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Paige D'Angelo

Trinity College, Hartford Connecticut, paige.dangelo@trincoll.edu

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Early College Coursework and College Readiness: Evidence from HMTCA

Paige D'Angelo

Educational Studies Senior Research Project

Trinity College-Hartford, CT

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Abstract

Early college high schools (ECHSs) are partnerships between high schools and colleges or universities that provide high school students with an opportunity to learn more about the college experience. These early college initiatives introduce students to higher education's academic and cultural life. Prior research on ECHSs has examined high school students and focuses on students' college enrollment and retention. Less attention has been paid to students' self-reported preparedness for college. My research examines Hartford Magnet Trinity College Academy (HMTCA) and its partnership with Trinity College. In order to assess the impact of this collaboration on student preparedness, a survey was administered to HMTCA alumni. From responses to this questionnaire, I sought to answer two questions: *In what ways do recent Hartford Magnet Trinity College Academy (HMTCA) alumni describe how their high school experience at Trinity College prepared them for college? Do the students' responses vary by whether they took a Trinity College class or not?* This study finds that HMTCA's partnership with Trinity College is an effective resource for its students. The results indicate that all students who participated in the program benefited in some way by their exposure to the Trinity College campus, but the students who took college courses at Trinity College were better prepared for collegiate academics. Based on the results of this study, high school students who were exposed to a college campus seem to be comfortable navigating the physical setting of a college. However, students who enrolled in actual college courses were more ready for collegiate academics, suggesting that there are at least two dimensions to the impact of early college high schools.

Early College Coursework and College Readiness: Evidence from HMTCA

Introduction

Trinity College, a small, private, liberal arts college, is located in Hartford, Connecticut, with approximately 2,117 undergraduates (Trinity College Website). Trinity College students are held to high expectations while they pursue the academic path of their choosing (Trinity College Website). Trinity College also offers opportunities to study outside of mainstream classes. One of these is the chance to tutor or student teach at the Hartford Magnet Trinity College Academy (HMTCA). HMTCA offers a rigorous curriculum to prepare its students for college. The magnet school works to blend its traditional classes into an early college model. An early college model links high schools to college classes and experiences to provide high school students with this exposure while still being in high school. Since 2011, HMTCA has partnered with Trinity College to further its early college model and mission (Hartford Schools). To provide HMTCA students with an early college experience, HMTCA offers summer writing and sciences courses held on Trinity College's campus and also allows seniors to enroll in Trinity College classes during the academic school year. Other HMTCA classes and social events take advantage of this higher education environment (Trinity College Website). Because Trinity College and HMTCA are in close proximity and in partnership, I had the opportunity to research and examine the program's efficacy. To make this evaluation, I relied on data from HMTCA graduates of this initiative. I divided this information into two groups: one consisted of HMTCA alumni who did not take a Trinity College course, but still were exposed to Trinity College in some way, and the other group was composed of alumni who took a Trinity College course. Thus, my paper asks: *In what ways do recent Hartford Magnet Trinity College Academy (HMTCA) alumni describe how*

their high school experience at Trinity College prepared them for college? Do the students' responses vary by whether they took a Trinity College class or not?

My research will help Trinity College and HMTCA evaluate whether their partnership is worth the time and effort that both institutions invest in its success. Generally, my research will provide teachers, professors, and parents better understanding into how HMTCA students feel about this program and assess if the early college model is working. More specifically, my research project will help the faculty involved in the HMTCA-Trinity College partnership identify areas for improvement. Overall, my data determines if college readiness programs prepare high school students for college.

Based on the data analyzed through the evaluation survey, my study indicates that all HMTCA students who participated in classes or activities at Trinity College benefited from the exposure, but the students who also attended classes at Trinity College were better prepared for collegiate academics.

Most studies that measure the success of early college and college readiness programs rely on research conducted on the high schools and their students during the high school experience. To evaluate the positive effects of these programs, I thought it would be better to look at their alumni, measure their achievements, and hear about their experiences after entering college. Not only does the literature focus on the contemporary experience of high school students, it also primarily focuses on larger institutions and state-wide studies, whereas this particular study discusses a local magnet school, HMTCA, that neighbors its partnering school, Trinity College.

Literature Review

On the whole, prior research explains what the early college model is, what early college entails, and why it should be offered to students. It also seeks to evaluate its efficacy and correlation to collegiate enrollment and retention rates. Although some studies address the same issues I am researching, they focus more on high school students, whereas mine focuses on alumni and work in tandem with the partnership director. My research asks alumni what they thought about the early college model education, and investigates if there was a difference between the students who took a Trinity College course versus those who did not. I examine how alumni experiences with the early college partnership affected their college experience.

Background on Early College High Schools

Colleagues at Jobs for the Future, Mamadou Ndiaye and Rebecca Wolfe, discuss what early college can do for students in their article “Early College Can Boost College Success Rates for Low-Income, First-Generation Students.” They define early college programs as “high school and colleges joining forces to work together to create a path to college access and completion for millions of low-income and first-generation students (Ndiaye & Wolfe, 2016, p. 32). These educational initiatives help high school students receive college credit with no costs attached. A broader push towards collegiate high school opportunities was due in no small measure to the Bill and Melinda Gates Foundation’s deep funding to “implement early college as a large-scale national reform” in 2001. In Ndiaye and Wolfe’s study, the authors state that students enrolled in early college programs “graduate from high school, enroll in college, and persist in the first year at two to three times the rate of their peers” (Ndiaye & Wolfe, 2016, p. 33). By placing these early college high schools near college campuses, students can “immerse” themselves into the college culture.

