A PROMISING REFORM: THE EARLY COLLEGE HIGH SCHOOL:

FINDING SUPPORTS THAT WORK

by

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DISSERTATION ABSTRACT

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The Early College High School (ECHS) provides high school students with the opportunity to earn college credit while they are still in high school. The school in the study, the Metro East Web Academy, is one such school and currently has an ECHS population of 119 students. After close examination of the five aspects of the theoretical framework, the one area in need of closer scrutiny was the area of supports. Through this study, three main supports were examined: tutoring through Mt. Hood Community College, an advisory class that is not a required aspect of the ECHS program, and college information sessions. A survey was delivered to the 119 current students in the early college program and to 49 current graduates of the program. Various demographic groups did utilize supports to greater and lesser degrees: first year students did not access the tutoring center at the same rates as second or third year students; no students in any demographic groups chose the advisory or AVID and TRIO as the most helpful college support, and second language speakers did indicate that time management was a greater challenge to college success than did their non second language speaking peers.

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CHAPTER I

INTRODUCTION AND LITERATURE REVIEW

For specific groups of students, the current educational system in the U.S. is not working well. Student achievement gaps exist among various ethnic groups, between low and high-income groups, and between students who have access to rigorous curriculum and those who do not. For example, during the 2013-2014 school year, 87% of White students graduated from high school, 73% of Black students graduated, 70% of American Indian students graduated, and 76% of Hispanic students graduated (National Center, 2016). The gap in graduation rates between ethnic groups is a relevant issue in our current educational system. Fixing the issue, though, would involve not only changing schools, but society as well. According to Beatty (2013), schools alone cannot change the inequities within our schools and within our country, but attempting to provide equal opportunities within education could narrow the student achievement gaps, such as graduation rates.

As a teacher and administrator working within the education system within the United States, I understand that changing educational outcomes for disadvantaged students is more than a school issue, and yet through school reform and by continuous educational improvement, schools can make a difference. New developments in education offer opportunities for optimism and encouraging prospects in closing achievement gaps to underserved students such as ethnic minorities, low-income students, and first-generation college students (FGCS).

An opportunity of hope and reform for high schools is the development of early college high school student (ECHS) programs. ECHS programs provide historically

underserved high school students, such as low-income students or first-generation college students (FGCS), with the opportunity to take college classes while still in high school. By enrolling in college classes early, high school students develop study skills, a rigorous foundation of knowledge, and time management skills before entering a four-year university (Berger, 2010). According to Locke and McKenzie (2015), creating a direct line between high schools and colleges could improve graduation rates and career readiness among historically underserved populations.

> The founders and partners of ECHSs believe that by changing the composition of the high school years, compressing the number of years to a college degree, and establishing a direct line to college through partnerships with institutions of higher learning, there is greater potential to improve graduation rates and better prepare students for entry into highly skilled careers (p. 159).

The premise behind ECHSs is to build a complete system for students – a rigorous academic foundation in both math and reading; a social system of peers, teachers, and family members who support a student's academic goals; and a transitional change from high school to college which involves managing time well, studying effectively for assessments, and utilizing available resources such as tutoring centers and writing labs (Berger, 2010). Through such broad support programs, students begin to develop the skills and knowledge needed to earn college credit and to continue on through four years of college study.

Not only does the ECHS system provide support for students to build capacity for college and career readiness, but it also builds financial feasibility. Because ECHSs are part of the public school system, attendance in these schools requires no cost from

students. Students from low-income families or from non-college going families are able to access the U.S. university system through ECHSs without accruing debt. Consequently, early college high schools eliminate one of the largest obstacles to college degree attainment – cost (Locke & Mckenzie, 2015). As part of their primary goals, ECHSs also provide knowledge about scholarships and many students within ECHSs admit that a primary reason for attending this type of school is access to free college credit, classes, and scholarships (Locke & Mckenzie, 2015).

In 2002, The Bill and Melinda Gates Foundation started the Early College High School Initiative (ECHSI) with five primary goals, to (a) provide opportunities for traditionally underserved students; (b) generate articulation agreements between the high school, a local higher education facility, and the community; (c) develop an academic program that meets the needs of high school students taking college classes; (d) provide support systems, both academic and social; and (e) create partnerships that advance the early college initiative through further collaboration and policies (Berger, 2010).

