent graduated from college	14%	39	13%	41	15%	-2%	0.576
No parent graduated from college	86%	257	87%	236	85%	+2%	0.576
Post-Secondary Plans							
4-year college	65%	194	64%	183	65%	-1%	0.947
2-year college	15%	50	17%	39	14%	+3%	0.347
Technical/vocational school	3%	11	4%	8	3%	+1%	0.576
Armed Forces	3%	10	3%	8	3%	0%	0.731
Pursue job/employment	4%	13	4%	10	4%	0%	0.628
Other	9%	22	7%	30	11%	-4%	0.705
Unsure	1%	3	1%	2	1%	0%	0.163

*** p<0.01, ** p<0.05, * p<0.1

NOTE: Differences between treatment and control students for categorical variables are estimated using chi-squared tests.

SOURCE: Application administered to Cohort Two students at the beginning of the 2013-14 school year.

Table 3.5: Razor C.O.A.C.H. baseline academic data

	Cohort 1 (2011-12)				Cohort 2 (2012-13)			
	Treat-ment	**Control**	**Diff.**	**P-value**	**Treat-ment**	**Control**	**Diff.**	**P-value**
Credits earned	7.14	7.07	+0.07	.736	6.80	6.87	-0.07	.384
Core GPA	2.04	2.17	-0.14	.049**	2.50	2.43	+0.07	.316
GPA	2.42	2.46	-0.04	.564	2.79	2.76	+0.03	.617

*** p<0.01, ** p<0.05, * p<0.1

NOTE: Differences between treatment and control students for categorical variables are estimated using t-tests.
SOURCE: Data from school transcripts and TRIAND reports.

Survey Sample

In order to measure non-cognitive and post-secondary preparation outcomes, I created a survey that was administered to treatment and control students. Like with any survey, not all students completed the survey. In Cohort One, 62% of the sample responded to the 2013-14 end-of-year survey, with 66% of treatment students and 57% of control students responding (Table E.2 in the Appendix). In Cohort Two, 83% of the sample responded to the 2013-14 end-of-year survey, with 85% of treatment students and 81% of control students responding (Table E.3 in the Appendix. While a number of schools had a lower response rate for Cohort One students (five schools with fewer than 50% of students responding), all of the schools had a response rate of 70% or higher for Cohort Two students. Because of low response rates by Cohort One students at some schools, only schools with a 50% or higher response rate for both treatment and control are included in the analysis. The analytic sample of Cohort One omits five schools from the analyses due to low response rates (Table E.2). No schools were excluded from the analysis for Cohort Two.

As described above, all students were petitioned and incentivized to take the end-of-year survey; however, not all students responded. As non-response can result in sample bias, I utilize weights to adjust for non-response. As described by Wolf et al., "the nonresponse adjustment factor 'spreads the weight' of the non-responding students" (2010). The nonresponse weights were calculated at the school-level by treatment status and were added with the sample weights (simple addition of the two weights) (Tables E.2 ad E.3 in the Appendix).

For Cohort One and Two, I analyzed the survey response to find that there are limited discrepancies between the survey respondents and the sample in the treatment and control groups (Tables E.4 and E.5 in the Appendix). In Cohort Two, there are slightly fewer Hispanic

respondents in the treatment group than the control group and more white respondents in the treatment group than the control group. I also examine the differences between the survey respondents and the overall sample. In Cohort One, there are differences in treatment respondents in the white and other racial categories. In addition, in Cohort One, there are differences in treatment respondents in 11th and 12th grades and in the white and other racial categories. In Cohort Two, there are no significant differences between the respondent group and the overall sample. Therefore, with Cohort Two, I have confidence that the analytic sample is representative of the sample. In addition, by utilizing non-response weights, the result is an analytic sample that is generalizable to the sample as a whole.

Instrument

At the end of the 2013-14 school year, the program administered a survey to Cohort One and Two treatment and control students (Appendix C). A survey was also administered after the first year of the program (2012-13); however, I created a new survey in spring 2014 to measure the impacts of the second year of the program. The 2013-14 survey sought to better reflect the program in its second year, so new items and constructs were created. The survey is comprised of two parts: a general survey and an underclassman or senior survey. With two versions, more specific data were collected on students, depending on relevant grade-level information (e.g. seniors are asked about FAFSA completion, while underclassmen were asked about plans to complete the FAFSA).

The surveys were administered to all treatment and control students by the school's coach and/or a member of the Razor C.O.A.C.H. program staff. To ensure that survey administration would be as uniform as possible between the schools, I provided a script for coaches and/or staff to follow to instruct students to take the survey. To limit survey bias, there was no connection to

Razor C.O.A.C.H. on the survey except for the last question that asked students whether they participated in the program. In addition, coaches and staff were instructed to not mention Razor C.O.A.C.H. to recruit students to take the survey or during the survey administration. To increase survey participation, coaches alerted teachers, counselors, and administrators regarding the survey, and food was provided to incentivize students to take the survey. Treatment and control students took the survey at the same time in one room; however, if students missed the survey administration, coaches followed up with individual students.

Table 3.6 presents the constructs operational definitions and an example item for each construct (see Appendix D for the items measuring each construct). The survey instrument used sixty-nine questions to measure the eleven constructs: academic self-efficacy, academic responsibility, grit, future-mindedness, college preparation – beliefs, college preparation – facts, college preparation – actions, career awareness, external accountability, external support, and external college and career support. Each construct is comprised of a number of items from the survey. The eleven constructs were created based upon the program's mission, the program training, observations of the coaches, and interviews and focus groups with coaches and the Razor C.O.A.C.H. staff. The interviews and focus groups were held in the spring of 2014 to guide the survey creation. The items were created based on survey research. Many items were selected from other validated surveys, including Angela Duckworth's grit survey (Duckworth et al., 2007); however, the survey as a whole was not pre-validated. In addition to addressing these constructs, the end-of-year survey asked students about completion of the FAFSA, scholarships applications, and post-secondary plans.

The survey data were entered into a database by the Office for Education Policy, and due to the use of student identification numbers, survey data were connected to application and

academic data. The items were averaged to create a mean value for each construct. A reliability check of the constructs is provided in the appendix to reveal that eight of the eleven constructs have reliabilities above 0.6, allowing the constructs to be considered appropriate and desirable (Table E.1). As the other constructs have reliabilities less than 0.6 (college preparation – beliefs, college preparation – facts, and career awareness), I have less confidence that these constructs are measuring with consistency.

Table 3.6: Non-cognitive survey constructs, operational definition, and item example; 2013-14 survey

Construct	Operational Definition; Item Example	Cronbach's Alpha
Non-Cognitive Constructs		
Academic self-efficacy	• Operational definition: Belief in self and self-ability • Example item: "I feel good about who I am as a student."	0.748
Academic responsibility	• Operational definition: Displays obligation to academic matters and shows knowledge about academic performance and standing • Example item: "I know my current GPA."	0.804
Grit	• Operational definition: Able to persist for long-term goal; does not easily give up • Example item: "Setbacks don't discourage me." (Duckworth)	0.638
Future-mindedness	• Operational definition: Extent to which current choices and actions reflect future actions and goals • Example item: "Working hard in high school matters for success in the work force."	0.683
External accountability	• Operational definition: Extent to which another individual at school holds student responsible for academic performance • Example item: "There are adults in this school who check in with me about my grades."	0.756
External support	• Operational definition: Extent to which another individual at school values the student • Example item: "There are adults in this school who care about me."	0.836
Post-Secondary Constructs		
College preparation – Beliefs	• Operational definition: The extent to which student believes they can attend college • Example item: "I have an idea of what I could major in during college."	0.417
College preparation – Knowledge	• Operational definition: Extent to which student has knowledge about preparing for and applying to post-secondary institutions • Example item: "True/False: I can only take the ACT one time."	0.442
College preparation – Actions	• Operational definition: Extent to which student has taken actions to prepare for post-secondary institutions • Example item: "I have visited a college or technical school campus to learn about it and/or see if I want to enroll there someday."	0.720
Career awareness	• Operational definition: Extent to which student has thought about a future career • Example item: "I have at least one future job in mind."	0.512
External college and career support	• Operational definition: Extent to which a student receives assistance at school for post-secondary preparation • Example item: "How often has an adult at your school discussed what you want to do after high school?"	0.939

Analytic Methods

Research Question #1

To answer the first research question examining the impact of Razor C.O.A.C.H. on academic performance, student academic performance is examined from the year prior to intervention to the year after intervention. For Cohort One, academic data are included from three school years: 2011-12 school year (the baseline year, prior to intervention); 2012-13; and 2013-14. For Cohort Two students, academic data are included from the 2012-13 school year (the baseline year, prior to intervention) to the 2013-14 school year. Data were collected from school transcripts or state transcripts (TRIAND reports) from each school; and the data were entered by the research team at the Office for Education Policy. The overall GPA and core-subject GPAs were both calculated using the traditional 4.0 scale. As some schools may use a 5.0 scale for advanced courses, all GPAs were recalculated with a 4.0 scale. While the overall GPA is composed of grades from all courses taken by a student, the core-subject GPA only includes grades from courses that fall within the math, English language arts, science, and history fields. As students take varied electives, the core-subject GPA provides what some might consider a more fairly comparable measure across students and schools. The course credits earned are cataloged by the school and represent courses that students passed during the year according to the schools' standards.

To determine the impact of the Razor C.O.A.C.H. treatment on academic measures, I utilize an ordinary least squares (OLS) regression model to estimate each particular outcome measure. Equation (1) provides the general OLS regression model:

$$Y_{it} = \beta_0 + \beta_1 RC_i + \beta_2 Y_b + \beta_3 X_i + \beta_4 \Psi_i + \varepsilon_{it} \quad (1)$$

where $\mathbf{Y_{it}}$ is the academic measure (GPA, core GPA, or credits earned) for student *i* in year *t* after the intervention (2013-14)

$\mathbf{RC_i}$ is the indicator for treatment (selected to participate in Razor C.O.A.C.H.) for student *i*

$\mathbf{Y_b}$ is the baseline academic measure (GPA, core GPA, or credits earned) for student *i* in year *t* prior to the intervention (2011-12 for Cohort One and 2012-13 for Cohort Two)

$\mathbf{X_i}$ represents student demographic characteristics race/ethnicity, gender, potential first generation college student, and aspiration to attend a four-year college/university

$\mathbf{\Psi_i}$ represents controls for student grade-level and school

$\boldsymbol{\varepsilon_{it}}$ is the error term

With equation (1), β_1 is the coefficient of interest, as it indicates participation in the program. A statistically significant result for the coefficient of interest will reveal a difference in treatment and control students. As the evaluation is a random assignment with the only non-random difference between the two groups being participation in the program, I have confidence that any significant results can be attributed to the program.

In order to gain a better understanding of the impact of Razor C.O.A.C.H. on students, I perform subgroup analyses by utilizing interaction effects. Data are disaggregated by gender, race, grade level, school, prior GPA, potential first generation college students as compared to students who have one or more parents with a college degree, and students who aspire to attend a four-year college as compared to students who do not aspire to attend a four-year college (as

stated on students' application). Equation (2) reveals the OLS regression model used to test for subgroup impacts, using gender subgroups as an example:

$$Y_{it} = \beta_0 + \beta_1 RC_i*F_i + \beta_2 RC_i*M_i + \beta_3 G_i + \beta_4 Y_b + \beta_5 X_i + \beta_6 \Psi_i + \varepsilon_{it} \quad (2)$$

where $\mathbf{Y_{it}}$ is the academic measure (GPA, core GPA, or credits earned) for student *i* in year *t* after the intervention (2013-14)

$\mathbf{RC_i*F_i}$ is an interaction term of the treatment variable (RC) and female

$\mathbf{RC_i *M_i}$ is an interaction term of the treatment variable (RC) and male

$\mathbf{G_i}$ is a dummy variable for gender

$\mathbf{Y_b}$ is the baseline academic measure (GPA, core GPA, or credits earned) for student *i* in year *t* prior to the intervention (2011-12 for Cohort One and 2012-13 for Cohort Two)

$\mathbf{X_i}$ represents student demographic characteristics race/ethnicity, gender, potential first generation college student, and aspiration to attend a four-year college/university

$\mathbf{\Psi_i}$ represents controls for student grade-level and school

$\boldsymbol{\varepsilon_{it}}$ is the error term

By utilizing an OLS regression with interaction effects, the impact of treatment on a subgroup of students is examined. β_1 and β_2 are the coefficients of interest as they indicate participation in the program for that subgroup of students. A statistically significant result for the coefficient of interest will reveal a difference in treatment and control students. Subgroup effects not only provide the evaluation with more in-depth information, but they also allow the program to look at what types of students the program may be best serving. For example, I can hypothesize that the program may impact students with the lowest GPAs, as these students now

have a coach who works with them on habits and supports their academic work. By utilizing interaction effects, the program can better understand its impact on students.

Lastly, I perform an OLS regression on student's ACT performance to determine the impact of treatment on ACT performance, using equation (1). I use ACT data from student performance on the ACT during the year of intervention or after, in order to determine the impact of the program on ACT performance.

Research Questions #2 and #3

To analyze the impact of Razor C.O.A.C.H. on students' non-cognitive and post-secondary outcomes, I estimate OLS models predicting the student scores on the relevant survey constructs. In addition, I use an ordinary least squares (OLS) regression to examine students' FAFSA plans or completion, students' applications for the Arkansas Academic Challenge Scholarship, the awarding of scholarships, and students' post-secondary plans. I use an ordinary least squares (OLS) regression for each of the survey constructs. Equation (3) provides the OLS regression:

$$Y_{it} = \beta_0 + \beta_1 RC_i + \beta_2 X_i + \beta_3 \Psi_i + \varepsilon_{it} \quad (3)$$

where $\mathbf{Y_{it}}$ is the non-cognitive construct for student *i* in year *t* after the intervention (2013-14)

$\mathbf{RC_i}$ is the indicator for treatment (selected to participate in Razor C.O.A.C.H.) for student *i*

$\mathbf{X_i}$ represents student demographic characteristics race/ethnicity, gender, potential first generation college student, and aspiration to attend a four-year college/university

$\mathbf{\Psi_i}$ represents controls for student grade-level and school

ε_{it} is the error term

In equation (3), β_1 is the coefficient of interest, as it indicates participation in the program. A statistically significant result for the coefficient of interest will reveal a difference in treatment and control students on the construct. In addition, I use equation (2) to determine the impact of the program on non-cognitive and post-secondary preparation constructs for subgroups of students.

Chapter Conclusion

In order to examine the effectiveness of Razor C.O.A.C.H., I analyze the impact of the program on academic, non-cognitive, and post-secondary preparation outcomes. With a random assignment design, I have confidence that any differences between treatment and control groups are random; however, to adjust for randomization at the school-level, I utilize weights to account for differences in probability of selection. To examine students' academic performance, I utilize an OLS regression model on students' GPA, core-subject GPA, and credits earned. Then, to assess the impact of the program on non-cognitive and post-secondary outcomes, I utilize an OLS regression model on constructs from the end-of-year survey. While these regression strategies are appropriate and increase the analytic power to detect differences, the true power in the evaluation design is driven by the fact that the students have been randomly assigned to the treatment group. Thus, this evaluation and the accompanying results are based on a "gold standard" random assignment design.