Similar to the study cited above, the article “Preparing Students for College: The Implementation and Impact of the Early College High School Model,” by researchers Julie Edmunds, Lawrence Bernstein, Elizabeth Glennie, John Willse, Nina Arshavsky, Fatih Unlu, Deborah Bartz, Todd Silberman, David Scales, and Andrew Dallas split 285 9th graders from North Carolina who either attend Middleton or Downing Early College High School, into two groups (Edmunds et al., 2010, p. 348-349). They sought to examine the success of Early College High Schools (ECHSs), that provide underrepresented students with college credit prior to graduating from high school, and work to increase graduations rates among them. The researchers zeroed in on the programs’ “implementation and impact” by looking at two questions — “What is the impact of the ECHS [(early college high school)] on students’ course-taking?” and “To what extent do ECHS implement the required components of the model?” (Edmunds et al., 2010, p. 349). The treatment group consisted of 132 ECHS students who were offered a place in this curriculum, but could not attend or might have “dropped out” (Edmunds et al., 2010, p. 351). The control group consisted of 159 students who were not offered admissions to the early college program. Edmunds et al., analyzed the data provided by “The North Carolina Education Research Data Center” through multivariate regressions (Edmunds et al., 2010, p. 352). They looked at “course taking or enrollment” and “course progression” (Edmunds et al., 2010, p. 353). They surveyed students and staff, visited the sites, and looked at “school annual self-assessments” (Edmunds et al., 2010, p. 354). The results for course taking “show that a larger percentage of ECHS students were progressing more rapidly through a college preparatory track of study, compared to the control-group students” (Edmunds et al., 2010, p. 355). The study also illustrates that ECHSs provides their students with a “more accelerated course load to a wider range of students” compared to normal high schools (Edmunds et al., 2010, p. 356). ECHSs help

students understand what college would be like by providing them with college preparatory courses and “college awareness activities” (Edmunds et al., 2010, p. 360). (Edmunds et al., 2010, p. 360). The article concludes that if students have the chance to take harder coursework classes they should have the opportunity to do so.

The article “Early College, Early Success: Early College High School Initiative Impact Study” by researchers Andrea Berger, Lori Turk-Bicakci et al., illustrate the impact of early colleges. They used a “lottery-based randomized experiment” to select students from ten early college programs who applied for college admissions (Berger et al., 2013, p. iv). The authors compared the outcomes of students who were offered enrollment to students who were not. This study found that there was a positive impact on students’ English Language Arts (ELA) achievement, but there was not a significant impact on mathematics achievements or on GPA (Berger et al., 2013, p. 29). Early college attendees also showed higher high school graduation rates and enrollment in either a two-year or four-year college (Berger et al., 2013, p. 31 & 36). In general, this study found those who most benefited from an early college experience were characterized as female, a minority, a low-income student, or having “higher levels of prior achievement relative to their peers” (Berger et al., 2013, p. 48). The groups compared in this study did well academically in high school.

In their article, “Early Colleges at Scale: Impacts on Secondary and Postsecondary Outcomes,” researchers Lauen, Barrett, Fuller, and Janda look at the impact that early college high schools have on the students that attend them. ECHSs are intended to provide “at risk” and “underrepresented” students with a “smooth transition from high school to college” (Lauen et al., 2017, p. 526). Their research focuses on students who chose to be a part of an ECHS. Their two research questions were “What is the ECHS impact on important secondary and postsecondary

enrollment and completion outcomes?” and “Do ECHS impacts vary by student subgroup, district average achievement, and host-campus type?” (Lauen et al., 2017, p. 529). To answer these questions, they analyzed data from The North Carolina Department of Public Instruction during the years of 2004-05 and 2011-12 (Lauen et al., 2017, p. 529). They used a doubly robust propensity-score matching approach with a 3:1 ratio to examine and compare characteristics of the students enrolling in these ECHSs to those who are not. Lauen et al., found that students who participated in ECHSs “outperform” students who attended traditional high schools (Lauen et al., 2017, p. 535). These students had higher English and Math scores, “fewer absences” and were “more likely to graduate high school within 5 years” (Lauen et al., 2017, p. 535). By examining race, the research showed that black students had more of a positive outcome by participating in this program compared to white students (Lauen et al., 2017, p. 538). Place of residence also affects desire to attend an ECHS. The data displays that ECHSs are more beneficial to students’ whose town high school is considered low performing (Lauen et al., 2017, p. 542). In conclusion, the research explained positive effects of the ECHS system as it provides students with “higher expectations” and an opportunity to learn what the college experience is like (Lauen et al., 2017, p. 546).