Seven intermediaries were originally appointed by The Gates Foundation to broker partnerships between early college high schools and institutes of higher education (Berger, 2010). The intermediaries distributed funds to high schools that had successfully partnered with a two-year or four-year college. Because North Carolina lead the state initiative in the ECHS start-up, most schools originated in that state. Currently, more than 240 ECHSs exist, with 77 located in North Carolina (Berger, 2010; Cabarrus, 2017). Much of the early college research was conducted in North Carolina through two main research organizations, American Institute of Research (AIR) and SRI International (SRI) (Berger, 2010).

Since the onset of ECHSI in 2002, the number of early college high schools has increased exponentially, currently totaling more than 240 (Berger, 2013). These schools vary in size, supports, student demographics, and college credit outcomes. To ascertain if ECHSs are fulfilling their original goals, the theoretical framework of the early college high schools should be examined. Are the ECHS models (a) providing historically underserved students with college going opportunities, (b) generating articulation agreements between high schools and college, (c) developing an academic program that meets the needs of the participants, (d) providing academic and social supports, and (e) creating partnerships.

This theoretical framework lead to the following guiding principles for the literature review. First, the literature on opportunities available to students in the early college high school students was examined. Second, the types of students who accessed services through the ECHS model was explored. Finally, the specific supports for the success of ECHS students were surveyed.

Literature Search and Results

In this section, I review the literature search process on ECHSs. I include the number of references gathered from each step and explain why some references were not retained while others were. I also discuss the need for constant revision of the literature gathered because ECHSs provide a very new educational methodology and current research is still under development.

Table 1 summarizes the articles found in the various stages of my literature search. During my initial search of the University of Oregon databases, I used ERIC, JSTOR, and Proquest Social Sciences Premium. To search for articles in these databases,

I used the terms “College NOW” and “high school and college credit,” resulting in a total of 900 articles.

The second step began a winnowing process of the original 900 articles. I conducted an overview of the original sources and found a common term, *early college high schools* with the corresponding acronym, *ECHS*. When I used quotation marks around “early college high schools,” the search process resulted in 457 articles. By adding the qualification, *peer reviewed journals only*, the pool narrowed to 121 articles, eliminating a number of articles containing little empirical data. Finally, I added the search term “impact” to the collection of 121 articles, which resulted in 58 peer-reviewed articles. After close examination of the 58 peer-reviewed articles, I eliminated those with a specific discipline focus, such as the impact of early college high schools on math or science, and eliminated articles that did not focus on the impact of ECHSs on historically underserved students. The articles that remained focused on the impact of early colleges on graduation rates, college enrollment, and college completion for ethnic minorities, first-generation college students, and low-income students.

I considered eliminating articles based on publication date, but the early college initiative is very recent, beginning in 2002 (Berger, 2010). All of the studies conducted on early college high schools were conducted after 2002; the earliest study of the 11 retained was completed in 2010 and the most recent was completed in 2017. I did not need to narrow my search in terms of dates because the studies were recent and timely.

After eliminating articles with a specific discipline focus, I eliminated any studies that were repetitive and contained limited empirical evidence. My final article count was 11. I then included a Google Search article from the Community College Research Center

(CCRC), a center that conducts much research on early college programs and has informed many decisions in our own early college program at The Metro East Web Academy (MEWA). Information from CCRC was often used as a reference in the original 11 articles.

To broaden my search further and to include articles that might not have been part of the University of Oregon database, a colleague suggested using a REL librarian through Education Northwest. When I approached the REL librarian, I asked her to look for articles that might provide unique information about ECHSs; information not found in the empirical studies I had already collected and that focused primarily on supports, the fourth area of focus in the theoretical framework. The REL librarian looked for articles that focused on case studies of historically underserved students that painted a unique picture of ECHSs and discussed the importance of support systems. One article was found through the REL librarian and was included for a total of 13 articles.

My dissertation advisor conducted a search using the Journal of Research on Educational Effectiveness and Educational Evaluation and Policy Analysis and found nine references that she recommended I consider. Of those references, five were already included in my original reference list, and I was unable to locate one of the remaining four. I added the three remaining articles for a total of 16, which are included in the reference list. After closely examining the articles proposed by my advisor, I found that two of them were un-published articles, which I had not included in my original search. This explained why the references from my dissertation advisor had not appeared in my original search. The remaining article of the three focused on the cost of early college high schools, which I had also not included in my original search.