Chapter 5 – Results

The Razor C.O.A.C.H. program has collected many anecdotal stories about the success of the program, including stories of students becoming more involved in their classes because of accountability from their coach as well as stories of potential first generation college students considering college for the first time. While these stories are meaningful and important, a quantitative analysis is necessary in order to determine the true overall effectiveness of the program. After all, readers of this evaluation will want to be able to answer the following question: "If we were to implement this program in our setting, should we expect student outcomes to improve on average?". This question is a much different question than simply asking if some positive stories emerged from the program.

In the following section, therefore, based on a rigorous random assignment study design, I present the results of my analysis assessing the impact of the program on important student outcomes in its second year (2013-14 school year). The chapter is divided into four sections. The first three sections address each research question and provide the results on each measure. The fourth section discusses the results to provide a better understanding of the impact of the program.

Research Question #1: Academic Outcomes

Overall Results

The first set of analyses examines the impact of the program on academic outcomes, including high school grade point average (GPA), core-subject GPA, credits earned, and ACT performance. Tables 5.1 and 5.2 below reveal the impact of program participation on these three measures, using equation (2), as described in the methods chapter. Cohort One's academic data includes three years of measures: 2011-12 as the baseline year, 2012-13 as the first year of

participation in the program, and 2013-14 as the second year of participation in the program. Baseline data for Cohort One reveal that treatment students had an average GPA of 2.42 with a core-subject GPA of 2.04 and control students had an average GPA of 2.46 with a core-subject GPA of 2.17. In addition, in the baseline year (2011-12), Cohort One treatment students earned an average of 7.14 credits, while control students earned an average of 7.07 credits. Cohort Two's academic data includes two years of measures: 2012-13 as the baseline year and 2013-14 as the first year of participation. In the baseline year, Cohort Two treatment students had an average GPA of 2.79 with a core-subject GPA of 2.50; and Cohort Two control students had an average GPA of 2.76 with a core-subject GPA of 2.43. In addition, Cohort Two treatment students earned 6.80 credits, while control students earned an average of 6.87 credits. With a random assignment design, any differences between treatment and control students can be attributed to random factors and the treatment.

Table 5.1 reveals that there are no significant impacts on GPA, core-subject GPA, or credits earned for Cohort One. Table 5.2 highlights the academic impact of the program on Cohort Two to reveal no significant impacts on GPA, core-subject GPA, or credits earned. With both Cohort One and Cohort Two, the models for GPA and core GPA are stronger as the independent variable is explained more by the dependent variables than the models for credits earned, as noted by the r-squared.

Table 5.1: Academic measures, Cohort One, 2013-14

	Credits Earned	Core GPA	GPA
Treatment	-0.089 (0.107)	-0.069 (0.062)	-0.051 (0.053)
Baseline measure (2011-12)	0.075 (0.070)	0.403*** (0.046)	0.431*** (0.045)
African American	-0.733 (0.868)	-0.986* (0.507)	-0.741* (0.432)
Hispanic	-0.386 (0.784)	-0.800* (0.462)	-0.601 (0.395)
White	-0.696 (0.796)	-0.803* (0.466)	-0.589 (0.399)
Other Race	-0.485 (0.820)	-0.922* (0.478)	-0.833* (0.409)
Male	-0.081 (0.115)	-0.171 (0.065)	-0.174*** (0.056)
Aspire to attend four-year college	-0.160 (0.120)	0.056 (0.066)	0.085 (0.058)
Potential first generation college student	-0.410** (0.185)	-0.112*** (0.105)	-0.103 (0.092)
Grade	X	X	X
School	X	X	X
Constant	6.801*** (1.031)	2.348*** (0.504)	2.530*** (0.451)
Weighted N	469	469	469
R-Squared	0.275	0.432	0.444

*** p<0.01, ** p<0.05, * p<0.1
NOTE: Baseline measure is reported measure from year prior to program (2011-12). Standard errors in parentheses. Weighted to adjust for randomization stratified at the school level.
SOURCE: Data reported from the schools.

Table 5.2: Academic measures, Cohort Two, 2013-14

	Credits Earned	Core GPA	GPA
Treatment	0.007 (0.070)	-0.038 (0.040)	-0.021 (0.032)
Baseline measure (2012-13)	0.350*** (0.046)	0.586*** (0.028)	0.626*** (0.026)
African American	-0.058 (0.606)	-0.041 (0.343)	-0.174 (0.273)
Hispanic	0.085 (0.575)	-0.188 (0.326)	-.0307 (0.259)
White	-0.081 (0.571)	-0.197 (0.323)	-0.329 (0.258)
Other Race	0.156 (0.577)	-0.290 (0.326)	-0.452* (0.260)
Male	0.69 (0.073)	-0.154*** (0.041)	-0.093*** (0.033)
Aspire to attend four-year college	0.080 (0.076)	-0.065 (0.044)	-0.011 (0.035)
Potential first generation college student	-0.380*** (0.110)	-0.250*** (0.063)	-0.154 ***(0.050)
Grade	X	X	X
School	X	X	X
Constant	4.316*** (0.677)	1.622*** (0.339)	1.709*** (0.276)
Weighted N	1075	1069	1069
R-Squared	0.204	0.478	0.553

*** p<0.01, ** p<0.05, * p<0.1
NOTE: Baseline measure is reported measure from year prior to program (2012-13). Standard errors in parentheses. Weighted to adjust for randomization stratified at the school level.
SOURCE: Data reported from the schools.

It is important to recall that the literature review revealed no significant impacts on student academic performance for other college access and career preparation programs. The Razor C.O.A.C.H. program did not directly focus on academic outcomes; for example, the coaches did not tutor students in math. However, the theory of the program is that students many improve their academic performance for a number of reasons, including the idea that students are held accountable to their schoolwork and students become more engaged in school because they recognize the connections between knowledge and skills and their future endeavors. However, when examining academic impacts overall, the theory does not hold true, as there are no significant, positive results on academic measures. Yet there is reason to believe that the program could impact students differently; for example, the coaches had a great deal of discretion and the program may have been run differently with different areas of focus at different sites. Thus, it is important to examine subgroup impacts to see whether the program impacted subgroups of students differently.

Subgroup Results

Although the overall results do not show positive outcomes on academic measures for Cohort One or Cohort Two, it remains important to examine whether there are impacts on subgroups of students. Utilizing interaction effects with equation (2), table 5.3 highlights academic impacts by grade-level, race, gender, characteristics, prior academic performance, and school (Additional subgroup analyses found in tables F.1 and F.2 in the Appendix).

Table 5.3: Academic measures, Interaction effects, Cohort One and Cohort Two

	Cohort One			Cohort Two		
	Credits Earned	**Core GPA**	**GPA**	**Credits Earned**	**Core GPA**	**GPA**
Grade						
Grade 10	-	-	-	No effect	No effect	**Positive**
Grade 11	No effect	No effect	No effect	Negative	No effect	No effect
Grade 12	No effect	No effect	No effect	**Positive**	No effect	No effect
Race						
African American	No effect	No effect	No effect	No effect	No effect	No effect
Hispanic	No effect	Negative	No effect	No effect	No effect	No effect
White	No effect	No effect	No effect	No effect	No effect	No effect
Other Race	No effect	No effect	No effect	No effect	No effect	No effect
Gender						
Female	No effect	No effect	No effect	No effect	No effect	No effect
Male	Negative	No effect	No effect	No effect	No effect	No effect
Parent Education						
Potential first generation college student	No effect	No effect	No effect	No effect	No effect	No effect
One or more parent with college degree	Negative	No effect	No effect	No effect	No effect	No effect
Aspirations						
Aspire to attend four-year college	No effect	No effect	No effect	No effect	No effect	No effect
Do not aspire to attend four-year college	No effect	No effect	No effect	No effect	No effect	No effect
Prior Academic Performance						
Academic Quartile 1 (Lowest)	Negative	No effect	No effect	No effect	No effect	No effect
Academic Quartile 2	No effect	No effect	No effect	No effect	No effect	No effect
Academic Quartile 3	No effect	No effect	No effect	**Positive**	No effect	No effect
Academic Quartile 4 (Highest)	No effect	No effect	No effect	No effect	Negative	No effect

NOTE: Regression includes controls for baseline measures, demographics, and characteristics.

Table 5.3 and Table F.1 in the Appendix provide a subgroup analysis of Cohort One treatment students. The subgroup analysis of Cohort One reveals no systematic patterns of effects on any subgroup of students. In addition, when examining subgroup impacts at the school level, there are no patterns of positive results (Table F.1). While the positive impact on GPA and core-subject GPA at one high school (Decatur High School) is promising, the overall the subgroup results reveal non-significant differences between treatment and control students on academic measures.

Table 5.3 and Table F.2 in the Appendix presents the subgroup analysis of Cohort Two treatment students. Similar to Cohort One, the subgroup analysis reveals no systematic patterns on any subgroup of students. The results reveal a positive impact on GPA for 10th grade treatment students and treatment students at three of the fifteen high schools and a negative impact for treatment students at two of the fifteen high schools. The subgroup data reveals a positive impact on core-subject GPA for treatment students at two high schools, but a negative impact on core-subject GPA for treatment students in the highest academic quartile and treatment students at four high schools. Lastly, when examining credits earned, there is a positive impact on treatment students in grade 12 for students in the third highest academic quartile and for students at one high school, while there is a negative impact on treatment students in grade 11 and at two high schools. Similar to Cohort one, positive results at one of the fifteen high schools is promising; however, overall, there are no systematic impacts on academic performance of subgroups of students.

The subgroup analysis supports the overall analysis and reveals no systematic impacts on academic measures for any subgroup of students. While there are some positive impacts on subgroups of students, the evidence does not suggest promising impacts on academic outcomes.

ACT Performance

Lastly, I examine the impact of Razor C.O.A.C.H. on student performance on the ACT college entrance exam, using ACT data reported from the schools. While the intervention did not provide direct instruction to students about taking the ACT, students received support to sign up for the ACT and received resources and study skills to take the exam. Since familiarity with the ACT supports increased performance, students often take the test multiple times. Therefore, for Cohort Two, I compare student performance on the ACT prior to the intervention to performance

during or after the intervention. Table 5.12 shows that there are no significant differences on ACT performance between treatment and control students, controlling for prior performance on the ACT.

Table 5.12: ACT performance, Cohort Two

	ACT
Treatment	-0.233 (0.326)
African American	-2.883 (2.665)
Hispanic	-2.051 (2.558)
White	-1.530 (2.518)
Other Race	-2.299 (2.551)
Male	0.147 (0.367)
Aspire to attend four-year college	2.304*** (0.413)
Potential first generation college student	-1.417*** (0.458)
Grade	X
School	X
Constant	23.640*** (2.614)
Weighted N	473
R-Squared	0.271

*** p<0.01, ** p<0.05, * p<0.1
NOTE: Ordinary least squares regression model adjusted. Weighted to account for randomization at the school-level.
SOURCE: Data reported from schools.

Cohort One does not have baseline ACT scores to allow for a comparison of performance on the ACT prior to and after the intervention. Therefore, when considering Cohort One's ACT performance, it cannot be determined as to whether the intervention impacted ACT scores or the differences are attributed to the random differences between treatment and control groups. When comparing the highest composite ACT score from the 2012-13 and 2013-14 school year, Cohort One's treatment students had an average ACT score of 19.0 and Cohort One's control students had an average ACT score of 19.9. While this difference is significant, there is no reason to believe that the program decreased the ACT scores of treatment students; instead, most likely, this difference can be attributed to random differences between treatment and control students.

By reviewing the academic outcomes analyses, it becomes clear that there is no evidence that the Razor C.O.A.C.H. program impacts student academic performance. There are no overall or systematic subgroup impacts on GPA, core-GPA, and credits earned; and there are no differences on student ACT performance.

Research Question #2: Non-Cognitive Outcomes

The second analysis examines the impact of Razor C.O.A.C.H. on non-cognitive outcomes, as measured by an end-of-year survey for treatment and control students. The non-cognitive outcomes measured by the survey include academic self-efficacy, academic responsibility, grit, future-mindedness, external accountability, and external support.

Overall Analyses

Table 5.4 reveals the results of the regression on the non-cognitive constructs, from equation (3). For Cohort One, the analysis reveals significant, positive impacts on four constructs for treatment students: academic responsibility, future-mindedness, external accountability, and external support. The two constructs that are not significant for Cohort One are academic self-efficacy and grit. When examining Cohort Two, the analysis reveals significant, positive impacts on four constructs for treatment students: academic self-efficacy, academic responsibility, future-mindedness, and external accountability. Two constructs, grit and external support, are not significant in Cohort Two.

Table 5.4: End-of-year survey constructs, Regression adjusted treatment coefficients, Cohorts One and Two, 2013-14

	Cohort 1 Treatment	Cohort 2 Treatment
Non-Cognitive Constructs		
Academic self-efficacy	0.025 (0.030)	0.065*** (0.021)
Academic responsibility	0.097*** (0.032)	0.036* (0.022)
Future-mindedness	0.091** (0.039)	0.100*** (0.023)
Grit	0.051 (0.041)	-0.003 (0.026)
Accountability & Support Constructs		
External accountability	0.356*** (0.056)	0.504*** (0.034)
External support	0.286*** (0.055)	0.038 (0.033)

*** p<0.01, ** p<0.05, * p<0.1
NOTE: Ordinary least squares regression model adjusted with race, gender, school, and grade-level. Weighted to account for survey nonresponse and randomization at the school-level.
SOURCE: End-of-year survey administered to students in spring of 2014.

The differences allow for a number of inferences about Razor C.O.A.C.H. Cohort Two students are more likely to display responsibility in their academics, by being able to answer questions such as *"I know my current GPA."* Cohort Two treatment students are also more likely to show self-efficacy in their academic performance. To address academic self-efficacy, students answered questions including *"I feel good about who I am as a student."* While Razor C.O.A.C.H. did not directly address academics by tutoring students, the program addressed academics through many ways: teaching study skills, providing students with information about their academics (for example, teaching students how to calculate a GPA), and teaching students the importance of strong academics. The positive outcomes on academic responsibility and self-efficacy suggest that the coaches work with students to increase academic potential.

Then, the analyses also reveal that Cohort One and Two treatment students are more likely to display future-mindedness, which is the extent to which students believe that their current choices and actions reflect their future actions and goals. In the program, coaches worked with students on setting future goals and aligning current actions with those future goals; therefore, it is expected that treatment students would display future-mindedness, as compared to the control students.

Next, the results reveal that treatment students are more likely than students in the control group to have another person in their lives at the school to hold them responsible for their actions. The external accountability construct includes questions such as *"there are adults in this school who check in with me about my grades."* As coaches meet with treatment students one to four times a month, it is anticipated that students feel more accountability to an adult at school, who is most likely their coach. On a similar line, Cohort One treatment students are more likely to say that they feel valued by adults at school, as shown by a positive, significant impact on the external support construct. As the Razor C.O.A.C.H. program can be defined by providing accountability and support to students, it is expected that the analysis reveals significant impacts on accountability and unexpected that the external support construct is not significant for Cohort Two students.

Finally, the results reveal no significant impact on so-called grit for either cohort. This finding is consistent with research showing the grit construct, developed by Angela Duckworth, to be an imperfect measure. The grit measure may be biased by peer comparisons and students' baseline beliefs in work. For example, a student in advanced placement courses may perceive himself to have lower grit, as compared to other top-performing students. In addition, a student in Razor C.O.A.C.H. may have previously believed that he worked hard in school, only to have his coach point out the student's lack of effort in submitting homework. In this situation, the treatment student display less grit, as the program showed the student that he could work harder. Therefore, in short, it is not surprising that the grit construct does not reveal significant differences for students.