Vice-president at Jobs for the Future Michael Webb and student, Lia Mayka’s report “*Unconventional Wisdom: A Profile of the Graduates of Early College High School*” discusses the Jobs for the Future (JFF) initiative. The goal of JFF is to help underrepresented students seen as “unlikely to attend or succeed in college” (Webb & Mayka, 2011, p. 1). This report analyzes “The Integrated Survey” and “The Early College High School Initiative Student Information System” (Webb & Mayka, 2011, p. 1-2). Webb and Mayka’s sample only consists of schools that were opened for at least four years during the years of 2007, 2008, and 2009 (Webb &

Mayka, 2011, p. 4). These data sets were administered and controlled by JFF (Webb & Mayka, 2011, p. 1-2). Through the results, the authors found an increase in college participation by students who are usually “underrepresented in higher education” (Webb & Mayka, 2011, p. 3). 70% of the students who were part of the early college program were students of color, and 59% were “eligible for free and reduced lunch” (Webb & Mayka, 2011, p. 3). The early college schools are more likely to enroll students who need a significant amount of “academic and personal support” to succeed in higher-level courses (Webb & Mayka, 2011, p. 4). The researchers also state that “more than half of all early college schools are located on a college campus” (Webb & Mayka, 2011, p. 7). Overall, these programs increase the likelihood of high school graduation rates and allow high school students to earn college credit. In my study, HMTCA does not necessarily fit the criteria of this underrepresented population, but does fit more generally in the category of being in an early college partnership, rather than an early college high school.

Dual Enrollment

Students in high school enrolled in college classes are called “dual enrollment” pupils. The effects of this educational model are explained by researchers Melinda Karp, Juan Calcagno, Katherine Hughes, Dong Jeong, Tomas Bailey and Katherine Hughes in their 2007 article, “The Postsecondary Achievement of Participants in Dual Enrollment: An Analysis of Student Outcomes in Two States.” The authors discuss the impact of dual enrollment. These programs provide high school students “with a challenging academic experience and the opportunity to earn college credit” (Karp et al., 2007, p. 1). Instead of taking Advanced Placement or International Baccalaureate courses, dual enrollment programs give high school students the chance to immerse themselves in a college curriculum. In their study, they used datasets from

one college in Florida and one college in New York City (Karp et al., 2007, p. 1-3). These high school students were not given preferential treatment and were encouraged to use the same syllabi as college students. Karp, Calcagno, Hughes, Jeong and Bailey found that students who participated in dual enrollment had a higher chance of graduating high school, enrolling in college (including an increase in attendance at a four-year college), and earning higher grade point averages than students who did not participate in dual enrollment (Karp et al., 2007, p. 1-5). These positive outcomes of dual enrollment reflect my data collection.

Dual enrollment is further explained by Katherine Hughes in her article, “Dual Enrollment: Postsecondary/Secondary Partnerships to Prepare Students.” Hughes investigated various dynamics between colleges and high schools and how this pertains to dual enrollment. Hughes discusses how high school counselors take the time to teach their high school students various norms around college conduct and behavior so they will adapt more easily to college classroom settings (Hughes, 2010, p. 12). Some college professors know that they have high school students in their classrooms, while others do not. The article states that it could be beneficial for professors to know this demographic information, in case the high school students “are showing signs of poor performance, communication can be made with the high school to elicit extra support or to provide counseling” (Hughes, 2010, p. 12). In this instance, the objective of dual enrollment is to provide students with the additional support they might need to succeed in college. Hughes found that dual enrollment for high school students increases their chances of graduating and enrolling in four-year institutions. Her research suggests that students who have college experience while still in high school are able to garner “the skills and confidence to raise their educational aspirations” (Hughes, 2010, p. 13). Exposure to college

while still in high school is positively displayed through the alumni quantitative and qualitative responses I received.

Motivation

Professors and Doctoral students Marvarene Oliver, Richard Ricard, Karl Witt, Melissa Alvarado, and Patricia Hill's article, "Creating College Advising Connections: Comparing Motivational Beliefs of Early College High School Students to Traditional First-Year University Students" compares 111 freshmen and sophomores involved in early college high schools (ECHSs) to 846 first-year college students by analyzing their "self-reported motivational profiles" (Oliver et al., 2010, p. 14). They use "The College Student Inventory, Form B (CSI-B)" to survey these two groups. (Oliver et al., 2010, p. 16). Oliver et al., found that in terms of academic motivation, freshmen in college "were less likely to have poor attitude or be independent or arrogant, express a strong desire to finishing college, and were more willing to make sacrifice to achieve" (Oliver et al., 2010, p. 18). This study did not find significant differences between the high school students and the college students in measuring "drop-out proneness" and "predicted academic difficulty" (Oliver et al., 2010, p. 19). But the study found a difference between these two group of students when analyzing educational stress: high school students reported having more stress (Oliver et al., 2010, p. 19). This article suggests that a better understanding of early college high school students "can help college and university advisor and student development personnel provide services that may enhance student academic success and college persistence" (Oliver et al., 2010, p. 20). The research shows that early college high school students differ from the larger pool of first-year college students.