Finally, because early college high schools are a recent educational development, research continues to be conducted through the US Department of Education as well as other research institutions. Three relevant and prominent studies were published after my initial literature search. Two of the reports were conducted by Regional Educational Laboratory (REL) and one was conducted by What Works Clearinghouse. All three reports were relevant and timely and have been included in the final literature review.

The literature search process resulted in a wide array of references relevant to my Research Questions. Almost all of the references included information on historically underserved students and graduation rates, college attendance, and college completion. Some of the references also addressed the question of supports and whether or not historically underserved students were receiving the supports necessary to be successful in college classes. Table 1 illustrates the steps taken and the number of articles collected at each step.

Table 1

Databases, Search terms, Number of Articles

Database	Search Term	Number of Articles	Additional Parameters	Number of Articles Retained
University of Oregon: ERIC, JSTOR, ProQuest	College Now, College and high school credit	900+	"ECHS," peer reviewed, "impact," and empirical studies	11
Google Scholar	"ECHS" and "Impact"	1	Community College Research Center	1
REL Librarian through Education Northwest	"ECHS" and "Impact"	3	Unique and recent findings	3
Journal of Research on Educational Effectiveness and Educational Evaluation and Policy Analysis	"ECHS" and "Impact" and cost and unpublished	9	Removed "cost" and repeated articles	3
What Works Clearinghouse	Parameters of What Works Clearinghouse met	1	Published most recently; 2017	1
Total				19

After reviewing and analyzing the article reference list, I elected to organize findings into six main categories: (a) type of research methods employed in the studies, (b) description of the subjects, (c) setting or locations in which the research was conducted, (d) supports utilized by various ECHSs across the country, (e) positive results of ECHSs on historically underserved students, and (f) drawbacks of ECHSs on

historically underserved students. The tables included in literature review sections further describe these six main categories.

In my review, I will examine differences between types of research methods. I will examine qualitative versus quantitative studies and the varying results from these studies. For example, many of the quantitative studies had positive results, while the qualitative studies did not. The same is true for the description of the subjects found in the studies; large sample numbers indicated positive results, while smaller sample numbers did not. To capture positive and negative results of ECHSs, I will examine both benefits and drawbacks in Table 5.

Summary of Research

The first area of focus in the summary of research section includes the types of research methods used and how the studies were conducted. The second section examines the main location of the studies and some limitations presented within these findings. The third section describes the students in the early college high schools. The fourth section discusses positive results of ECHSs on historically underserved students, and the fifth section discusses the drawbacks of ECHSs on historically underserved students. The final section discusses the supports used within ECHSs.

Types of Research. Table 2 summarizes the type of research in the article review. When I originally examined the types of research conducted on the early college high school models, I found four longitudinal studies. These studies included research between the years 2005 and 2011 (Berger, 2013; Bernstein, et al, 2014; Edmunds et al, 2016; Haxton et al, 2016), inconclusive dates which likely stemmed from two factors.

The first factor was due to the funding. Funding for the ECHSs began in 2002 with the ECHS initiative through the Bill and Melinda Gates Foundation. These funds were instrumental in starting numerous schools through seven main grantees, but because the schools were under development in 2002, 2003, and 2004, results were not available until 2005 for students within these programs.

The second reason the studies were conducted between 2005 and 2011 was to produce adequate longitudinal studies. To measure high school graduation rates, college enrollment rates, and college graduation rates students were followed from their 9th grade year in the ECHSs to college graduation, six or seven years later. If an ECHS was started in 2002 or 2003, this data would not be available until 2009 or 2010. Because the timeline between high school and college is shortened by two years through ECHSs, some students are able to graduate in six or seven years rather than the traditional eight.

Interviews and focus groups were also used when analyzing ECHSs. The interviews and focus groups produced very different results from the quantitative studies. For example, Locke (2014) interviewed 10 Latina students who were not successful in the early college program. Through the interviews, students revealed that accessing benefits of the program was difficult because the students had obligations outside of school such as work requirements or childcare responsibilities. If lab or tutoring opportunities were available after school hours, the Latina students were unable to access these supports due to other commitments. By examining interview and survey data, a different perspective of ECHSs was conveyed (Howley et al, 2013; Locke, 2016; Locke, 2014; Ongaga, 2010; Saenz, 2015; Schaeffer & Rivera, 2016). Some supports within the ECHS model were discussed in both articles by Locke (2014, 2016), but the available

supports weren't adequate for student success in the program. The interviews and focus groups revealed that even though more college credits were earned by minority students in ECHSs, obstacles to further success still existed.