In conclusion, an analysis of non-cognitive impacts of the Razor C.O.A.C.H. program suggests positives impacts of the program. The results reveal that students feel more accountable for their actions in school and display higher levels of self-efficacy and responsibility in school.

Subgroup Analyses

Utilizing interaction effects with equation (2), tables 5.5 and 5.6 highlight the non-cognitive impacts by grade-level, race, gender, characteristics, prior academic performance, and school (Additional subgroup analyses found in tables F.3 and F.5 in the Appendix).

Table 5.5: Non-cognitive measures, Interaction effects, Cohort One

	Academic self-efficacy	Academic responsibility	Future-mindedness	Grit	External accountability	External support
Grade						
Grade 11	No effect	No effect	Negative	Negative	**Positive**	No effect
Grade 12	No effect	**Positive**	**Positive**	**Positive**	**Positive**	**Positive**
Race						
African American	No effect	No effect	**Positive**	No effect	**Positive**	No effect
Hispanic	No effect	**Positive**	**Positive**	No effect	No effect	**Positive**
White	**Positive**	Negative	No effect	**Positive**	No effect	No effect
Other Race	No effect	No effect	No effect	**Positive**	**Positive**	**Positive**
Gender						
Female	Negative	No effect	**Positive**	No effect	**Positive**	**Positive**
Male	**Positive**	**Positive**	**Positive**	No effect	**Positive**	**Positive**
Parent Education						
Potential first generation college student	No effect	**Positive**	**Positive**	**Positive**	**Positive**	**Positive**
One or more parent with college degree	No effect	Negative	No effect	Negative	No effect	**Positive**
Aspirations						
Aspire to attend four-year college	**Positive**	No effect	**Positive**	No effect	**Positive**	**Positive**
Do not aspire to attend four-year college	No effect	No effect	**Positive**	No effect	**Positive**	**Positive**
Prior Academic Performance						
Academic Quartile 1 (Lowest)	**Positive**	**Positive**	**Positive**	No effect	**Positive**	**Positive**
Academic Quartile 2	No effect	No effect	No effect	No effect	**Positive**	**Positive**
Academic Quartile 3	Negative	No effect	No effect	No effect	No effect	No effect
Academic Quartile 4 (Highest)	No effect	No effect	No effect	No effect	No effect	No effect

NOTE: "Positive" denotes statistically significant positive result, and "negative" denotes statistically significant negative results.

Table 5.6: Non-cognitive measures, Interaction effects, Cohort Two

	Academic self-efficacy	Academic respon-sibility	Future-mindedness	Grit	External account-tability	External support
Grade						
Grade 10	**Positive**	**Positive**	**Positive**	**Positive**	**Positive**	No effect
Grade 11	**Positive**	No effect	**Positive**	No effect	**Positive**	No effect
Grade 12	No effect	No effect	**Positive**	Negative	**Positive**	No effect
Race						
African American	No effect	No effect	No effect	No effect	**Positive**	No effect
Hispanic	**Positive**	No effect	No effect	No effect	**Positive**	No effect
White	No effect	No effect	**Positive**	Negative	**Positive**	No effect
Other Race	**Positive**	No effect	**Positive**	No effect	**Positive**	No effect
Gender						
Female	**Positive**	**Positive**	**Positive**	No effect	**Positive**	No effect
Male	**Positive**	Negative	**Positive**	No effect	**Positive**	No effect
Parent Education						
Potential first generation college student	**Positive**	No effect	**Positive**	Negative	**Positive**	No effect
One or more parent with college degree	No effect	No effect	**Positive**	**Positive**	**Positive**	**Positive**
Aspirations						
Aspire to attend four-year college	No effect	No effect	No effect	No effect	**Positive**	No effect
Do not aspire to attend four-year college	**Positive**	**Positive**	**Positive**	No effect	**Positive**	**Positive**
Prior Academic Performance						
Academic Quartile 1 (Lowest)	**Positive**	No effect	No effect	No effect	**Positive**	Negative
Academic Quartile 2	No effect	No effect	**Positive**	**Positive**	**Positive**	No effect
Academic Quartile 3	No effect	No effect	**Positive**	No effect	**Positive**	**Positive**
Academic Quartile 4 (Highest)	**Positive**	No effect	No effect	No effect	**Positive**	No effect

NOTE: "Positive" denotes statistically significant positive result, and "negative" denotes statistically significant negative results.

Tables 5.5 and 5.6 examine the non-cognitive impact of the program on subgroups of students (as well as tables F.3 and F.5 in the Appendix). In Cohort One, the subgroup analyses reveal systematic impacts (four or more constructs are significant and positive) for 12th grade students, potential first generation college students, and students in the lowest academic quartile. In Cohort Two, the subgroup analyses shows systematic impacts for 10th grade students, female students, students who did not previously aspire to attend a four-year college, and students at five

of the fifteen high schools. The subgroup analyses provide a better understanding of what types of students the program may better serve.

Research Question #3: Post-Secondary Preparation Outcomes

The final analysis examines the impact of Razor C.O.A.C.H. on post-secondary preparation outcomes, measured through end-of-year survey for treatment and control students and data from schools. The outcomes measured by the survey include three college preparation constructs (measuring beliefs, knowledge, and actions), career awareness, and external college and career support. The survey also provides information about students' future plans and scholarships to post-secondary institutions. In addition, data were collected from the schools on students' ACT performance.

To examine the impact of Razor C.O.A.C.H. on three college preparation constructs (measuring beliefs, knowledge, and actions), career awareness, and external college and career support, the end-of-year survey included items to measure these constructs. Table 5.7 reveals the results of the regression on the non-cognitive constructs, from equation (3). The results for Cohort Two treatment students reveal positive, significant impacts on all constructs, while the results for Cohort One students highlight positive, significant impacts for two construct (external college and career support and beliefs about college awareness and preparation. These results, particularly for Cohort Two treatment students, indicate positive results for the program.

Both Cohort One and Two treatment students feel that they receive support for post-secondary life, as measured through items asking about the support students receive for college and career preparation. For example, the survey asks *"How often has an adult at your school discussed what you want to do after high school?"* Next, Cohort Two treatment students have

more knowledge about preparing for college by answer fact-based questions, such as the highest score on the ACT and what school in Northwest Arkansas awards associate's degrees.

In addition, the analysis reveals that Cohort Two students have completed more tasks to prepare for college, including *"I have visited a college or technical school website to learn about it and/or see if I want to enroll there someday."* The construct also asks students about whether they plan to or have completed the FAFSA and plan to or have applied for scholarship opportunities. As the Razor C.O.A.C.H. program provided opportunities for students and families to learn how to complete the FAFSA and apply for scholarship opportunities, it is expected that treatment students would be more likely to have completed these tasks. The survey analysis also indicates that Cohort Two treatment students have positive beliefs addressing college. The belief construct asked students items about college, including whether students believe college is too expensive. Since the program address college affordability and builds awareness around attending college, it is expected that treatment students would be more likely to believe that they can attend college. Finally, the survey analysis reveals that Cohort Two treatment students are more likely to have plans for a future career, by answering items about career awareness, including *"I have at least one future job in mind."* The program worked with students on career awareness by exposing students to many job opportunities and working with students to create future plans. In conclusion, these survey results suggest that the coaches are working with treatment students on preparing for college and careers.

Table 5.7: End-of-year survey constructs, Regression adjusted comparisons, Cohorts one and two, 2013-14

	Cohort 1 Treatment	Cohort 2 Treatment
External -- College/Career Support	0.331*** (0.058)	0.575*** (0.035)
College preparation – Knowledge	-0.012 (0.013)	0.040*** (0.008)
College preparation – Beliefs	0.155*** (0.042)	0.106*** (0.015)
College preparation – Actions	0.007 (0.025)	0.209*** (0.028)
Career Awareness	0.006 (0.030)	0.068*** (0.019)

*** p<0.01, ** p<0.05, * p<0.1
NOTE: Ordinary least squares regression model adjusted with race, gender, school, and grade-level. Weighted to account for survey nonresponse and randomization at the school-level.
SOURCE: End-of-year survey administered to students in spring of 2014.

Utilizing interaction effects with equation (2), tables 5.8 and 5.9 highlight the post-secondary preparation outcomes by grade-level, race, gender, characteristics, prior academic performance, and school (additional subgroup analyses found in tables F.4 and F.6 in the Appendix). In Cohort One, the subgroup analyses reveal limited systematic impacts (four or more constructs are significant and positive): students at one of the fifteen high schools (Decatur). In Cohort Two, the subgroup analyses shows systematic impacts for many subgroups of students: 11th and 12th grade students, Hispanic students, male students, both groups of students' based on parental education, students who did not previously aspire to attend a four-year college, students in the lowest and highest academic quartiles, and students at two of the fifteen high schools (Fayetteville and Rogers Heritage). The Cohort Two subgroup analyses reveal promising impacts for the program on these subgroups of students.

Table 5.8: Post-secondary measures, Interaction effects, Cohort One

	External – College & Career Support	College preparation – Knowledge	College preparation – Beliefs	College preparation – Actions	Career Awareness
Grade					
Grade 11	**Positive**	Negative	No effect	**Positive**	No effect
Grade 12	**Positive**	No effect	**Positive**	No effect	No effect
Race					
African American	No effect	No effect	No effect	No effect	No effect
Hispanic	**Positive**	No effect	**Positive**	No effect	No effect
White	No effect	No effect	**Positive**	Negative	No effect
Other Race	No effect	**Positive**	No effect	No effect	No effect
Gender					
Female	**Positive**	No effect	**Positive**	No effect	No effect
Male	**Positive**	No effect	No effect	No effect	No effect
Parent Education					
Potential first generation college student	**Positive**	Negative	**Positive**	No effect	No effect
One or more parent with college degree	No effect	**Positive**	**Positive**	No effect	Negative
Aspirations					
Aspire to attend four-year college	**Positive**	No effect	**Positive**	No effect	No effect
Do not aspire to attend four-year college	**Positive**	No effect	**Positive**	No effect	Negative
Prior Academic Performance					
Academic Quartile 1 (Lowest)	**Positive**	No effect	No effect	No effect	**Positive**
Academic Quartile 2	**Positive**	No effect	**Positive**	No effect	No effect
Academic Quartile 3	No effect	No effect	No effect	No effect	No effect
Academic Quartile 4 (Highest)	**Positive**	No effect	No effect	No effect	No effect

NOTE: "Positive" denotes statistically significant positive result, and "negative" denotes statistically significant negative results.

Table 5.9: Post-secondary measures, Interaction effects, Cohort Two

	External – College & Career Support	College Preparation – Knowledge	College Preparation – Beliefs	College Preparation – Actions	Career Aware-ness
Grade					
Grade 10	**Positive**	No effect	No effect	**Positive**	**Positive**
Grade 11	**Positive**	**Positive**	**Positive**	**Positive**	**Positive**
Grade 12	**Positive**	**Positive**	**Positive**	**Positive**	No effect
Race					
African American	**Positive**	No effect	**Positive**	No effect	No effect
Hispanic	**Positive**	**Positive**	**Positive**	**Positive**	**Positive**
White	**Positive**	**Positive**	**Positive**	**Positive**	No effect
Other Race	**Positive**	No effect	**Positive**	No effect	**Positive**
Gender					
Female	No effect	**Positive**	**Positive**	**Positive**	No effect
Male	No effect	**Positive**	**Positive**	**Positive**	**Positive**
Parent Education					
Potential first generation college student	**Positive**	**Positive**	**Positive**	**Positive**	**Positive**
One or more parent with college degree	**Positive**	No effect	**Positive**	**Positive**	**Positive**
Aspirations					
Aspire to attend four-year college	**Positive**	**Positive**	**Positive**	No effect	No effect
Do not aspire to attend four-year college	**Positive**	**Positive**	**Positive**	**Positive**	**Positive**
Prior Academic Performance					
Academic Quartile 1 (Lowest)	**Positive**	**Positive**	**Positive**	**Positive**	No effect
Academic Quartile 2	**Positive**	No effect	**Positive**	No effect	**Positive**
Academic Quartile 3	**Positive**	**Positive**	**Positive**	No effect	No effect
Academic Quartile 4 (Highest)	**Positive**	No effect	**Positive**	**Positive**	**Positive**

NOTE: "Positive" denotes statistically significant positive result, and "negative" denotes statistically significant negative results.

In order to learn more about student preparation for college, I examine individual items in the survey for Cohort One and Cohort Two students in Table 5.10. I find that Cohort One underclassmen treatment students are more likely to state that they intend to apply for the FAFSA, while senior treatment students are less likely to do so. In addition, there are no significant differences between treatment and control senior students on applying for the Arkansas Academic Challenge Scholarship or receiving scholarships. Cohort Two treatment seniors are more likely to have completed the FAFSA and complete the Arkansas Academic

Challenge Scholarship. However, there are no significant differences between treatment and control senior students on scholarships received or on FAFSA intention by underclassman students. The Cohort Two results are promising, suggesting that treatment students are more likely to be able to afford college through potential financial aid and scholarships. It is important to remember that this analysis relies on self-reported data from the end-of-year survey.

Table 5.10: College preparation, End-of-year survey, 2013-14

	FAFSA Intention (Underclassmen)	**FAFSA Completion (Seniors)**	**Apply for Arkansas Academic Challenge Scholarship (Seniors)**	**Scholarship recipient (Seniors)**
Cohort One Treatment	0.211** (0.075)	-0.165*** (0.044)	-0.030 (0.040)	-0.024 (0.043)
Cohort Two Treatment	0.045 (0.029)	0.096** (0.041)	0.182*** (0.041)	0.052 (0.045)

*** p<0.01, ** p<0.05, * p<0.1
NOTE: Ordinary least squares regression model adjusted with race, gender, school, and grade-level. Weighted to account for survey nonresponse and randomization at the school-level.
SOURCE: End-of-year survey administered to students in spring of 2014.

In addition, I compare students' post-graduate plans on the end-of-year survey for Cohort One and Two students in Table 5.11. The results reveal two negative, significant impacts for Cohort One treatment compared to Cohort One control on attending a technical or vocational school and attending a four-year college. For Cohort Two, there is a positive, significant impact on treatment students attending a technical or vocational school and a negative, significant impact on finding a job. It is important to consider that the data are self-reported and do not necessarily indicate what students will do after leaving high school. Therefore, it will be important for the program to track student outcomes after leaving high school to determine college attendance, retention, and graduation.

Table 5.11: Post-graduate plans, End-of-year survey, 2013-14

	Attend a two-year or community college	Attend a technical/vocational school	Attend a four-year college	Enter the military full time	Find a job
Cohort One Treatment	0.165	-0.085***	-0.126***	0.014	0.064
	(0.035)	(0.027)	(0.037)	(0.017)	(0.021)
Cohort Two Treatment	-0.012	0.023**	0.022	0.010	-0.055***
	(0.020)	(0.010)	(0.023)	(0.008)	(0.011)

*** p<0.01, ** p<0.05, * p<0.1

NOTE: Ordinary least squares regression model adjusted with race, gender, school, and grade-level. Weighted to account for survey nonresponse and randomization at the school-level.

SOURCE: End-of-year survey administered to students in spring of 2014.