Qualitative Data

In the article, “Voices of Early College High School Graduates in Texas: A Narrative Study” researchers JoDee Woodcock and Heather Beal took a different approach to the recent ECHS research and look at qualitative data to hear about students’ experiences, both social and academic (Woodcock & Beal, 2017, p. 56). Their two research questions are, “How do graduates of ECHSs in Texas describe their academic experiences as ECHS students? and “How do they describe their social experiences?” (Woodcock & Beal, 2017, p. 60). To answer these questions, they conducted one-on-one interviews. One student, Ana, discussed her overwhelming workload at the ECHS, which was also far more rigorous than she anticipated. Because she had to put so much time into her studies, Ana had less time to enjoy the things she did outside of school (Woodcock & Beal, 2017, p. 64). Ana also observed that being on a “college campus made it so that we had a lot of freedom,” which she confessed she did not handle well (Woodcock & Beal, 2017, p. 65). Overall, Ana recommended the program as long as the students had better perspective of its higher expectations. Brandon, on the other hand, had a great experience with ECHS. He did not love high school because it was not challenging enough, but when he participated in ECHS, it provided him with “a good challenge” (Woodcock & Beal, 2017, p. 67). Unlike Ana, Brandon enjoyed the freedom. In conclusion, all students had a positive view on what ECHSs had to offer as long as they had a solid understanding of the demanding environments they were entering.

Denise McDonald and Tina Farrell’s (2012) article “Out of the Mouths of Babes: Early College High School Students’ Transformational Learning Experiences” discusses how Early College High Schools (ECHSs) prepare its students in terms of “academic preparedness, social preparedness, and personal preparedness” (McDonald & Farrell, 2012, p. 217). The goal of early college high schools are to help students graduate “with a high school diploma while

simultaneously earning an associate's degree" (McDonald & Farrell, 2012, p. 218). This study used focus group interviews to hear the voices and perspectives of the ECHS students. There were 60 freshmen and 15 sophomores who agreed to participate during the 2008-2009 academic year (McDonald & Farrell, 2012, p. 225-226). They were selected randomly by doing a "numbered lottery process" (McDonald & Farrell, 2012, p. 223). The freshmen were split up into two groups of eight and the sophomores were split up into one group of eight and one group of seven. McDonald and Farrell explained that the students' early college high school experience "supported acclimation to collegiate coursework and positively affected their scholarly development and identity" (McDonald & Farrell, 2012, p. 241). Early college high school programs provided students with a means to procure academic, social, and emotional support.

Data and Methods

Participants

The evaluation survey that was distributed by Robert Cotto, a Trinity College professor who also serves as the liaison between Trinity College and HMTCA, included all 83 Hartford Magnet Trinity College Academy (HMTCA) alumni students who applied to enroll in a Trinity College class (Professor Robert Cotto). All 83 alumni students met the application criteria to apply to take a Trinity College course. These requirements consisted of having an average of 2.75 GPA, a recommendation by an HMTCA teacher and school counselor, and the requisite motivation to take a college course to earn credit (Professor Robert Cotto).

Only 29 of the 83 alumni responded to the survey. In this particular study, the data that was collected and analyzed was from the 29 HMTCA alumni who applied to take college courses at Trinity College. Twenty-three of the students were enrolled and took a Trinity College class, while the other six students did not, but still had exposure to the college's campus. All the

participants were involved with one or more activities on Trinity College's campus, but the 23 students who took a course, were taught by a college professor, and were integrated within the college's student body.

Not only did I analyze responses from the survey, but I also observed a focus group that consisted of seven current HMTCA students.

Procedures

HMTCA was of personal and academic interest for me because of my past research, including investigations into the efficacy of college preparation programs. Trinity College's access to HMTCA made it easy to focus on this high school. For this study on an early college partnership, I collected data by analyzing parts of a survey that were sent out to all participants involved in the HMTCA-Trinity College program. I specifically looked at the graduates of HMTCA. During the summer of 2018 into September 2018, I planned on preparing a survey to send out to HMTCA alumni from a list of email addresses provided by Professor Cotto. I sought to ask questions that would provide quantitative and qualitative data. But Professor Cotto, the source of the email address list, told me he also intended to send out a survey on topics related to my inquiry. He asked if I would like to add questions to this larger survey, rather than sending out one on my own. These were the questions I attached to the larger survey:

1. *Are you currently enrolled in college?*
2. *Have you ever enrolled in college?*
3. *Which Trinity College class(es) did you take as an HMTCA student?*
4. *Did you experience as an HMTCA student interacting with Trinity College prepare you for college in any of the following areas?*
 - a. *The experience helped me understand the...*
 - i. *Reading requirements of a college course*
 - ii. *Writing requirements of a college course*

- iii. *Study Time requirements of a college course*
- iv. *Technology requirements of a college course*
- v. *Classroom Behavior requirements of a college course*
- b. *As a result of the experience, I feel/felt more*
 - i. *Motivated to engage in college life.*
 - ii. *Comfortable navigating a college campus*

The first three questions were designed to have Yes/No answers. If a student answered “Yes” to either questions two or three, they were asked to move onto four. However, if the student said “No,” they were naturally skipped to a different section. By having the students answer Yes/No questions I could see the difference between the two groups that I was studying, that is, alumni who took a Trinity College course versus those who did not. While these are the four questions I added, the full survey for alumni is included in Appendix A of this paper.