Table 2

Summary of Types of Studies

Citation	Qualitative Case Studies	Quantitative Extant Studies	Mixed Studies	Longitudinal Studies
1			X	
2			X	
3				X
4		X		
5		X		
6				X
7			X	
8				X
9			X	
10	X			
11	X			
12	X			
13	X			
14		X		
15	X			
16	X			
17				X
18		X		
19		X		
Total	6	5	4	4

The range of information provided through both the qualitative and quantitative articles presents a more holistic view of early college high school programs than might have occurred had only quantitative data been analyzed through longitudinal research studies. The use of qualitative data through interviews and focus groups personalized the results and helped researchers understand how and why the ECHS program is working or not working for many historically underserved students. For example, the eight Latina students interviewed in the study by Locke (2016) proposec that access to college classes had its difficulties. Some of the students were unable to access tutoring services after school because they had to work or take care of siblings. Personal information of this type is difficult to disaggregate from quantitative studies.

Subjects. Table 3 summarizes the demographic characteristics of the subjects in the literature review. The aim of the early college high school initiative is to provide historically underserved students with the opportunity to earn college credits and to develop college-going skills before entering college. The aim of the ECHSI is also to provide adequate supports for students in the program. Because ECHS programs target diverse students, thirteen of the studies examined students who fell into at least one of the following categories: (a) ethnic minority, (b) first-generation college student (FGCS), or (c) low-income student. Minority status was included in twelve of the studies, ranging from 3% (Howley et al., 2013) of the students within the study to 100% (Locke et al, 2014) of the students. Low-economic status of students was included in nine of the studies, ranging from 47% (Haxton,et al, 2016) to 100% (Locke, 2016), and six of the studies included first-generation college student status, ranging from 22% (Haxton et al,

2016) to 100% (Locke, 2016). This wide range in all three areas of interest, ethnic minorities, low-income, and FGCS, illustrates how dissimilar the various sites and student populations were.

Table 3

Summary of Subjects

	Subjects			Subject Designation		
Study	*n*	Students	Sites	Minority	*Low SES	**FGCS
1	73		X	70%	55%	—
2	2,458	X		49%	44%	—
3	1,350	X		39%	50%	40%
4	299, 685	X		—	—	—
5	59,499	X		17%	27%	—
6	285	X		29%	45%	56%
7	1,607	X		41%	51%	41%
8	1,651	X		40%	51%	—
9	1,044	X		53%	47%	22%
10	14		X	3%	—	—
11	8	X		100%	100%	100%
12	10	X		100%	—	—
13	21	X		48%	71%	67%
14	233,573	X		25%	52%	—
15	17	X		100%	—	—
16	9	X		100%	—	—
17	716	X		—	—	—
18	5		X (studies)	—	—	—
19	5		X	—	—	—
Total		15	4			

The unit of analysis within the studies was either students in the ECHSs, or the sites of the ECHS schools. ECHS sites were analyzed within three of the studies, while 15 studies evaluated student-level data, and one study by What Works Clearinghouse (2017) evaluated other studies. The sample sizes ranged from as focused as eight students at one site (Locke, 2016), to 299,685 students in multiple sites within three different states (CCRC, 2012). This wide range of studies and students provides a comprehensive picture of the ECHS schools and their commitment to serving historically underserved students through a college readiness focus.

Even though the early college high school initiative purports to focus primarily on historically underserved students, a wide disparity of minority students enrolled in the ECHSs was found between the programs. The seven case studies had the lowest number of students, but the highest percentage of minority students. Two of the studies examined only Latina students within an early college program to determine why the Latina students were under-performing when compared with other students within the program (Locke, 2014, 2016). In contrast to the focus groups and interviews conducted by Locke with 100 percent minority students, a study conducted by Howley et al. (2013) found only 3% minority students among the 14 ECHS sites under review (Howley et al., 2016).

The original purpose of the ECHS model was to provide historically underserved students with college-going opportunities and to deliver adequate support for these students. The studies conducted on ECHSs as included in this literature review do focus on low-income students, first-generation college students, and low-income students. These historically underserved students were examined within 15 of the references, and

at all of the sites included in those 15 references. Many of the studies mentioned the use of student supports, but did not necessarily focus on the effectiveness of these supports or attendance within the supports.