Discussion of Results

With a random assignment design, I examined the impact of Razor C.O.A.C.H. on academic, non-cognitive, and post-secondary preparation outcomes. The results from the evaluation suggest that the program is impacting students' non-cognitive outcomes, as treatment students display higher levels of self-efficacy and responsibility in school and are preparing for post-secondary life more than the control students. In addition, treatment students feel more accountable to an adult at school than control students, as the external accountability construct includes questions such as "There are adults in this school who check in with me about my grades." As students feel more accountable and display non-cognitive traits, it might be assumed that students are performing better in school. However, when examining students' academic performance, there is no evidence to suggest that the program is impacting students' academic outcomes. These null results on academic measures are consistent with other evaluations of college and career coaching programs. Like Razor C.O.A.C.H., many college and career coaching programs do not directly impact academic performance by providing tutoring or academic interventions. Nevertheless, there is reason to believe that the program offers

accountability, encouragement, and support that may improve student academic performance in the longer-term.

While there is no evidence suggesting academic improvement overall, it is important to consider the impacts on subgroups of students. A subgroup analysis of academic performance reveals limited positive impacts on treatment students; however, the subgroup impacts are not systematic and do not allow for assumptions to be made about any subgroup. These results can be attributed to varied implementation, which can be explained by a number of different factors. At some schools, coaches had less access to students; for example, one school only allowed the coach to interact with students during a short advisory period. On a coach survey, 21% of coaches indicated that access to students at their school(s) was "easy," while 57% indicated that access was "somewhat easy." As the intervention was largely needs-based and not a standard curriculum, the program relied on the coaches to best determine the needs of students and varied by coach and by student. In addition, variation in coach quality may have lead to differences in interventions for students as well.

Lastly, in order to understand the initial impacts of the program, I examined post-secondary preparation outcomes, as measured by an end-of-year survey and student data. The survey reveals that treatment students receive more support for post-secondary planning, and treatment students in Cohort Two have more knowledge about post-secondary options and have taken more steps to prepare for life after high school. In addition, treatment students are more likely to believe that there are fewer barriers to attending college than control students. In a survey of coaches, 75% of coaches indicated that college prep was their primary focus, while 58% of coaches indicated that career prep was their secondary focus. Therefore, it is expected that students in the program would be more prepared for post-secondary success; however, in

this evaluation, only short-term indicators are measured. It will be important for the program to follow the students in the program and determine whether the program has long-term impacts on students. These long-term impacts may include college attendance, persistence, and graduation; employment; earnings; health outcomes; and other longer-term measures.

Chapter 6 – Conclusions

Similar to results from other college and career coaching programs, this evaluation finds positive short-term results on non-cognitive traits and post-secondary preparedness, but no overall impacts on academic measures. While students feel more accountable for their actions in school and display higher levels of self-efficacy and responsibility in school than students not in the program, it was hypothesized that the program would increase academic performance of treatment students. There were no overall impacts on academics, but there is evidence suggesting that the program impacted student academic performance in some schools and grade levels. As the evaluation examines the second year of the Razor C.O.A.C.H. program, I hypothesized that the evaluation would find more robust impacts on the second cohort of students. Many coaches had more experience, and the program provided more targeted development to the coaches; therefore, there is reason to believe that the program improved in its second year. In addition, Cohort Two treatment students received the full intervention in the 2013-14 school year, while Cohort One treatment students received a lesser intervention. In contrast, there is also reason to believe that the evaluation would find robust impacts for Cohort One students, as they participated in the program for two years. The evaluation reveals more differences between treatment and control students in Cohort Two, as compared to Cohort One; however, there continues to be no academic impact on student performance for Cohort One students.

In order to better understand the results, it is important to consider the limitations around the evaluation. In addition, it is important to examine future analyses that will provide more information on the effectiveness of the program.

Limitations

The limitations of the evaluation include solely utilizing an intent-to-treat analysis, potential treatment spillover, and lack of information about the status quo of control students. With an intent-to-treat analysis, all students who were selected into the program are included in the evaluation, despite the fact that some students may have received lesser interventions than other students. With a treatment-on-treated evaluation, I would need to isolate the students who received the full treatment, and then I would be able to isolate the impact of the intervention. By performing an intent-to-treat analysis, a lower-bound estimate is provided for the impact of the program. As the Razor C.O.A.C.H. program was implemented in schools, there are potential spillover effects may have occurred throughout the year of implementation. That is, treatment students may have shared knowledge or skills gained through the intervention with control students. For example, a treatment student may help a control student complete the FAFSA after the treatment student learned how to do so with their coach. While any spillover effects are positive for student outcomes, it may create a limitation to the analysis in determining the impact of the program. Lastly, it is important to recognize that there is little information about the status quo of control students. Though varied by school, it is possible that many control students may have experienced support, intervention(s), and/or a mentor to assist in academic, non-cognitive, and/or post-secondary preparation outcomes from their school counselor or other programs. As the status quo of control students varied by student and school, I do not believe that the control students were systematically impacted; but I recognize that it is important to note that control students might have received additional support, intervention(s), and/or mentors.

Future Analyses

There are a number of different analyses that could be performed on the Razor C.O.A.C.H. program to learn more about the program and its impacts. These analyses include an implementation evaluation, return on investment study, and a long-term outcome study. An implementation evaluation would provide the program with more in-depth knowledge about where the program is effective and where the program can be improved. As the program is a largely needs-based intervention, it would be helpful for the program to be able to determine which components of the intervention are most effective. In addition, the program could learn more about the differences in implementation of the program with different coaches and schools. With more information about the implementation, the program could provide the coaches with targeted training to address areas of strength and weakness. In addition, the program could recruit future coaches, based on information about coach effectiveness. Next, future analyses should encompass longer-term outcomes to include college attendance, retention, and graduation; employment; earnings; health outcomes; and other related outcomes. As the evidence suggests that treatment students feel more accountable for their schoolwork, feel more prepared for college and careers, and think more about the future, it will be important to determine whether these outcomes translate into any long-term outcomes. Finally with a longer-term evaluation, a return on investment study could be completed on the program to understand the impact of the program. In order to secure future funding, it is important to understand the impact of this funding and the potential returns on the community.

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Appendix A – Application to the Razor C.O.A.C.H. Program

Razor C.O.A.C.H.

Creating **O**pportunities for **A**rkansans' **C**areer **H**opes

What can you gain from Razor C.O.A.C.H.…

An opportunity to …

- *Explore your interests and dreams!*
- *Uncover unknown options after high school!*
- *Explore and visit universities and colleges!*
- *Discover careers and find out what it takes to get them!*
- *Discover unknown ways to pay for college and help completing financial aid forms*
- *Build a plan for the future that is created by YOU!*

You have been invited to apply for a chance to participate in the Razor C.O.A.C.H. program. This program aims to help students, like you, discover career opportunities and build plans for after high school that are based upon your hopes, dreams, and interests for the future. This program offers you the opportunity to work closely with a Razor Coach to explore careers and create a plan for your future. If selected, you and your Razor Coach will participate in a variety of activities that may include discussing your goals, exploring different types of careers, visiting businesses to see how things really work, visiting college campuses, learning about how to get money for college and much more! Along with your help they will help you choose which activities are in line with your interests!

Please keep in mind you are only applying for an opportunity to be in the program. Unfortunately, there are not enough Razor Coaches to be able to work with all students, and as a result participants from your school will be randomly chosen. All information collected will be kept confidential to the extent allowed by law and University of Arkansas policy. In any reporting of this information, no identifying information will be used, and you do have the right to refuse to participate at any time. However, it is important that all students who apply for the program be represented in the evaluation of the program, not just those that are accepted.

We look forward to receiving your application and hope to get to work with you!
Sincerely,
The Razor C.O.A.C.H. Program

RETURN THE ATTACHED BLUE FORMS, FULLY COMPLETED AND EARN A CHANCE TO PARTCIPATE IN Razor C.O.A.C.H.

BE ONE OF THE FIRST _____ TO TURN IT IN and WIN A _____!

Application Checklist:

- Read this sheet and letter on the back to learn about the Razor C.O.A.C.H. Program
- Take a minute and fill out the **BLUE** application forms and make sure to have your parent/guardian sign it.
- Tear off the completed **BLUE** application forms and return to your (Counselor/Coach) by **Sept. 13!**

Razor C.O.A.C.H.

Creating **O**pportunities for **A**rkansans' **C**areer **H**opes

Dear Parent or Guardian:

Your child has been chosen to apply for a chance to participate in the Razor C.O.A.C.H. Program, a career and college planning program, at _____ High School. The mission of Razor C.O.A.C.H. is to motivate and support NWA students in grades 10-12, in order to increase their knowledge of and access to career and educational opportunities beyond high school. Razor C.O.A.C.H. interventions are focused on facilitating development of pro-academic behaviors, increasing students' self-awareness, exploring career and/or college options, and establishing future goals.

The Career Coaches are graduate students in the Counselor Education Program at the University of Arkansas and will be providing individual and small group services at your child's High School for career and educational planning. These services may include:

- Reviewing students grades and connecting them with tutoring opportunities
- Developing career plans based on assessments and individual interests
- Assistance in locating and preparing financial aid information and academic forms
- Assistance with the application process for colleges, universities, or vocational/technical programs that are consistent with their career goals
- Guidance in registering and practicing for the ACT or SAT

By completing and returning the attached BLUE application forms, no later than Sept. 13, your child will be eligible for a chance to participate in the program. We expect that there will not be enough coaches to be able to serve all students, therefore, in order to be fair, participants will be randomly selected, giving all students same chance of receiving services.

Additionally, In order to evaluate the effectiveness of Razor C.O.A.C.H., researchers at the University of Arkansas Counselor Education Program will be utilizing data of all students who apply. Your child's participation in the research is voluntary and will not affect his/her chances of receiving services. However, it is important that all students who apply for the program be represented in the data, not just those who are accepted. Thus, I strongly encourage you to consider allowing your child to be a part of the study.

If you have any questions, concerns, or need additional information regarding the program or evaluation process, you can contact Dr. Kristin Higgins, PhD., LPC at _ or _ or Josh Raney at _ or _. In addition, this process has been approved by the University of Arkansas Institutional Research Review Board. For questions or concerns about your rights as a participant, please contact Ro Windwalker, the University's IRB Coordinator, at _or by e-mail at _.

Sincerely,
Razor C.O.A.C.H. Program
University of Arkansas

Razor C.O.A.C.H. at ___ High School

First Name _____ Last Name _____ Age: _____ Gender (circle): M F

Address _____City _____ Zip Code _____ Grade (circle): 10 11 12

Student Phone Number _____ Student Email Address _____

Race / Ethnicity of Student *(place X in ONE box)*

African American	*1*
American Indian/Alaska Native	*2*
Asian	*3*
Hawaiian/Pacific Islander	*4*
Hispanic/Latino	*5*
White (non-Hispanic)	*6*
Multiple Heritage(s)	*7*
Other _____	*8*

What language is most often spoken in your home? *(place X in ONE box)*

English	
Spanish	
Other _____	

Are you in E.L.L. program? ***YES*** **NO**

Have you been in this school district for 3 or more years? ***YES*** **NO**

In the past three years, have you participated in a(n) … (place X in ALL that apply)

Optional School tutoring	
After-school program	
Honors or Advanced Classes	
Extra-curricular Academics	
Study Group	
Paid Tutoring	
Other _____	

What are you most likely to do after High School? *(place X in ONE box)*

Pursue Full Time Employment	*1*
Enter the Military Full Time	*2*
Technical / Vocational School	*3*
Community College or 2-year College	*4*
Pursue a 4-year College Degree	*5*
No plans yet	*6*
Other _____	*7*

How far did parents/guardians go in school*? (mark ONE answer per guardian)*	***Mother or other Guardian***	***Father or other Guardian***
Did not graduate high school		
Graduated from High School or GED		
Some College (but not a 4-year degree)		
Graduated from a 4-Year college		
Master's or other Graduate Degree		

Razor C.O.A.C.H.

Creating **O**pportunities for **A**rkansans' **C**areer **H**opes

Voluntary Assent of Students

A counselor/coach at my school has explained the University of Arkansas' Razor C.O.A.C.H. program to me. The counselor/coach informed me that, if I apply for it, I will be a part of a study to determine the effectiveness of the program. The study was described to me and my questions were answered and I agree to participate.

[Student]	[Signature]	[Date]

Parent/ Guardian Consent

I have read and understand the attached information on the Razor C.O.A.C.H. I give permission for my child to apply to the program and to be a part of the study. I understand that the students that will receive services will be randomly selected from all eligible students and that information for all applicants (including those not selected for the program) will be collected from school records and from surveys. Additionally, I understand that if my child is selected, career coaches working for the program will have access to grades and attendance records in order to facilitate services specific to my child. I understand that data will be kept confidential to the extent allowed by law and University policy.

[Parent/Guardian Name]	[Signature]	[Date]

Address: _____ City: _____ Zip: _____
Telephone (home/cell): _____ (work): _____
Email: _____

To Be Completed by Razor C.O.A.C.H Staff

I certify that the counselors/coaches in the school were instructed to explain the procedures of the study to the student in terms that he/she could understand.

[Name of Investigator]	[Signature]	[Date]

If you have questions or concerns about this study, you may contact Kristin Higgins at _ or by e-mail at _. For questions or concerns about your rights as a research participant, please contact Ro Windwalker, the University's IRB Coordinator, at _ or by e-mail at _.

Barriers to Pursue Post-Secondary Options (After High School)

First and Last Name: _____ **School:** _____

Introduction: Consider the following statements in regards to your choice for life after high school. Please check the appropriate box.

	Scale Questions	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE
1.	I can't afford to go to college.	4 ☐	3 ☐	2 ☐	1 ☐
2.	It takes a long time to get a degree.	4 ☐	3 ☐	2 ☐	1 ☐
3.	I don't know what I want to do for career.	4 ☐	3 ☐	2 ☐	1 ☐
4.	I have no place to study.	4 ☐	3 ☐	2 ☐	1 ☐
5.	I have no one to take care of my child.	4 ☐	3 ☐	2 ☐	1 ☐
6.	I can devote the majority of my time to school.	4 ☐	3 ☐	2 ☐	1 ☐
7.	I don't know who to talk to about college.	4 ☐	3 ☐	2 ☐	1 ☐
8.	I don't have transportation to go to college.	4 ☐	3 ☐	2 ☐	1 ☐
9.	It's too complicated to sign up for classes.	4 ☐	3 ☐	2 ☐	1 ☐
10.	I don't have support from my family.	4 ☐	3 ☐	2 ☐	1 ☐
11.	I don't have support from my friends.	4 ☐	3 ☐	2 ☐	1 ☐
12.	I have too much to do at home.	4 ☐	3 ☐	2 ☐	1 ☐
13.	I have too much to do at work.	4 ☐	3 ☐	2 ☐	1 ☐
14.	I don't have the energy to go to school.	4 ☐	3 ☐	2 ☐	1 ☐
15.	My GPA is low.	4 ☐	3 ☐	2 ☐	1 ☐
16.	I don't think I can be successful in college.	4 ☐	3 ☐	2 ☐	1 ☐
17.	I don't like to study.	4 ☐	3 ☐	2 ☐	1 ☐
18.	I'm tired of school.	4 ☐	3 ☐	2 ☐	1 ☐
19.	I can't use a computer.	4 ☐	3 ☐	2 ☐	1 ☐
20.	Financial aid is too complicated.	4 ☐	3 ☐	2 ☐	1 ☐
21.	The ACT is too difficult.	4 ☐	3 ☐	2 ☐	1 ☐

Appendix B – Descriptive Tables

Table B.1: Razor C.O.A.C.H. Partner schools, Demographic and academic data

School (District)	Grades Served	School Enrollment	% FRL	% Minority	%Proficient/ Advanced: Grade 11 Literacy EOC	School GPA
Bentonville High School	9-12	4,144	24%	25%	92%	3.26
Decatur High School	7-12	222	78%	42%	57%	2.56
Elkins High School	9-12	363	42%	12%	58%	2.68
Fayetteville High School	9-12	1,895	34%	28%	82%	2.69
Gentry High School	9-12	435	55%	31%	73%	2.97
Greenland High School	8-9	534	33%	9%	69%	2.73
Har-Ber High School	10-12	1,794	39%	38%	81%	2.57
Lincoln High School	8-12	518	68%	17%	71%	2.70
Pea Ridge High School	9-12	525	40%	7%	84%	2.99
Prairie Grove High School	9-12	592	38%	5%	81%	2.88
Rogers Heritage High	9-12	2,019	59%	49%	73%	2.81
Rogers High School	9-12	2,145	50%	48%	85%	2.96
Siloam Springs HS	9-12	1,291	48%	36%	80%	3.03
Springdale High School	10-12	2,238	66%	67%	78%	2.76
West Fork High School	9-12	406	58%	6%	75%	2.83

*** p<0.01, ** p<0.05, * p<0.1

NOTE: The School GPA measure is an average of Algebra, Geometry, Literacy, and Biology End-of-Course Exams. The GPA is a measure that assigns a 4.0 to an advanced score, 3.0 to proficient, 2.0 to basic, and 1.0 to below basic.