The evaluation survey was created and distributed through Qualtrics, a software that collects and helps analyze data for researchers. Overall, the questions added were aimed to capture the students’ experiences, general preparedness, and their feelings towards the HMTCA-Trinity College partnership.

I wanted to see if the partnership was valued by the students and if it helped them be more successful in a college environment. I sent the questions to Professor Cotto and waited for further notification on its progress. After a long and thorough process of revision, the survey was distributed on October 15, 2018 to all participants in the HMTCA-Trinity College partnership, except current HMTCA seniors. This exclusion did not affect my study because I was only examining alumni data.

Once the data was received, I inputted the responses that were given to me on an Excel spreadsheet into Stata Statistical Software. In Stata, these responses were coded and analyzed through the variables that I chose for Table 1 and Table 2.

On November 15, I observed a focus group with seven current HMTCA seniors.

Research Positionality

Because the survey was distributed by Professor Cotto and not by me, and returned to him, I was an outside factor on the data collection, and my position as a researcher did not affect the data I received. The main part of my findings comes from the survey that was distributed to HMTCA alumni through the professor that oversees the partnership between Trinity College and HMTCA. I also sat in on a focus group that was composed of HMTCA students who are currently enrolled in the partnership. My presence was unobtrusive and tangential to the discussions. I worked to ensure my position as a note taker had no impact on students' perspectives. The students' feelings on the program did not seem to be affected by my presence. They shared both their positive and negative experiences.

Ethical Considerations

All of the data analyzed for this research was de-identified, meaning that it cannot be traced back to individual students. By attaching my questions to an already-existing survey and using de-identified data the IRB review process was facilitated.

Findings and Discussion

Alumni Characteristics and Exposure to Trinity College

Below, I analyze the HMTCA alumni characteristics and exposure to Trinity College. Because all the students in this study were exposed to Trinity College's campus in some way and applied to take a college course at Trinity College, they were asked what specific activity or activities they were involved in at Trinity College during their high school career. Alumni were asked whether they took a Trinity College course, took an HMTCA course at Trinity College, attended a summer writing or science academy workshop on the college's campus, and whether

they participated in any extracurricular activities at Trinity College. Also analyzed was their sex at birth, the race or ethnicity, their GPA, and their educational attainment.

Questions #34, #37 #55, #56, # 80 in Appendix A.

Table 1: *Alumni Characteristics and Exposure to Trinity College*

	Non-Trinity Course students	Trinity Course Students
Sample Size (N)	6	23
<i>Sex</i>		
Male	33.3%	34.8%
Female	66.7%	65.2%
<i>Race</i>		
White	40%	43.5%
Non-White	60%	56.5%
<i>Grade Point Average (GPA)</i>		
High School	3.3 (0.4)	3.6 (0.3)
<i>Partnership Experiences</i>		
Took HMTCA Course at Trinity	100%	82.6%
Took Summer Writing or Science Academy Course at Trinity	83.3%	87%
Took Extra Curricular at Trinity	50%	34.8%
Took Other Activity at Trinity	16.7%	21.7%
<i>Educational Attainment</i>		
High School Degree Only	33.3%	30.4%
Some College	66.7%	69.6%

Through Table 1, it appears that all 29 students in this data collection had equally substantial exposure to Trinity College’s campus. This is shown because of the 6 students who did not take a Trinity College class, all of them were still exposed to the physical environment of Trinity College through their high school, HMTCA, courses held on the college’s campus and also through other activities that the partnership provides.

The results of the table display that non-Trinity College course students—the alumni who applied, but for one reason or another did not end up taking a Trinity College course—and Trinity College course students—the alumni who did in fact take a Trinity College course—do not differ from each other, but rather share similarities.

Of the 29 students who were exposed to the early college partnership and applied to take a course, 23 (79.3%) of them took at least one Trinity College class. Of the 29 high school students who applied, more were considered to be female and non-white students. Non-white students consisted of being either Black, Hispanic, Latino, or shared two or more races. While the GPA of the two groups differed slightly, in general they were in the same range. The non-Trinity College course students had a mean GPA of 3.3 with a standard deviation of 0.4 and the Trinity College course students had a mean GPA of 3.6 with a standard deviation of 0.3.

Having the results show that there is not a huge difference in GPA between non-Trinity course students and Trinity College course students suggests that there is a selection bias in the HMTCA-Trinity College partnership process. The students who are eligible to apply to take a class on Trinity College's campus are not a random selection of students, but rather a group of students that share similar qualities. Students who apply to take courses have to have a certain GPA and have recommendations from teachers and counselors at their high school.