Settings. Table 4 summarizes the settings of the early college high schools. The setting for twelve of the studies was North Carolina, while six of the studies were conducted in North Carolina as well as another state, and six of the studies were conducted in states outside of North Carolina. Many of the current ECHSs are still in North Carolina and have been the focus for much of the research conducted on early college high schools. Even though my literature review process involved the inclusion of literature from other states, the bulk of the longitudinal studies are from North Carolina. It may be that these studies are generalizable to other states, but further analysis of the specifics of the schools will need to be conducted before generalizability can be assured.

To develop a more holistic view of ECHSs across the U.S., I broadened my search to studies conducted outside of North Carolina. Many of the articles I found that were conducted in other states did not contain comparative quantitative information. Because ECHSs in North Carolina have greater longevity than some ECHSs in other locations, more reliable and conclusive studies have emerged from N.C. (Berger, 2010). Much of the information collected on ECHSs outside of the North Carolina studies is more limited in scope, except for information collected from the Community College Research Center (CCRC), which has conducted empirical studies in Florida, California, and New York (CCRC, 2012). Also, both studies conducted by Regional Educational Laboratory (REL) (2017) took place in states outside of North Carolina, but the information collected, especially in Oregon (Pierson et al, 2017) was somewhat limited.

The settings of two of the studies were unique; Saenz and Coombs (2015) conducted a qualitative study in an urban setting, but the researchers did not include the name of the state within the study, and Howley et al. (2013) conducted the only study in a rural area, and this study implied that ECHSs do have positive results in rural settings.

A total of five studies were conducted in urban areas, while twelve studies were conducted in both urban and rural settings. Because most of the studies were conducted in both urban and rural settings, the data collected could be applicable to a variety of settings. This broad swath of applicability could help future researchers with school and setting generalizability.

Table 4

Summary of Settings

	State		Location		
Citation	N. Carolina	Other	Rural	Urban	Both
1	X	X			X
2	X				
3	X				X
4		X			X
5		X			X
6	X			X	
7	X				X
8	X				X
9	X	X			X
10		X	X		
11		X		X	
12		X		X	
13	X			X	
14		X			X
15				X	
16	X	X			X
17	X				X
18	X	X			X
19	X	X			X
Total	12	11	1	5	12

A total of five studies were conducted in urban areas, while twelve studies were conducted in both urban and rural settings. Because most of the studies were conducted

in both urban and rural settings, the data collected could be applicable to a variety of settings. This broad swath of applicability could help future researchers with school and setting generalizability.

Supports. Many of the references included in this paper discussed supports available for students in ECHSs. These supports ranged from tutoring services that focused on academic achievement, to affective supports that provided relationship-building opportunities between peers and between teacher and student (Edmunds, 2013). According to Bernstein (2014) "These data suggest to us that the reduction or elimination of performance gaps in the early college is a product of purposeful implementation of a high quality learning environment with high expectations, rigorous courses and instruction, positive relationships, extensive student support, and teacher taking responsibility for student learning" (p. 4). ECHSs provide many supports for the students in the early college high schools, which contribute to the overall success of the students. According to Berger (2010), in 2007-2008, 89% of ECs reported that they provide some sort of both academic and social support courses.