SOURCE: Data from the Office for Education Policy.

Table B.2: Weights by school to adjust for stratified randomization

School	Cohort 1			Cohort 2		
	Probability of Selection in Lottery	Weight for Treatment Group	Weight for Control Group	Probability of Selection in Lottery	Weight for Treatment Group	Weight for Control Group
Bentonville High School	42%	2.38	1.72	51%	1.96	2.04
Decatur High School	44%	2.27	1.79	50%	2.00	2.00
Elkins High School	52%	1.92	2.08	59%	1.69	2.44
Fayetteville High School	81%	1.23	5.26	56%	1.79	2.27
Gentry High School	45%	2.22	1.82	58%	1.72	2.38
Greenland High School	56%	1.79	2.27	60%	1.67	2.50
Lincoln High School	58%	1.72	2.38	56%	1.79	2.27
Pea Ridge High School	58%	1.72	2.38	53%	1.89	2.13
Prairie Grove High School	59%	1.69	2.44	75%	1.33	4.00
Heritage High School	45%	2.22	1.82	40%	2.50	1.67
Rogers High School	52%	1.92	2.08	47%	2.13	1.89
Springdale High School	66%	1.52	2.49	52%	1.92	2.08
Har-Ber High School	-	-	-	52%	1.92	2.08
Siloam Springs High School	60%	1.67	2.50	48%	2.08	1.92
West Fork High School	60%	1.67	2.50	56%	1.79	2.27

Table B.3: Academic data on student quartiles, Cohort One

	N Treatment (Weighted N)	N Control	Pre-GPA Average	Pre-GPA Minimum	Pre-GPA Maximum
Academic Quartile 1 (Lowest performing)	38 (71)	30 (65)	1.368	0.333	1.968
Academic Quartile 2	42 (82)	33 (68)	2.253	2.000	2.500
Academic Quartile 3	39 (73)	32 (68)	2.733	2.530	2.938
Academic Quartile 4 (Highest performing)	32 (59)	39 (83)	3.383	2.940	4.000

*** p<0.01, ** p<0.05, * p<0.1
NOTE: Students were split into quartiles based on prior GPA (2011-12).
SOURCE: Data from school transcripts and TRIAND reports.

Table B.4: Academic data on student quartiles, Cohort Two

	N Treatment (Weighted N)	N Control	Pre-GPA Average	Pre-GPA Minimum	Pre-GPA Maximum
Academic Quartile 1 (Lowest performing)	71 (137)	64 (131)	2.219	0.210	3.930
Academic Quartile 2	70 (140)	63 (128)	2.738	1.000	4.000
Academic Quartile 3	61 (119)	71 (145)	3.037	1.375	3.940
Academic Quartile 4 (Highest performing)	80 (153)	55 (115)	3.515	1.710	4.000

*** p<0.01, ** p<0.05, * p<0.1
NOTE: Students were split into quartiles based on prior GPA (2012-13).
SOURCE: Data from school transcripts and TRIAND reports.

Appendix C – End-of-Year Survey

End-of-Year Student Survey: 12th Grade

First and last name: _____ School: _____

Directions: This survey asks questions about you and your school experience. Please fill it out honestly and clearly by circling only one answer. Thank you; we appreciate your time today.

		1: Strongly Agree	2: Agree	3: Disagree	4: Strongly Disagree
1.	I feel good about who I am as a student.	1	2	3	4
2.	I take pride in the quality of my school work.	1	2	3	4
3.	I can do well on tests, even when they're difficult.	1	2	3	4
4.	I can earn As.	1	2	3	4
5.	I believe I am capable of graduating high school.	1	2	3	4
6.	I believe I am capable of graduating college.	1	2	3	4
7.	This year, I was better in school, because an adult at this school checked on me.	1	2	3	4
8.	There are adults in this school who check in with me about my grades.	1	2	3	4
9.	What we learn in school is necessary for success in the future.	1	2	3	4
10.	There are adults in this school who ask me about my study habits.	1	2	3	4
11.	I am planning for life after high school.	1	2	3	4
12.	I have an idea of what I want to do for my career.	1	2	3	4
13.	Working hard in high school matters for success in the work force.	1	2	3	4
14.	There are adults in this school who care about me.	1	2	3	4
15.	There is at least one adult in this school who knows me well.	1	2	3	4
16.	An adult at this school is proud of me.	1	2	3	4

17.	**How often has <u>an adult at your school</u> discussed the following with you:**	1: Often	2: Some-times	3: Rarely	4: Never
a.	What I want to do after high school	1	2	3	4
b.	How to decide whether to attend college	1	2	3	4
c.	How to apply to college	1	2	3	4
d.	Admissions requirements for two-year colleges	1	2	3	4
e.	Admissions requirements for four-year colleges	1	2	3	4
f.	Your likelihood of being accepted at different types of schools	1	2	3	4
g.	What ACT/SAT scores you need to get into the colleges you want to attend	1	2	3	4
h.	Opportunities to attend out-of-state schools	1	2	3	4
i.	How to apply for a scholarship	1	2	3	4
j.	How to pay for college	1	2	3	4
k.	Your career interests	1	2	3	4

18.	**During this school year, about how often have you done each of the following?**	1: Often	2: Some-times	3: Rarely	4: Never
a.	Asked or answered questions in class	1	2	3	4
b.	Talked to a teacher about class work outside of class	1	2	3	4
c.	Prepared a draft for a paper or assignment before turning it in	1	2	3	4
d.	Attended class with all assignments complete	1	2	3	4
e.	Connected ideas or concepts from one class (or subject area) to another in classroom assignments or discussions	1	2	3	4
f.	Discussed grades with teachers	1	2	3	4
g.	Discussed ideas from readings or classes with teachers outside of class	1	2	3	4
h.	Discussed ideas from readings or classes with others outside of class (friends, family members, etc)	1	2	3	4
i.	Come to class without completing readings or assignments	1	2	3	4
j.	Asked another student to get help to understand material in class	1	2	3	4
l.	Reviewed notes after class	1	2	3	4
m.	Prepared for exams by discussing or working through course material with other students or a teacher	1	2	3	4

19.	**In a typical 7 day week during the school-year, about how much time do you do the following outside of school <u>per week</u>?**	30 minutes or less	Between 30 minutes and 1 hour	2-3 hours	3-5 hours	5+ hours
a.	Completing homework for class	○	○	○	○	○
b.	Studying for tests or quizzes	○	○	○	○	○
c.	Reading for your own personal interest (books, magazines, newspapers, online articles, etc.)	○	○	○	○	○

	Please respond to the following 8 items. Pay attention to the headings. Be honest--there are no right or wrong answers!	Very much like me	Mostly like me	Somewh at like me	Not much like me	Not like me at all
20.	New ideas and projects sometimes distract me from previous ones.	○	○	○	○	○
21.	Setbacks don't discourage me.	○	○	○	○	○
22.	I have been obsessed with a certain idea or project for a short time but later lost interest.	○	○	○	○	○
23.	I am a hard worker.	○	○	○	○	○
24.	I often set a goal but later choose to pursue a different one.	○	○	○	○	○
25.	I have difficulty maintaining my focus on projects that take more than a few months to complete.	○	○	○	○	○
26.	I finish whatever I begin.	○	○	○	○	○
27.	I am diligent.	○	○	○	○	○

End-of-Year Student Survey: 12th Grade

First and last name: _____ School: _____

Directions: This survey asks questions about you. Please fill it out clearly by circling only one answer. Thank you; we appreciate your time today.

		True	False
1.	I need to maintain a GPA at/or above 2.5 to get an Academic Challenge Scholarship.	T	F
2.	The FAFSA will help me figure out how to pay for college.	T	F
3.	Scholarship money received to pay for college has to be paid back.	T	F
4.	I can only take the ACT one time.	T	F
5.	I can have a job and attend college.	T	F

6.	The highest possible score someone can get on the ACT is:	a. 1600	b. 36	c. 28	d. 800
7.	Which of the following subjects is not on the math portion of the ACT?	a. geometry	b. algebra	c. calculus	
8.	Which of the following schools awards an associate's degree?	a. Univ. of Ark.	b. Northwest Ark. Comm. College	c. Univ. of Central Ark.	

		1: Strongly Agree	2: Agree	3: Disagree	4: Strongly Disagree
9.	I have at least one future job in mind.	1	2	3	4
10.	I have thought about multiple job opportunities.	1	2	3	4
11.	I know the steps I need to take to get me on track to a future career.	1	2	3	4
12.	I have an idea of what I could major in during college.	1	2	3	4
13.	I can't afford to go to college.	1	2	3	4
14.	Financial aid is too complicated.	1	2	3	4
15.	I set goals for my future.	1	2	3	4

16. After I graduate, I plan to: (Check **one** please).

____ Attend a two-year or community college
____ Attend a technical/vocational school
____ Attend a four-year college
____ Enter the military full time
____ Find a job
____ Other: _____

		More Than 5 Times	3 – 5 Times	1 Time	Never
17.	I have visited a college or technical school **website** to learn about it and/or see if I want to enroll there someday.	○	○	○	○
18.	I have visited a college or technical school **campus** to learn about it and/or see if I want to enroll there someday.	○	○	○	○

.

		Yes	**No**
19.	I know my current GPA.	Y	N
20.	I know how many credits I need to graduate.	Y	N
21.	I know what GPA I need to get into a college.	Y	N
22.	Did you take the ACT?	Y	N
23.	Did you take the SAT?	Y	N
24.	Did you take the COMPASS test?	Y	N
25.	Did you take the ASVAB?	Y	N
26.	I studied for the ACT or SAT.	Y	N
27.	Did you fill out the FAFSA?	Y	N
28.	Did you apply for the Arkansas Scholarship Lottery?	Y	N
29.	Did you apply for another scholarship to attend college (besides the lottery scholarship)?	Y	N
30.	Did you receive a scholarship to attend college?	Y	N

	Please respond to the following 10 items. Pay attention to the headings. Be honest--there are no right or wrong answers!	Very much like me	Mostly like me	Somewh at like me	Not much like me	Not like me at all
31.	I am good at working on multiple projects at the same time.	○	○	○	○	○
32.	I am willing to stop working on a project when it becomes too problematic.	○	○	○	○	○
33.	I am willing to try new things when what I am doing is not working.	○	○	○	○	○
34.	I think that too much work and not enough play makes life less interesting.	○	○	○	○	○
35.	I am able to change my goals.	○	○	○	○	○
36.	I know when to cut my losses.	○	○	○	○	○
37.	I dwell on projects longer than is necessary.	○	○	○	○	○
38.	I am capable of letting go of a project despite the expectations of others.	○	○	○	○	○
39.	I am able to switch between different projects with ease.	○	○	○	○	○
40.	If one project becomes too problematic, I will try a different one.	○	○	○	○	○

		Yes	No
41.	I am in the Razor COACH Program.	Y	N
42.	If you are in Razor COACH, how often do you meet with your coach? (Circle one please.) Once a month Twice a month Once a week Twice a week Other: _____		

End-of-Year Student Survey: 9th – 11th Grade Students

First and last name: _____ School: _____

Directions: This survey asks questions about you and your school experience. Please fill it out honestly and clearly by circling only one answer. Thank you; we appreciate your time today.

		True	False
1.	I need to maintain a GPA at/or above 2.5 to get an Academic Challenge Scholarship.	T	F
2.	The FAFSA will help me figure out how to pay for college.	T	F
3.	Scholarship money received to pay for college has to be paid back.	T	F
4.	I can only take the ACT one time.	T	F
5.	I can have a job and attend college.	T	F

6.	The highest possible score someone can get on the ACT is:	a. 1600	b. 36	c. 28	d. 800
7.	Which of the following subjects is not on the math portion of the ACT?	a. geometry	b. algebra	c. calculus	
8.	Which of the following schools awards an associate's degree?	a. Univ. of Ark.	b. Northwest Ark. Comm. College	c. Univ. of Central Ark.	

		1: Strongly Agree	2: Agree	3: Disagree	4: Strongly Disagree
9.	I have at least one future job in mind.	1	2	3	4
10.	I have thought about multiple job opportunities.	1	2	3	4
11.	I know the steps I need to take to get me on track to a future career.	1	2	3	4
12.	I have an idea of what I could major in during college.	1	2	3	4
13.	I can't afford to go to college.	1	2	3	4
14.	Financial aid is too complicated.	1	2	3	4
15.	I set goals for my future.	1	2	3	4

16. If I had to decide right now, after I graduate high school, I plan to: (Check **one** please).

____ Attend a two-year or community college
____ Attend a technical/vocational school
____ Attend a four-year college
____ Enter the military full time
____ Find a job
____ Other: _____

		1: Often	2: Some-times	3: Rarely	4: Never
17.	I have visited a college or technical school **website** to learn about it and/or see if I want to enroll there someday.	1	2	3	4
18.	I have **visited** a college or technical school **campus** to learn about it and/or see if I want to enroll there someday.	1	2	3	4

		Yes	No
19.	I know my current GPA.	Y	N
20.	I know how many credits I need to graduate.	Y	N
21.	I know what GPA I need to get into a college.	Y	N
22.	I have taken or I plan to take the ACT.	Y	N
23.	I have taken or I plan to take the SAT.	Y	N
24.	I have taken or I plan to take the COMPASS test.	Y	N
25.	I have taken or I plan to take the ASVAB.	Y	N
26.	I have studied for or I plan to study for the ACT or SAT.	Y	N
27.	I plan to fill out the FAFSA.	Y	N
28.	I plan to apply for the Arkansas Scholarship Lottery.	Y	N
29.	I plan to apply for other college scholarships.	Y	N

	Please respond to the following 10 items. Pay attention to the headings. Be honest--there are no right or wrong answers!	Very much like me	Mostly like me	Somew hat like me	Not much like me	Not like me at all
30.	I am good at working on multiple projects at the same time.	○	○	○	○	○
31.	I am willing to stop working on a project when it becomes too problematic.	○	○	○	○	○
32.	I am willing to try new things when what I am doing is not working.	○	○	○	○	○
33.	I think that too much work and not enough play makes life less interesting.	○	○	○	○	○
34.	I am able to change my goals.	○	○	○	○	○
35.	I know when to cut my losses.	○	○	○	○	○
36.	I dwell on projects longer than is necessary.	○	○	○	○	○
37.	I am capable of letting go of a project despite the expectations of others.	○	○	○	○	○
38.	I am able to switch between different projects with ease.	○	○	○	○	○
39.	If one project becomes too problematic, I will try a different one.	○	○	○	○	○

		Yes	No
40.	I am in the Razor COACH Program.	Y	N
41.	If you are in Razor COACH, how often do you meet with your coach? (Circle one please.) Once a month Twice a month Once a week Twice a week Other: _____		

Appendix D – Survey Constructs

Below each construct are the items that compromised the construct.