Students themselves also acknowledge that there is selection bias in this partnership. For example, when asked to rate their feelings about the statement: "All students get to equally participate in opportunities between HMTCA and Trinity College," a white, female student, who took a Trinity College class, disagreed and stated, that "Only students with higher GPA's were able to participate which made other students feel less worthy and less involved in the partnership" (HMTCA Alumni). Another female Trinity College course student also disagreed and explained that, "Not all students get to participate in opportunities. If you didn't do well enough in the high school courses you were not getting called to get the chance to apply for a college course" (HMTCA Alumni). But a white, male, who was a non-Trinity College course student, agreed with the statement and explained that, "All High School students know that they

are able to attend classes taught by Trinity College faculty members if they had a certain GPA. It is the individual student's decision whether or not to earn the said GPA to be able to gain access to the Trinity College courses offered to HMTCA students" (HMTCA Alumni). These qualitative responses suggest that only HMTCA's most qualified students are encouraged to take a Trinity College course. If students meet the criteria in terms of GPA and recommendations, teachers and counselors of the high school recommend they take advantage of this early college opportunity.

The alumni educational attainment after high school is also shown in this dataset. When asked what their highest educational attainment is, with the options of answering—less than high school, high school graduate, some college, 2-year degree, 4-year degree, Professional degree, Doctorate, Technical degree or certificate—66.7% of non-Trinity College course students said, "some college" and 69.6% of Trinity College course students also answered, "some college." Although there is a slight difference, these 29 alumni are largely similar in their educational attainment status after high school.

This post-intervention result relates to past studies that look at more traditional outcomes of early college students. Most of the research listed in the Literature Review section discusses the outcomes of the students who enroll in these early college models. Ndiaye and Wolfe found that students who are enrolled in these types of programs "graduate from high school, enroll in college, and persist in the first year at two to three times the rate of their peers" (Ndiaye & Wolfe, 2016, p. 33). Along similar lines, Berger et al., research findings suggest that early college high school students, who did well in high school, display higher graduation rates and enrollment rates in either a two-year or four-year college (Berger et al., 2013, p. 31 & 36). Karp, Calcagno, Hughes, Jeong and Bailey's study found that students in dual enrollment programs have a higher

chance of graduating high school, enrolling in college (including an increase in attendance at a four-year college), and have higher grade point averages compared to non-dual enrollment students (Karp et al., 2007). These studies suggest that students in early college programs perform at a higher level than students who are not involved in these programs.

Table 1 depicts that among the sample of HMTCA students who qualified and applied to take a Trinity College course, there are no noticeable differences between the two groups, but rather similarities between student types.

Perceptions on Preparedness for College

My next set of results derives from the question: *Did your experience as an HMTCA student interacting with Trinity College prepare you for college in any of the following areas?* On a scale from 1 to 7, 1 = strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 – neither agree nor disagree, 5 = somewhat agree, 6 = agree, and 7 = strongly agree, students were asked to rate their feelings about their preparedness for reading, writing, study time, technology, and classroom behavior. Also, they were asked to rate their feelings on motivation to engage in college life and their comfort level when navigating their designated college or university campus. All of the data is shown by giving the mean and standardization for each response. To see if there were any statistically significant findings, I use a T-Test and P-value, where if the T-Test value is over 1.96 and the P-Value is less than .05, it is statistically significant.

Question #68 in Appendix A.

Table 2: ***Perceptions on Preparedness for College***

	Non-Trinity Course Students	Trinity Course Students	T-Statistics
Sample Size (N)	6	23	
<i>My experience at Trinity College helped me</i>			

<i>understand the...</i>			
Reading Requirements	4.7 (2.1)	5.8 (1.5)	1.54
Writing Requirements	5.0 (.90)	5.8 (1.6)	1.16
Study Time Requirements	4.2 (1.0)	5.3 (1.3)	2.02*
Technology Requirements	4.0 (1.3)	5.0 (1.7)	1.37
Classroom Behavior Requirements	4.2 (1.7)	5.9 (1.2)	2.84*
<i>As a result of the experience, I feel/felt more...</i>			
Motivation to Engage	3.2 (1.3)	5.4 (1.4)	3.61*
Comfortable Navigating Campus	5.6 (1.0)	5.8 (1.2)	0.31

Scale → 1: Strongly Disagree to 7: Strongly Agree

*P-value <.05 Statistically Significant

The results of Table 2 display that non-Trinity College course students and Trinity College course students have significant differences in their perceptions of their college readiness. This result is shown through both the “hard skills” and “soft skills” of the college experience. The classroom “hard skills” are the reading, writing and technology requirements, while the “soft skills” refer to classroom behavior requirements and feelings of being motivated to engage in college life.

Non-Trinity College course students said that they somewhat agree (mean = 4.7) that this experience helped them understand the reading requirements in college, while Trinity College course students said they agree (mean = 5.8) with this statement. In terms of writing requirements in college, both non-Trinity College course students and Trinity College course students agree that this experience helped them better prepare. For whether they feel or felt that this experience prepared them for study time requirements, non-Trinity College course students said they neither agree nor disagree (mean = 4.2) with this statement, whereas students who took a course somewhat agree (mean = 5.3) that it helped prepare them. This table also shows that non-Trinity College course students reported that they neither agree nor disagree (mean = 4.0)

whether this early college experience helped them prepare for technology requirements, whereas students who took a college course in high school somewhat agree (mean = 5.0) that it helped prepare them.

There is a difference between the two groups on their feelings of being prepared for classroom behavior requirements. Non-Trinity College course students said they neither agree nor disagree (mean = 4.2), while Trinity College course students said they agree (mean = 5.9) that it prepared them. A black, male student, who took a Trinity College class, wrote “I had better insight into how a classroom is run, and I got a good grasp of how college class centered around lectures is approached” (HMTCA Alumni). Also, a white, female student expressed that the partnership, “helped [her] be prepared for what a general college class would look like” (HMTCA Alumni). Not only were students more prepared for a college classroom set-up, but they were also prepared for professor/student relationships. One student wrote that participation in the program taught him “how to interact with professors” (HMTCA Alumni). During the focus group a student also expressed how going to Trinity College helped them learn the communication skills between classmates and professors (HMTCA Student). Compared to high school, one student said that at Trinity College there are more lectures, in which “the professors [are] talking at you,” and that the instructor does not wait to “make sure you have your notes down” (HMTCA Student). In terms of what was expected of students in college, my data suggests that students enrolled in a Trinity College course have a better understanding of what is expected of them in class, how a classroom is run, and an appreciation of the dynamics between professors and their students.

There is also a difference between these two groups of students on their feelings of motivation to engage in college life. Non-Trinity College course students reported that they

somewhat disagree (mean = 3.2) with the idea that they feel or felt motivated to engage in college life, while students who took a Trinity College course said they somewhat agree (mean = 5.4) with this preparedness.

The results on whether the students feel or felt more comfortable navigating their college campus showed that everyone who was exposed to Trinity College, which is to say all the alumni in this sample, feel or felt more comfortable navigating their college's campus. Many students qualitatively expressed their preparedness in navigating their college campus. A male student who did not take a Trinity College course, but did take an HMTCA course on the college's campus wrote, "I was very prepared to navigate the campus I attended which helped a lot" (HMTCA Alumni). Another student who was not in a Trinity College class stated that exposure to the college "allowed [him] to understand that [he] needed to pace [himself] to get across [his college's] campus at a reasonable time" (HMCTA Alumni). The students in the focus group discussed how the program helped them realize time management in terms of the walking time between classes (HMTCA Student). On the whole, students were prepared for their physical setting of college through their exposure to the Trinity College campus as a high school student.

Asterisks on the tables above indicate statistically significant data; that is, anything over 1.96 for the T-Test. This included alumni's feelings on preparedness for study and classroom behavior requirements, and their feelings of motivation towards engaging in college life.

Through these two tables, my study finds that HMTCA's partnership with Trinity College is an effective resource for its students. The results indicate that all students who participated in the program benefitted in some way by their exposure to the Trinity College campus, but the students who also attended classes at Trinity College were better prepared for collegiate

academics. Due to my limited sample size of 29, all my findings should be interpreted with caution.

Conclusion

Through a survey of HMTCA alumni and observations of an HMTCA student focus group, this study sought to answer: *In what ways do recent Hartford Magnet Trinity College Academy (HMTCA) alumni describe how their high school experience at Trinity College prepared them for college? Do the students' responses vary by whether they took a Trinity College class or not?* The collected data suggests that HMTCA and Trinity College's early college program is effective to not only the students who took a college course, but also for students who were involved in the partnership in other ways. By using both quantitative and qualitative results, I learned about the characteristics of the students who applied to take a Trinity College course, and about their feelings on how prepared they felt for college.

I also received some feedback on how to improve this partnership. When asked what improvements could be made to the program, students expressed ideas on limiting the requirements to be eligible to apply to take a Trinity College course, adding life skills courses, offer more opportunities that do not have an academic component (which could include college dormitory residence and more exposure to campus social life), and also more variation in class options. One student wrote "Make it fair. Include all students and abolish the criteria currently establish" (HMTCA Alumni). Another student stated that the partnership should "initiate a First Year Success Center that helps not only first-year students (freshman and transfers), but also the high school students that have very little experience with college, yet have to live up the expectations as everyone else" (HMTCA Alumni). Similarly, another student responded that, "If students want to take classes at Trinity College they should also take an introductory course

before they start taking college courses so they get a feel of what their classes will be like” (HMTCA Alumni). Students who are currently at HMTCA discussed how they wish to get more involved with Trinity College events on its campus and not just be there during their class time. All of these recommendations would give HMTCA students a better preview of the college experience.

While students did suggest improvements for the program, they highly regard the benefits of the HMTCA-Trinity College partnership. Trinity College provided them with communication skills, time management skills, requirements for their academic work, access to the college’s resources and the different styles of a college classroom compared to that of a high school. All of these helped them better navigate their college campuses. The results of my data demonstrate that the HMTCA-Trinity College early college model is extremely beneficial to all students involved in the partnership, which suggests that the time and effort both schools, HMTCA and Trinity College, put into the program is worth it and should continue well into the future.

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Appendix A - Survey Questions Designated to Alumni

Q71 The purpose of this survey is to understand the experiences of the HMTCA-Trinity partnership from multiple perspectives. Feedback from this survey will be used to evaluate the impact of the HMTCA-Trinity partnership and to make improvements in the future. This survey is voluntary, confidential, and you may stop at any time. We value your opinions and the survey will ask about your interest in participating in a future focus group about the HMTCA-Trinity partnership.

I agree to participate in this survey:

- Yes (1)
- No (3)

Skip To: Q14 If Q71 = Yes

Skip To: End of Survey If Q71 = No

Q14 Please tell us your role in the HMTCA-Trinity College partnership.