Academic self-efficacy

I feel good about who I am as a student
I take pride in the quality of my school work
I can do well on tests, even when they're difficult.
I can earn As.
I believe I am capable of graduating high school.
I believe I am capable of graduating college.

Future Mindedness

What we learn in school is necessary for success in the future.
I am planning for life after high school.
I have an idea of what I want to do for my career.
Working hard in high school matters for success in the work force.
I set goals for my future.

External Accountability

This year, I was better in school, because an adult at this school checked on me.
There are adults in this school who check in with me about my grades.
There are adults in this school who ask me about my study habits.

External Support

There are adults in this school who care about me.
There is at least one adult in this school who knows me well.
An adult at this school is proud of me.

External -- College/Career Support

How often has an adult at your school discussed the following with you:

What I want to do after high school
How to decide whether to attend college
How to apply to college
Admissions requirements for two-year colleges
Admissions requirements for four-year colleges
Your likelihood of being accepted at different types of schools
What ACT/SAT scores you need to get into the colleges you want to attend
Opportunities to attend out-of-state schools
How to apply for a scholarship
How to pay for college
Your career interests

Academic Responsibility

During this school year, about how often have you done each of the following?

Asked or answered questions in class

Talked to a teacher about class work outside of class

Prepared a draft for a paper or assignment before turning it in

Attended class with all assignments complete

Connected ideas or concepts from one class (or subject area) to another in classroom assignments or discussions

Discussed grades with teachers

Discussed ideas from readings or classes with teachers outside of class

Discussed ideas from readings or classes with others outside of class (friends, family members, etc)

Come to class without completing readings or assignments

Asked another student to get help to understand material in class

Reviewed notes after class

Prepared for exams by discussing or working through course material with other students or a teacher

In a typical 7 day week during the school-year, about how much time do you do the following outside of school per week?

Completing homework for class

Studying for tests or quizzes

Reading for your own personal interest (books, magazines, newspapers, online articles, etc.)

I know my current GPA.

I know how many credits I need to graduate.

Grit (Duckworth)

New ideas and projects sometimes distract me from previous ones.

Setbacks don't discourage me.

I have been obsessed with a certain idea or project for a short time but later lost interest.

I am a hard worker.

I often set a goal but later choose to pursue a different one.

I have difficulty maintaining my focus on projects that take more than a few months to complete.

I finish whatever I begin.

I am diligent.

College Awareness/Preparation - Fact based questions

I need to maintain a GPA at/or above 2.5 to get an Academic Challenge Scholarship. *True*

The FAFSA will help me figure out how to pay for college. *True*

Scholarship money received to pay for college has to be paid back. *False*

I can only take the ACT one time. *False*

I can have a job and attend college.

The highest possible score someone can get on the ACT is: *(Correct b. 36)*

Which of the following subjects is not on the math portion of the ACT? *(Correct c. calculus)*

Which of the following schools awards an associate's degree? *(Correct b. NWACC)*

College Awareness/Preparation - Beliefs

I have an idea of what I could major in during college.

I can't afford to go to college.

Financial aid is too complicated.

College Awareness/Preparation - Action based questions

I have visited a college or technical school website to learn about it and/or see if I want to enroll there someday.

I have visited a college or technical school campus to learn about it and/or see if I want to enroll there someday.

I know what GPA I need to get into a college.

Did you take the ACT?

Did you take the SAT?

Did you take the COMPASS test?

I studied for the ACT or SAT.

Did you fill out the FAFSA?

Did you apply for the Arkansas Scholarship Lottery?

Did you apply for another scholarship to attend college (besides the lottery scholarship)?

Did you receive a scholarship to attend college?

I have taken or I plan to take the ACT.

I have taken or I plan to take the SAT.

I have taken or I plan to take the COMPASS test.

I have studied for or I plan to study for the ACT or SAT.

I plan to fill out the FAFSA.

I plan to apply for the Arkansas Scholarship Lottery.

I plan to apply for other college scholarships.

Career Awareness

I have at least one future job in mind.

I have thought about multiple job opportunities.

I know the steps I need to take to get me on track to a future career.

Did you take the ASVAB?

I have taken or I plan to take the ASVAB.

Future Plans

After I graduate, I plan to: (Check one please).

____ Attend a two-year or community college

____ Attend a technical/vocational school

____ Attend a four-year college

____ Enter the military full time

____ Find a job

____ Other:

Razor COACH

I am in the Razor COACH Program.

If you are in Razor COACH, how often do you meet with your coach? (Circle one please.)

Once a month Twice a month Once a week Twice a week Other: _____

Appendix E – Survey Descriptive Statistics

Table E.1: End-of-year survey, descriptive statistics

Construct	# of items	Cronbach's Alpha	N
Academic self-efficacy	6	0.748	738
Academic responsibility	4 (15 sub-items)	0.804	712
Grit	8	0.638	737
Future-mindedness	5	0.683	735
External accountability	3	0.756	759
External support	3	0.836	752
College preparation – Beliefs	3	0.417	737
College preparation – Knowledge	7	0.442	705
College preparation – Actions	11	0.720	735
Career awareness	4	0.512	755
External college and career support	1 (11 sub-items)	0.939	746

Table E.2: End-of-year survey response rates and nonresponse weights by school, Cohort One, 2013-14

School	Total Sample Response Rate	Treatment Response Rate	Control Response Rate	Difference: T - C	P-value	Nonresponse weight for Treatment Group	Nonresponse weight for Control Group
Bentonville High School	45%	62%	35%	+27%	.036**	-	-
Decatur High School	92%	83%	100%	-17%	.482	1.20	1.00
Elkins High School	96%	90%	100%	-10%	.181	1.11	1.00
Fayetteville High School	-	-	-		-	-	-
Gentry High School	100%	100%	100%	0%	-	1.00	1.00
Greenland High School	69%	71%	67%	+4%	.675	1.41	1.49
Lincoln High School	85%	88%	80%	+8%	.867	1.14	1.25
Pea Ridge High School	80%	83%	75%	+8%	.822	1.20	1.33
Prairie Grove High School	56%	55%	58%	-3%	.934	1.82	1.72
Rogers Heritage High School	91%	82%	100%	-18%	.035**	1.22	1.00
Rogers High School	79%	93%	65%	+28%	.000***	1.08	1.54
Springdale High School	45%	50%	38%	+12%	.418	-	-
Har-Ber High School	-	-	-	-	-	-	-
Siloam Springs High School	40%	67%	0%	+67%	.000***	-	-
West Fork High School	58%	50%	71%	-21%	.162	2.00	1.41
Average	70%	75%	65%	+10%			

*** p<0.01, ** p<0.05, * p<0.1

NOTE: Analytic sample excludes schools where fewer than 50% of treatment or control students completed the survey

Table E.3: End-of-year survey response rates and nonresponse weights by school, Cohort Two, 2013-14

School	Sample Response Rate	Treatment Response Rate	Control Response Rate	Difference: T - C	P-value	Nonresponse weight for Treatment Group	Nonresponse weight for Control Group
Bentonville High School	72%	73%	71%	+2%	.924	1.37	1.41
Decatur High School	69%	88%	50%	+38%	.106	1.14	2.00
Elkins High School	91%	95%	85%	+10%	.355	1.05	1.18
Fayetteville High School	88%	95%	80%	+15%	.373	1.05	1.25
Gentry High School	85%	87%	82%	+5%	.802	1.15	1.22
Greenland High School	65%	75%	50%	+25%	.141	1.33	2.00
Lincoln High School	71%	78%	61%	+17%	.803	1.28	1.64
Pea Ridge High School	79%	86%	71%	+15%	.082*	1.16	1.41
Prairie Grove High School	63%	58%	75%	-17%	.913	1.72	1.33
Rogers Heritage High School	82%	79%	83%	-4%	.683	1.27	1.20
Rogers High School	93%	96%	91%	+5%	.057*	1.04	1.10
Springdale High School	86%	87%	86%	+1%	.446	1.15	1.16
Har-Ber High School	71%	68%	74%	-6%	.836	1.47	1.35
Siloam Springs High School	92%	96%	88%	+8%	.093*	1.04	1.14
West Fork High School	67%	60%	75%	-15%	.350	1.67	1.33
Average	81%	83%	79%	+4%		**1.26**	1.38

*** p<0.01, ** p<0.05, * p<0.1

Table E.4: End-of-year survey sample, Cohort One, 2013-14

	Total Sample Response Rate	Treatment Response Rate	Difference from Sample: P-value	Control Response Rate	Difference from Sample: P-value	Difference: T - C	P-value
Gender							
Male	70%	73%	.857	65%	.969	+8%	.091
Female	70%	76%		65%		+11%	
Grade							
Grade 10	-	-	-	-	-	-	-
Grade 11	78%	80%	.407	76%	.009***	+4%	.475
Grade 12	67%	72%	.407	60%	.002***	+12%	.169
Race/Ethnicity							
African American	75%	80%	.759	67%	.863	+13%	.364
Hispanic	73%	85%	.000	62%	.121	+23%	.275
White	70%	66%	.004***	74%	.008***	-8%	.286
Other	52%	50%	.003***	53%	.099*	-3%	.316

*** p<0.01, ** p<0.05, * p<0.1

Table E.5: End-of-year survey sample, Cohort Two, 2013-14

	Total Sample Response Rate	Treatment Response Rate	Difference from Sample: P-value	Control Response Rate	Difference from Sample: P-value	Difference: T - C	P-value
Gender							
Male	84%	88%	.353	79%	.677	+9%	.669
Female	82%	84%		80%		+4%	
Grade							
Grade 10	76%	77%	.142	75%	.481	+2%	.706
Grade 11	86%	88%	.121	84%	.029	+4%	.227
Grade 12	78%	84%	.476	73%	.058	+11%	.289
Race/Ethnicity							
African American	89%	92%	.544	86%	.725	+6%	.337
Hispanic	80%	89%	.329	91%	.000	-2%	.002***
White	94%	85%	.612	74%	.020	+11%	.030**
Other	74%	80%	.218	66%	.011	+14%	.258

*** p<0.01, ** p<0.05, * p<0.1

Appendix F - Results

Table F.1: Academic measures, Interaction effects, Cohort One

	Credits Earned	Core GPA	GPA
Grade			
Grade 11	-0.202 (0.199)	-0.090 (0.112)	-0.022 (0.094)
Grade 12	-0.064 (0.123)	-0.057 (0.068)	-0.047 (0.057)
Race			
African American	-0.285 (0.702)	0.326 (0.391)	0.131 (0.325)
Hispanic	-0.165 (0.153)	-0.147* (0.085)	-0.001 (0.072)
White	0.071 (0.170)	0.016 (0.095)	-0.081 (0.080)
Other Race	-0.448 (0.336)	-0.086 (0.187)	-0.115 (0.156)
Gender			
Female	0.082 (0.131)	-0.102 (0.074)	-0.030 (0.062)
Male	-0.425** (0.175)	-0.004 (0.097)	-0.057 (0.082)
Parent Education			
Potential first generation college student	0.009 (0.109)	-0.066 (0.062)	-0.017 (0.052)
One or more parent with college degree	-1.130*** (0.338)	-0.065 (0.190)	-0.258 (0.166)
Aspirations			
Aspire to attend four-year college	-0.096 (0.131)	-0.115 (0.072)	-0.074 (0.061)
Do not aspire to attend four-year college	-0.083 (0.178)	0.026 (0.098)	0.023 (0.082)
Prior Academic Performance			
Academic Quartile 1 (Lowest)	-0.471* (0.246)	-0.014 (0.136)	-0.057 (0.119)
Academic Quartile 2	0.220 (0.198)	-0.027 (0.110)	0.070 (0.093)
Academic Quartile 3	0.061 (0.204)	-0.074 (0.114)	-0.102 (0.096)
Academic Quartile 4 (Highest)	-0.262 (0.212)	-0.039 (0.117)	-0.053 (0.100)
School			
Bentonville High School	-0.132 (0.281)	0.143 (0.157)	-0.019 (0.130)
Decatur High School	0.707 (0.519)	0.866*** (0.291)	0.579** (0.240)
Elkins High School	0.243 (0.423)	0.265 (0.236)	0.132 (0.196)
Gentry High School	-0.01 (0.525)	-0.624** (0.294)	-0.217 (0.244)
Greenland High School	-1.356** (0.633)	0.469 (0.351)	-0.063 (0.291)
Lincoln High School	-0.63 (0.439)	-0.307 (0.246)	-0.318 (0.216)
Pea Ridge High School	1.651*** (0.520)	0.115 (0.293)	0.006 (0.243)
Prairie Grove High School	-0.846*** (0.299)	-0.36** (0.170)	-0.593*** (0.144)
Rogers Heritage High School	-0.391 (0.375)	0.041 (0.209)	-0.033 (0.174)
Rogers High School	-0.009 (0.200)	-0.186* (0.113)	0.182** (0.094)
Springdale High School	-0.378 (0.509)	-0.251 (0.284)	-0.326 (0.243)
Siloam Springs High School	-0.304 (0.339)	-0.229 (0.190)	-0.188 (0.157)
West Fork High School	1.097** (0.510)	0.025 (0.282)	-0.087 (0.250)

*** p<0.01, ** p<0.05, * p<0.1

NOTE: Regression includes controls for baseline measures, demographics, and characteristics.

Table F.2: Academic measures, Interaction effects, Cohort Two

	Credits Earned	Core GPA	GPA
Grade			
Grade 10	0.387 (0.236)	0.109 (0.138)	0.202* (0.107)
Grade 11	-0.251*** (0.089)	-0.067 (0.051)	-0.060 (0.041)
Grade 12	0.404*** (0.125)	-0.021 (0.072)	-0.006 (0.057)
Race			
African American	-0.585 (0.426)	-0.057 (0.242)	-0.065 (0.193)
Hispanic	-0.015 (0.115)	0.010 (0.065)	-0.078 (0.052)
White	0.041 (0.107)	-0.039 (0.061)	0.012 (0.049)
Other Race	0.121 (0.177)	-0.120 (0.102)	0.055 (0.080)
Gender			
Female	0.106 (0.090)	-0.071 (0.052)	-0.067 (0.041)
Male	-0.146 (0.133)	0.012 (0.064)	0.049 (0.051)
Parent Education			
Potential first generation college student	-0.028 (0.075)	-0.038 (0.043)	-0.036 (0.034)
One or more parent with college degree	0.244 (0.197)	-0.039 (0.112)	0.087 (0.089)
Aspirations			
Aspire to attend four-year college	0.014 (0.087)	-0.010 (0.050)	-0.019 (0.040)
Do not aspire to attend four-year college	-0.008 (0.120)	-0.090 (0.068)	-0.024 (0.054)
Prior Academic Performance			
Academic Quartile 1 (Lowest)	-0.117 (0.145)	0.014 (0.081)	0.002 (0.066)
Academic Quartile 2	-0.06 (0.14)	0.043 (0.078)	0.035 (0.064)
Academic Quartile 3	0.262* (0.139)	-0.099 (0.078)	-0.077 (0.063)
Academic Quartile 4 (Highest)	-0.039 (0.139)	-0.145* (0.077)	-0.069 (0.063)
School			
Bentonville High School	-0.172 (0.276)	-0.256 (0.156)	-0.132 (0.125)
Decatur High School	1.741*** (0.506)	-0.253 (0.284)	-0.196 (0.226)
Elkins High School	0.694 (0.493)	-0.165 (0.277)	-0.059 (0.221)
Fayetteville High School	0.233 (0.297)	0.631*** (0.167)	0.432*** (0.133)
Gentry High School	-0.347 (0.413)	0.213 (0.232)	-0.241 (0.185)
Greenland High School	-0.309 (0.374)	0.282 (0.216)	0.400** (0.167)
Lincoln High School	0.125 (0.285)	0.138 (0.161)	0.262** (0.128)
Pea Ridge High School	0.242 (0.194)	-0.199* (0.109)	-0.085 (0.088)
Prairie Grove High School	-1.151*** (0.436)	-0.68*** (0.246)	-0.303 (0.196)
Rogers Heritage High School	-0.225 (0.208)	0.216* (0.117)	0.068 (0.093)
Rogers High School	0.051 (0.17)	-0.071 (0.096)	-0.036 (0.076)
Springdale High School	-0.398* (0.238)	-0.257* (0.135)	-0.369***(0.106)
Har-Ber High School	0.169 (0.205)	0.107 (0.115)	0.122 (0.093)
Siloam Springs High School	-0.011 (0.235)	-0.335** (0.132)	-0.201* (0.105)
West Fork High School	0.33 (0.839)	0.068 (0.472)	-0.312 (0.376)

*** p<0.01, ** p<0.05, * p<0.1

NOTE: Regression includes controls for baseline measures, demographics, and characteristics.

Table F.3: Non-cognitive measures, Interaction effects, Cohort One

	Academic self-efficacy	Academic responsibility	Future-mindedness	Grit	External accountability	External support
Grade						
Grade 11	-0.044	-0.078 (0.058)	-0.120*	-0.126*	0.244**	0.118
	(0.056)		(0.069)	(0.074)	(0.101)	(0.100)
Grade 12	0.053	0.174***	0.182***	0.128****	0.406***	0.358***
	(0.036)	(0.039)	(0.046)	(0.049)	(0.067)	(0.066)
Race						
African American	0.059	0.378 (0.278)	0.850**	0.111	0.670***	-0.236
	(0.268)		(0.344)	(0.339)	(0.505)	(0.488)
Hispanic	-0.040	0.150***	0.115*	-0.069	0.579 (0.083)	0.590***
	(0.045)	(0.048)	(0.059)	(0.057)		(0.082)
White	0.124**	-0.120**	0.103 (0.075)	0.294***	0.114 (0.11)	-0.083
	(0.060)	(0.064)		(0.077)		(0.106)
Other Race	-0.019	0.213 (0.185)	-0.019	0.527***	0.768***	0.470*
	(0.148)		(0.196)	(0.194)	(0.279)	(0.27)
Gender						
Female	-0.086*	-0.064 (0.048)	0.106*	0.085	0.430***	0.213**
	(0.045)		(0.059)	(0.059)	(0.085)	(0.083)
Male	0.168***	0.245***	0.136*	0.093	0.421***	0.499***
	(0.054)	(0.058)	(0.071)	(0.071)	(0.102)	(0.101)
Parent Education						
Potential first generation college student	0.030	0.105***	0.145***	0.127***	0.434***	0.294***
	(0.035)	(0.037)	(0.045)	(0.045)	(0.065)	(0.064)
One or more parent with college degree	-0.112	-0.445***	-0.212	-0.395**	0.327 (0.235)	0.806***
	(0.124)	(0.130)	(0.159)	(0.157)		(0.230)
Aspirations						
Aspire to attend four-year college	0.073*	0.173 (0.048)	0.134**	0.084	0.602***	0.413***
	(0.044)		(0.058)	(0.058)	(0.082)	(0.084)
Do not aspire to attend four-year college	-0.048	-0.025 (0.059)	0.128*	0.068	0.259**	0.232**
	(0.055)		(0.072)	(0.071)	(0.100)	(0.101)
Prior Academic Performance						
Academic Quartile 1 (Lowest)	0.211**	0.368***	0.527***	0.012	0.975***	0.819***
	(0.094)	(0.099)	(0.118)	(0.121)	(0.172)	(0.171)
Academic Quartile 2	0.005	0.041 (0.083)	-0.001	0.016	0.709***	0.571***
	(0.074)		(0.096)	(0.099)	(0.135)	(0.135)
Academic Quartile 3	-0.169**	-0.043 (0.096)	-0.052	0.082	-0.042 (0.159)	-0.178
	(0.086)		(0.108)	(0.116)		(0.164)
Academic Quartile 4 (Highest)	0.002	-0.15 (0.094)	0.05 (0.108)	0.045	0.216 (0.158)	0.014
	(0.086)			(0.111)		(0.157)
School						
Decatur High School	-0.086	0.066 (0.202)	0.135 (0.218)	0.067	0.545* (0.322)	-0.012
	(0.189)			(0.252)		(0.307)
Elkins High School	-0.209 (0.14)	0.131 (0.151)	0.033 (0.179)	0.248	0.103 (0.265)	-0.379
				(0.187)		(0.253)
Gentry High School	-0.189	-0.133 (0.196)	-0.169	0.363	0.047 (0.33)	0.391
	(0.175)		(0.231)	(0.233)		(0.315)
Greenland High School	0.289	-0.008 (0.248)	-0.078	-0.066	0.246 (0.437)	-0.381
	(0.298)		(0.297)	(0.31)		(0.417)
Lincoln High School	0.044	-0.098 (0.172)	-0.216	-0.333	0.103 (0.304)	-0.038
	(0.161)		(0.206)	(0.215)		(0.29)

	Academic self-efficacy	Academic responsibility	Future-mindedness	Grit	External accountability	External support
Pea Ridge High School	0.376* (0.21)	-0.015 (0.215)	0.328 (0.257)	0.114 (0.269)	-0.104 (0.379)	-0.598 (0.362)
Prairie Grove High School	0.016 (0.127)	-0.137 (0.152)	0.172 (0.162)	0.408** (0.17)	-0.08 (0.24)	0.097 (0.229)
Rogers Heritage High School	0.13 (0.131)	0.22 (0.14)	0.339 (0.167)	-0.33 (0.174)	0.5** (0.246)	0.476** (0.235)
Rogers High School	0.03 (0.068)	0.113 (0.075)	0.116 (0.09)	0.062 (0.094)	0.867*** (0.126)	0.846*** (0.122)
West Fork High School	0.189 (0.216)	0.221 (0.278)	0.449 (0.277)	0.281 (0.346)	-0.523 (0.408)	0.751** (0.389)

*** p<0.01, ** p<0.05, * p<0.1

NOTE: Regression includes controls for baseline measures, demographics, and characteristics.

Table F.4: Post-secondary measures, Interaction effects, Cohort One

	External – College & Career Support	College preparation – Knowledge	College preparation – Beliefs	College preparation – Actions	Career Awareness
Grade					
Grade 11	0.336*** (0.103)	-0.049** (0.024)	-0.011 (0.078)	0.086* (0.045)	-0.004 (0.044)
Grade 12	0.328*** (0.070)	0.003 (0.015)	0.225*** (0.050)	-0.027 (0.030)	0.030 (0.052)
Race					
African American	-0.703 (0.569)	-0.188 (0.117)	0.089 (0.372)	0.036 (0.207)	0.155 (0.261)
Hispanic	0.490*** (0.083)	-0.026 (0.018)	0.112* (0.063)	0.056 (0.036)	0.009 (0.044)
White	0.100 (0.111)	-0.02 (0.024)	0.307*** (0.081)	-0.114** (0.046)	0.018 (0.057)
Other Race	0.009 (0.278)	0.178*** (0.059)	0.245 (0.21)	0.068 (0.123)	-0.093 (0.145)
Gender					
Female	0.331*** (0.086)	-0.019 (0.018)	0.263*** (0.063)	-0.026 (0.037)	-0.004 (0.044)
Male	0.295*** (0.103)	-0.013 (0.022)	0.084 (0.076)	0.021 (0.043)	0.030 (0.052)
Parent Education					
Potential first generation college student	0.321*** (0.066)	-0.027* (0.014)	0.171*** (0.048)	-0.003 (0.028)	0.040 (0.033)
One or more parent with college degree	0.259 (0.233)	0.111** (0.048)	0.402** (0.170)	-0.039 (0.099)	-0.366*** (0.119)
Aspirations					
Aspire to attend four-year college	0.420*** (0.084)	-0.007 (0.017)	0.169*** (0.061)	-0.050 (0.035)	0.068 (0.042)
Do not aspire to attend four-year college	0.294*** (0.104)	-0.005 (0.021)	0.189** (0.076)	0.062 (0.043)	-0.110** (0.052)
Prior Academic Performance					
Academic Quartile 1 (Lowest)	0.727*** (0.148)	-0.027 (0.029)	0.080 (0.104)	0.091 (0.06)	0.229*** (0.072)
Academic Quartile 2	0.348*** (0.115)	-0.017 (0.023)	0.326*** (0.085)	-0.03 (0.048)	-0.083 (0.057)
Academic Quartile 3	0.016 (0.143)	0.038 (0.028)	0.144 (0.101)	-0.075 (0.062)	-0.039 (0.071)
Academic Quartile 4 (Highest)	0.434*** (0.141)	-0.001 (0.029)	0.117 (0.102)	0.017 (0.059)	-0.039 (0.07)
School					
Decatur High School	0.053 (0.263)	-0.135** (0.06)	0.373** (0.158)	-0.086 (0.088)	-0.426*** (0.133)
Elkins High School	0.313 (0.232)	0.089* (0.047)	-0.019 (0.197)	-0.320*** (0.119)	-0.154 (0.111)
Gentry High School	0.387 (0.291)	-0.048 (0.06)	0.809 (0.243)	0.545 (0.133)	0.338** (0.137)
Greenland High School	0.888*** (0.33)	0.081*** (0.066)	0.063*** (0.184)	0.147*** (0.097)	0.008 (0.169)
Lincoln High School	-0.207 (0.241)	0.127** (0.049)	-0.133 (0.219)	-0.307 (0.12)	0.264** (0.124)

	External – College & Career Support	College preparation – Knowledge	College preparation – Beliefs	College preparation – Actions	Career Awareness
Pea Ridge High School	-0.333 (0.297)	0.148** (0.06)	0.158 (0.13)	-0.069** (0.073)	0.071 (0.153)
Prairie Grove High School	0.242 (0.176)	-0.093 (0.038)	0.078 (0.146)	-0.127 (0.08)	0.036 (0.093)
Rogers Heritage High School	0.367 (0.199)	0.015 (0.04)	0.194 (0.074)	0.044 (0.04)	0.036 (0.105)
Rogers High School	0.533*** (0.099)	-0.047** (0.021)	0.054*** (0.225)	-0.562 (0.13)	0.035 (0.051)
West Fork High School	-0.256 (0.323)	-0.14** (0.062)	0.373 (0.158)	-0.086*** (0.088)	-0.24 (0.165)

*** p<0.01, ** p<0.05, * p<0.1

NOTE: Regression includes controls for baseline measures, demographics, and characteristics.

Table F.5: Non-cognitive measures, Interaction effects, Cohort Two

	Academic self-efficacy	Academic respon-sibility	Future-mindedness	Grit	External account-tability	External support
Grade						
Grade 10	0.204***	0.343***	0.301***	0.173*	0.391***	0.036
	(0.070)	(0.073)	(0.078)	(0.091)	(0.116)	(0.117)
Grade 11	0.045*	-0.011	0.082**	0.047	0.555***	0.059
	(0.026)	(0.026)	(0.028)	(0.033)	(0.042)	(0.041)
Grade 12	0.063	0.053	0.074**	-0.180***	0.416***	-0.015
	(0.041)	(0.043)	(0.045)	(0.051)	(0.066)	(0.064)
Race						
African American	-0.109	-0.003	0.125 (0.13)	0.529 (0.15)	0.923***	0.149
	(0.124)	(0.130)			(0.193)	(0.196)
Hispanic	0.060*	0.013	0.023	0.000	0.618***	0.086
	(0.033)	(0.036)	(0.037)	(0.044)	(0.056)	(0.057)
White	0.032	0.034	0.164***	-0.112***	0.335***	0.031
	(0.033)	(0.035)	(0.038)	(0.043)	(0.054)	(0.055)
Other Race	0.263***	0.043 (0.06)	0.225***	0.093	0.415***	-0.036
	(0.056)		(0.064)	(0.073)	(0.093)	(0.096)
Gender						
Female	0.055**	0.088***	0.108***	-0.017	0.557***	0.057
	(0.028)	(0.030)	(0.032)	(0.037)	(0.046)	(0.047)
Male	0.101***	-0.064*	0.120***	0.005	0.380***	0.034
	(0.033)	(0.035)	(0.037)	(0.043)	(0.055)	(0.056)
Parent Education						
Potential first generation college student	0.071***	0.015	0.110***	-0.060**	0.509***	0.022
	(0.022)	(0.024)	(0.026)	(0.029)	(0.037)	(0.038)
One or more parent with college degree	0.095	0.092	0.130**	0.319***	0.323***	0.212**
	(0.059)	(0.063)	(0.064)	(0.073)	(0.095)	(0.096)
Aspirations						
Aspire to attend four-year college	0.041	-0.018	0.042	-0.047	0.444***	-0.014
	(0.026)	(0.028)	(0.029)	(0.034)	(0.043)	(0.044)
Do not aspire to attend four-year college	0.137***	0.104***	0.249***	0.067	0.560***	0.163***
	(0.037)	(0.038)	(0.041)	(0.047)	(0.060)	(0.007)
Prior Academic Performance						
Academic Quartile 1 (Lowest)	0.160***	0.014	0.031	-0.029	0.420***	-0.158**
	(0.044)	(0.047)	(0.051)	(0.058)	(0.073)	(0.075)
Academic Quartile 2	0.005	0.058	0.169***	0.170***	0.639***	0.056
	(0.041)	(0.044)	(0.047)	(0.055)	(0.069)	(0.071)
Academic Quartile 3	0.014	0.034	0.041***	-0.09 (0.055)	0.558***	0.229***
	(0.042)	(0.046)	(0.048)		(0.069)	(0.07)
Academic Quartile 4 (Highest)	0.118***	-0.012	0.183	-0.079	0.315***	0.041 (0.07)
	(0.041)	(0.044)	(0.047)	(0.054)	(0.07)	
School						
Bentonville High School	0.241***	0.162*	0.197**	0.453***	0.273**	0.246*
	(0.086)	(0.091)	(0.095)	(0.108)	(0.139)	(0.144)
Decatur High School	0.34***	0.426***	-0.327**	-0.072	0.627***	-0.295
	(0.128)	(0.152)	(0.164)	(0.172)	(0.211)	(0.228)
Elkins High School	-0.056	0.045	0.02 (0.17)	-0.529***	0.209	-0.828***
	(0.151)	(0.153)		(0.188)	(0.263)	(0.249)
Fayetteville High	0.154*	0.195**	0.202**	0.332***	0.848***	0.279*

	Academic self-efficacy	Academic respon-sibility	Future-mindedness	Grit	External account-tability	External support
School	(0.085)	(0.089)	(0.096)	(0.111)	(0.14)	(0.145)
Gentry High School	0.344*** (0.125)	-0.175 (0.132)	0.036 (0.15)	-0.296* (0.162)	0.254 (0.208)	0.116 (0.214)
Greenland High School	0.225* (0.129)	0.07 (0.155)	0.562*** (0.166)	-0.493*** (0.162)	1.385*** (0.208)	0.441** (0.215)
Lincoln High School	-0.034 (0.084)	-0.027 (0.094)	0.125 (0.098)	0.087 (0.11)	0.143 (0.14)	-0.013 (0.144)
Pea Ridge High School	0.015 (0.06)	0.148** (0.064)	0.208*** (0.069)	-0.296*** (0.078)	0.536*** (0.097)	0.118 (0.1)
Prairie Grove High School	-0.103 (0.132)	-0.251* (0.134)	0.345** (0.144)	0.256 (0.165)	-0.184 (0.211)	0.004 (0.218)
Rogers Heritage High School	-0.024 (0.062)	0.011 (0.066)	-0.045 (0.07)	0.291*** (0.081)	0.547*** (0.103)	0.097 (0.107)
Rogers High School	0.086* (0.049)	-0.007 (0.051)	-0.001 (0.054)	0.007 (0.063)	0.718*** (0.08)	-0.026 (0.082)
Springdale High School	-0.052 (0.076)	-0.141* (0.08)	0.123 (0.083)	-0.115 (0.092)	0.382*** (0.117)	-0.017 (0.124)
Har-Ber High School	0.119* (0.064)	0.088 (0.071)	0.189*** (0.072)	-0.087 (0.081)	0.02 (0.105)	0.017 (0.108)
Siloam Springs High School	0.073 (0.067)	-0.101 (0.07)	0.163** (0.075)	-0.098 (0.086)	0.598*** (0.11)	0.031 (0.117)
West Fork High School	0.296 (0.207)	0.769*** (0.218)	0.480** (0.233)	-0.324 (0.267)	0.83** (0.342)	-0.021 (0.353)

*** p<0.01, ** p<0.05, * p<0.1

NOTE: Regression includes controls for baseline measures, demographics, and characteristics.