- HMTCA Student (current) (1)
- HMTCA Student (graduated) (2)
- HMTCA Faculty or Staff (3)
- HMTCA administration (4)
- Trinity Faculty (5)
- Trinity Staff (6)

Q77 All students get to equally participate in opportunities between HMTCA and Trinity College.

- Strongly Disagree (1)
- Disagree (2)
- Neutral (3)
- Agree (4)
- Strongly Agree (5)

Q78 Please explain your response to the previous question about equal opportunities.

Q9 On a scale of 1 to 10, please rate your overall experience with the HMTCA-Trinity College partnership. 10 is the highest/best rating.

Q9b Explain briefly why you rated your experience with this number.

Q10 Based on your experience, what would you change or suggest to improve the HMTCA-Trinity College partnership?

Q80 What sex were you assigned at birth (such as on a birth certificate)?

- Female (1)
- Male (2)

Q55 What is your race or ethnicity? (select one)

- Black (1)
- White (2)
- American Indian or Alaska Native (3)
- Native Hawaiian (4)
- Hispanic or Latino (of any race) (5)
- Asian (6)
- Two or more races (7)

Q36 My work status is...

- Employed full time (18)
- Employed part time (19)
- Unemployed looking for work (20)
- Unemployed not looking for work (21)
- Retired (22)
- Student (23)
- Disabled (24)

Q37 My highest education attainment is...(select one)

- Less than high school (11)
- High school graduate (12)
- Some college (13)
- 2 year degree (14)
- 4 year degree (15)
- Professional degree (16)
- Doctorate (17)
- Technical degree or certificate (18)

Q66 Have you ever enrolled in college?

- Yes (1)
- No (2)

*Display This Question:

If Q66 = Yes

Q67 Are you currently enrolled in college?

- Yes (1)
- No (2)
- Yes, but I am currently on leave or taking time off. (3)

*Display This Question:

If Q67 != No

Q34 Click to write the question text

0 1 1 2 2 3 3 4

What was your final high school Grade Point Average (GPA)? ()	
What is your current college or technical school Grade Point Average (GPA)? ()	

Q56 Please select all that activities that apply:

- I am an HMTCA alumni who has taken a Trinity College course. (1)
- I am an HMTCA alumni who has taken a high school course on Trinity’s campus. (2)
- I am an HMTCA alumni who has attended the summer writing and/or science academy. (3)
- I am an HMTCA alumni who has participated in extracurricular activities at Trinity College (e.g. music, sports, tutoring, etc.) (5)
- What other activities did you participate in at Trinity College? Please write in response. (4) _____

*Display This Question:

If Q56 = I am an HMTCA alumni who has taken a Trinity College course.

Q70 Which Trinity College class(es) did you take as an HMTCA student?

*Display This Question:

If Q56 = I am an HMTCA alumni who has taken a Trinity College course.

Q2 I felt prepared to take my college course(s) at Trinity. (multiple choice)

- Strongly Disagree (1)
- Disagree (2)
- Neutral (3)
- Agree (4)
- Strongly Agree (5)
- Not Applicable (21)

*Display This Question:

If Q56 = I am an HMTCA alumni who has taken a Trinity College course.

Q3 I felt supported in my academic work in my college course(s) at Trinity.

- Strongly Disagree (1)
- Disagree (2)
- Neutral (3)
- Agree (4)
- Strongly agree (5)

*Display This Question:

If Q56 = I am an HMTCA alumni who has taken a Trinity College course.

Q4 I had the resources I needed to be successful at Trinity.

- Strongly Disagree (1)
- Disagree (2)
- Neutral (3)
- Agree (4)
- Strongly agree (5)

*Display This Question:

If Q56 = I am an HMTCA alumni who has taken a Trinity College course.

Q58 Please provide some more specific details that explain your answer to the previous questions about access to preparedness, support, and resources.

Q68 Did your experience as an HMTCA student interacting with Trinity College prepare you for college in any of the following areas? Rate on a scale from 1 to 7. 1: Being strong disagree to 7: being strong agree.

- The experience helped me understand the READING requirements of a college course.
- The experience helped me understand the WRITING requirements of a college course.
- The experience helped me understand the STUDY TIME requirements of a college course.
- The experience helped me understand the TECHNOLOGY requirements of a college course.
- The experience helped me understand the CLASSROOM BEHAVIOR requirements of a college course.
- As a result of the experience, I feel/felt more motivated to engage in college life.
- As a result of the experience, I feel/felt more comfortable navigating a college campus.

Q69 Did your experience as an HMTCA student interacting with Trinity College prepare you for college in some other way not listed above. Explain.

Q29 My experiences with Trinity College changed how I learn.

- Strongly Disagree (1)
- Disagree (2)
- Neutral (3)
- Agree (4)
- Strongly agree (5)

Q31 My experiences with Trinity have better prepared me for college.

- Strongly Disagree (1)
- Disagree (2)
- Neutral (3)
- Agree (4)
- Strongly agree (5)

Q33 Can you describe one specific example from your experience that helps explain your answer to this question?