Table F.6: Post-secondary measures, Interaction effects, Cohort Two

	External – College & Career Support	College preparation – Knowledge	College preparation – Beliefs	College preparation – Actions	Career Awareness
Grade					
Grade 10	0.699*** (0.122)	-0.001 (0.027)	0.158 (0.099)	0.120** (0.052)	0.106* (0.063)
Grade 11	0.682*** (0.043)	0.049*** (0.010)	0.177*** (0.035)	0.093*** (0.019)	0.090*** (0.023)
Grade 12	0.262*** (0.068)	0.028* (0.015)	0.309* (0.056)	0.131*** (0.030)	0.001 (0.037)
Race					
African American	0.739*** (0.205)	0.048 (0.046)	0.511*** (0.165)	0.012 (0.087)	0.006 (0.111)
Hispanic	0.688*** (0.059)	0.040*** (0.013)	0.159*** (0.048)	0.066*** (0.025)	0.077** (0.032)
White	0.439*** (0.059)	0.045*** (0.013)	0.268*** (0.047)	0.138*** (0.025)	0.042 (0.032)
Other Race	0.444*** (0.100)	0.008 (0.022)	0.196** (0.081)	-0.012 (0.042)	0.112** (0.053)
Gender					
Female	0.057 (0.047)	0.032*** (0.011)	0.278*** (0.040)	0.072*** (0.021)	0.042 (0.026)
Male	0.034 (0.056)	0.043*** (0.013)	0.142*** (0.048)	0.097*** (0.025)	0.109*** (0.031)
Parent Education					
Potential first generation college student	0.575*** (0.040)	0.040*** (0.009)	0.210*** (0.032)	0.083*** (0.017)	0.054** (0.021)
One or more parent with college degree	0.417*** (0.100)	0.017 (0.022)	0.295*** (0.082)	0.081* (0.044)	0.169*** (0.054)
Aspirations					
Aspire to attend four-year college	0.469*** (0.046)	0.019* (0.010)	0.196*** (0.038)	0.022 (0.020)	0.034 (0.025)
Do not aspire to attend four-year college	0.717*** (0.064)	0.071*** (0.014)	0.269*** (0.052)	0.199*** (0.027)	0.136*** (0.034)
Prior Academic Performance					
Academic Quartile 1 (Lowest)	0.565*** (0.079)	0.085*** (0.018)	0.224*** (0.065)	0.233*** (0.034)	0.027 (0.042)
Academic Quartile 2	0.557*** (0.074)	0.007 (0.017)	0.206*** (0.06)	-0.015 (0.031)	0.072* (0.039)
Academic Quartile 3	0.514*** (0.074)	0.041** (0.016)	0.221*** (0.061)	0.049 (0.032)	0.022 (0.04)
Academic Quartile 4 (Highest)	0.549*** (0.075)	0.020 (0.016)	0.250*** (0.06)	0.073** (0.031)	0.146*** (0.039)
School					
Bentonville High School	0.892*** (0.148)	-0.021 (0.033)	0.424*** (0.121)	0.035 (0.063)	0.347*** (0.081)
Decatur High School	0.410 (0.225)	-0.043 (0.049)	-0.426** (0.18)	-0.289*** (0.1)	-0.214* (0.123)
Elkins High School	-0.263	0.008 (0.062)	-0.053	0.187 (0.114)	0.104

	External – College & Career Support	College preparation – Knowledge	College preparation – Beliefs	College preparation – Actions	Career Awareness
	(0.257)		(0.213)		(0.145)
Fayetteville High School	0.809*** (0.15)	0.078* (0.035)	0.591*** (0.119)	0.289*** (0.066)	0.182** (0.081)
Gentry High School	0.618*** (0.221)	0.153*** (0.051)	0.43** (0.207)	-0.017 (0.100)	0.053 (0.128)
Greenland High School	0.405* (0.222)	-0.068 (0.049)	0.717*** (0.177)	0.309*** (0.097)	0.096 (0.138)
Lincoln High School	0.215 (0.153)	0.008 (0.035)	0.004 (0.119)	0.328*** (0.067)	-0.018 (0.081)
Pea Ridge High School	0.736*** (0.107)	-0.005 (0.024)	0.234*** (0.084)	0.154*** (0.045)	-0.045 (0.057)
Prairie Grove High School	0.105 (0.225)	0.033 (0.052)	0.412** (0.179)	0.107 (0.1)	0.282** (0.122)
Rogers Heritage High School	0.619*** (0.109)	0.059** (0.024)	0.511*** (0.088)	-0.002 (0.047)	0.159*** (0.059)
Rogers High School	0.776*** (0.084)	0.09*** (0.019)	-0.056 (0.069)	0.022 (0.037)	0.019 (0.046)
Springdale High School	0.418*** (0.127)	0.013 (0.029)	-0.152 (0.099)	-0.012 (0.055)	-0.001 (0.068)
Har-Ber High School	0.014 (0.113)	0.049* (0.026)	0.329*** (0.089)	0.140*** (0.047)	0.026 (0.06)
Siloam Springs High School	0.686*** (0.118)	0.021 (0.027)	0.407*** (0.097)	0.017 (0.05)	0.155** (0.063)
West Fork High School	1.186*** (0.365)	-0.459*** (0.08)	-0.722** (0.292)	-0.133 (0.156)	0.463** (0.199)

Table F.7: Post-Secondary measures, Cohort One

	FAFSA Intention (Underclassmen)	**FAFSA Completion (Seniors)**	**Apply for Arkansas Academic Challenge Scholarship (Seniors)**	**Scholarship recipient (Seniors)**
Treatment	0.211** (0.075)	-0.165*** (0.044)	-0.030 (0.040)	-0.024 (0.043)
African American	2.408 (0.437)	-0.241 (0.155)	-0.014 (0.142)	0.388 (0.151)
Hispanic	1.625 (0.370)	-	-	-
White	1.549 (0.398)	0.082 (0.066)	0.179 (0.061)	0.191 (0.065)
Other Race	1.614 (0.403)	0.030 (0.125)	-0.214 (0.114)	-0.202 (0.123)
Male	0.067** (0.076)	0.023 (0.047)	0.113** (0.043)	0.027 (0.046)
Aspire to attend four-year college	-0.107 (0.088)	0.293*** (0.047)	0.234*** (0.043)	0.204*** (0.046)
Potential first generation college student	0.348** (0.138)	-0.207** (0.085)	-0.202** (0.077)	0.113 (0.082)
Grade	X	X	X	X
School	X	X	X	X
Constant	-2.542*** (0.709)	0.079 (0.132)	-0.005 (0.121)	-0.160 (0.133)
Weighted N	173	125	125	125
R-Squared	0.295	0.290	0.403	0.260

*** p<0.01, ** p<0.05, * p<0.1

Table F.8: Post-Secondary measures, Cohort Two

	FAFSA Intention (Underclassmen)	**FAFSA Completion (Seniors)**	**Apply for Arkansas Academic Challenge Scholarship (Seniors)**	**Scholarship recipient (Seniors)**
Treatment	0.045 (0.029)	0.096** (0.041)	0.182*** (0.041)	0.052 (0.045)
African American	-0.361 (0.289)	-0.350 (0.280)	0.833*** (0278)	-0.781 (0.0306)
Hispanic	-0.590 (0.279)	-0.446 (0.245)	0.341 (0.243)	-0.594 (0.267)
White	-0.477 (0.277)	-0.276 (0.245)	0.653*** (0.243)	-0.241 (0.267)
Other Race	-0.540 (0.279)	-0.292 (0.244)	0.429* (0.243)	-0.457 (0.267)
Male	-0.051* (0.030)	-0.079* (0.043)	0.004 (0.042)	-0.034 (0.047)
Aspire to attend four-year college	0.135*** (0.032)	0.192*** (0.043)	0.193*** (0.043)	0.253*** (0.048)
Potential first generation college student	0.111** (0.045)	-0.111* (0.060)	-0.118** (0.060)	-0.110* (0.066)
Grade	X	X	X	X
School	X	X	X	X
Constant	0.955*** (0.293)	1.174***(0.337)	0.010 (0.335)	1.258*** (0.368)
Weighted N	467	319	269	240
R-Squared	0.107	0.303	0.417	0.326

*** p<0.01, ** p<0.05, * p<0.1

Table F.9: Post-secondary measure, End-of-year survey "After I graduate, I plan to…", Cohort One

	Attend a two-year or community college	**Attend a technical/vocational school**	**Attend a four-year college**	**Enter the military full time**	**Find a job**
Treatment	0.165	-0.085***	-0.126***	0.014	0.064
	(0.035)	(0.027)	(0.037)	(0.017)	(0.021)
African	-0.677	0.149	0.219	0.026	0.303
American	(0.266)	(0.203)	(0.280)	(0.132)	(0.159)
Hispanic	-0.862	0.272	0.239	0.060	0.161
	(0.236)	(0.180)	(0.248)	(0.117)	(0.140)
White	-0.899	0.163	0.379	0.111	0.095
	(0.241)	(0.184)	(0.253)	(0.119)	(0.143)
Other Race	-0.960	0.402	0.392	0.053	0.073
	(0.251)	(0.191)	(0.263)	(0.124)	(0.149)
Male	-0.299***	0.136***	0.117***	0.006	-0.053
	(0.036)	(0.028)	(0.038)	(0.018)	(0.022)
Aspire to attend four-year college	-0.037	-0.115***	0.163***	-0.051***	-0.008
	(0.037)	(0.029)	(0.043)	(0.019)	(0.022)
Potential first generation college student	-0.050	0.083*	-0.054	0.053	0.075
	(0.066)	(0.050)	(0.069)	(0.032)	(0.039)
Grade	X	X	X	X	X
School	X	X	X	X	X
Constant	1.426***	-0.189	-0.021	-0.065	-0.218
	(0.253)	(0.193)	(0.265)	(0.125)	(0.151)
Weighted N	244	244	244	244	244
R-Squared	0.222	0.183	0.197	0.082	0.120

*** p<0.01, ** p<0.05, * p<0.1

Table F.10: Post-secondary measure, End-of-year survey "After I graduate, I plan to…", Cohort Two

	Attend a two-year or community college	**Attend a technical/vocational school**	**Attend a four-year college**	**Enter the military full time**	**Find a job**
Treatment	-0.012	0.023**	0.022	0.010	-0.055***
	(0.020)	(0.010)	(0.023)	(0.008)	(0.011)
African	-0.221	0.043	0.277	-0.024	-0.029
American	(0.168)	(0.080)	(0.191)	(0.068)	(0.089)
Hispanic	-0.248	0.088	0.043	0.037	0.043
	(0.160)	(0.076)	(0.182)	(0.065)	(0.085)
White	-0.201	0.095	0.025	0.010	0.044
	(0.159)	(0.076)	(0.181)	(0.064)	(0.084)
Other Race	-0.145	0.048	-0.003	0.028	0.038
	(0.160)	(0.076)	(0.182)	(0.065)	(0.085)
Male	-0.073***	-0.004	-0.001	0.016*	0.021
	(0.021)	(0.014)	(0.024)	(0.008)	(0.011)
Aspire to attend four-year college	-0.181	-0.069	0.398***	-0.042	-0.084
	(0.022)	(0.010)	(0.025)-	(0.009)	(0.012)
Potential first generation college student	0.066**	-0.007	0.047	-0.022*	-0.008
	(0.030)	(0.014)	(0.035)	(0.012)	(0.016)
Grade	X	X	X	X	X
School	X	X	X	X	X
Constant	0.694***	-0.029	0.316	-0.013	0.085
	(0.163)	(0.078)	(0.186)	(0.066)	(0.086)
Weighted N	361	68	915	42	96
R-Squared	0.140	0.104	0.223	0.096	0.126

*** p<0.01, ** p<0.05, * p<0.1

Appendix G – IRB

UNIVERSITY OF ARKANSAS

Office of Research Compliance
Institutional Review Board

November 5, 2013

MEMORANDUM

TO:	Kristin Higgins Dan Kissinger Gary Ritter
FROM:	Ro Windwalker IRB Coordinator
RE:	PROJECT CONTINUATION & MODIFICATION
IRB Protocol #:	12-08-038
Protocol Title:	*Northwest Arkansas Career and College Coaching Program*
Review Type:	☐ EXEMPT ☒ EXPEDITED ☐ FULL IRB
Previous Approval Period:	Start Date: 08/27/2012 Expiration Date: 08/19/2013
New Expiration Date:	08/19/2014

Your request to extend and modify the referenced protocol has been approved by the IRB. If at the end of this period you wish to continue the project, you must submit a request using the form *Continuing Review for IRB Approved Projects*, prior to the expiration date. Failure to obtain approval for a continuation on or prior to this new expiration date will result in termination of the protocol and you will be required to submit a new protocol to the IRB before continuing the project. Data collected past the protocol expiration date may need to be eliminated from the dataset should you wish to publish. Only data collected under a currently approved protocol can be certified by the IRB for any purpose.

This protocol has been approved for 2,150 total participants. If you wish to make *any* modifications in the approved protocol, including enrolling more than this number, you must seek approval *prior to* implementing those changes. All modifications should be requested in writing (email is acceptable) and must provide sufficient detail to assess the impact of the change.

If you have questions or need any assistance from the IRB, please contact me at 210 Administration Building, 5-2208, or irb@uark.edu.

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