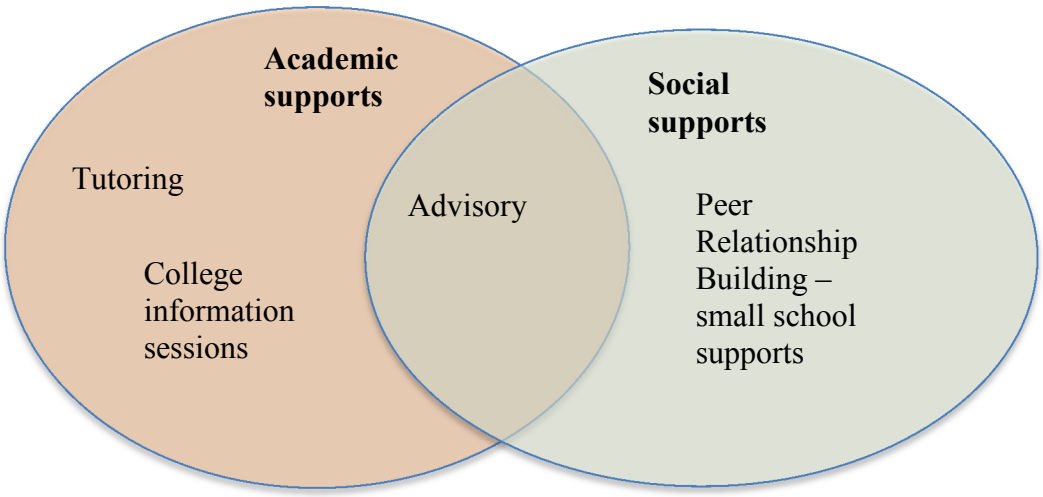

Figure 1: Academic vs. social supports

Tutoring or academic support classes were mentioned in twelve of the nineteen references. Tutoring or academic support ranged in scope from after school tutoring sessions to summer evening or weekend tutoring sessions (Berger, 2013). Along with these academic supports, some ECHSs offer extended school days or block scheduling (Berger, 2013). Although tutoring opportunities were mentioned in twelve of the nineteen references, according to Locke (2014), some of the students were unable to take advantage of the tutoring sessions due to responsibilities outside of school (Locke, 2014).

College information sessions were mentioned in seven of the nineteen references. College information sessions ranged from providing information to students about various colleges to aiding students in filling out financial aide and college applications (Berger et al, 2010; Berger, 2016; Edmunds et al, 2010; Haxton et al, 2016; Pierson, Hodara, & Luke, 2017; U.S. Department of Education, 2017; Venezia & Jaeger, 2013).

Advisories, which typically focused on college-going skills (Berger, 2010), were mentioned in five of the nineteen references and were the least referenced support within the references reviewed. Advisories were sometimes offered for credit and supported students in study skills, note-taking, and organization (Berger, 2014), while some advisories were not offered for credit and met only once a week (Berger 2010).

Finally, small school supports were mentioned in eleven of the nineteen references. Small school supports referred primarily to the personalization that can occur in environments where all students are known well by most of their instructors, and personal relationships are built between both teacher and pupil, and peers (Edmunds et al, 2010). Most ECHSs do follow the small school model which, according to Edmunds et al, (2010) follow five core design principles: purposeful design, professionalism,

personalization, college readiness, and powerful teaching and learning (Edmunds et al, 2010). Table 5 indicates an overview of the support services offered by ECs.

Table 5

Summary of Supports

Citation	Tutoring or academic support classes	College information sessions	Advisories	Small school supports*
1	X	X	X	X
2	X	X	X	X
3	—	—	—	X
4	—	—	—	—
5	—	—	—	—
6	X	X	X	X
7	X	—	—	X
8	X	—	—	X
9	X	X	X	X
10	—	—	—	—
11	X	—	—	—
12	X	—	—	—
13	X	—	—	X
14	—	X	—	—
15	—	—	—	—
16	X	—	—	~~X~~
17	—	—	—	—
18	X	X	—	X
19	X	X	X	X
Total	12	7	5	11

*Small school supports include personal relationships built between pupils and teachers, and between peers.

Literature Review Results. I will discuss both positive and negative results as implied by the references in the literature review. The positive results were more apparent with larger studies, while negative results were more apparent through smaller studies and qualitative analysis.

Benefits. Table 6 summarizes the results of the ECHS schools. Out of the 19 articles reviewed, 16 suggested positive results for early college high schools and five suggested negative results.

The first benefit for the ECHS model was higher graduation rates. Of the 19 articles reviewed, 12 of them indicated higher graduation rates for treatment students in the early college high school student programs, compared to control students not enrolled in the ECHSs. According to Berger et al (2013), a 5% point increase in graduation rates occurred between ECHSs and non-ECHSs. Although 5% may not increase graduation rates to an acceptable level in the US, it is a substantial increase, and one that occurred across demographics (Berger, 2013).

The second benefit from ECHSs was higher college enrollment rates between treatment and control students in the ECHSs. According to the Community College Research Center (2012) students who enrolled in courses where students earned both high school and college credit simultaneously were 17% more likely to attend a two-year or four-year university after high school than were students not enrolled in dual credit courses (CCRC, 2012).

Table 6

Summary of Results

	Benefits of ECHSs						Drawbacks
Citations	*Higher graduation rates	*More likely to enroll in college	*More likely to graduate from college	*More college credits earned in HS	Access for rural students	Small school environment benefits	Rigor and/or unfreedoms
1	X			X			X
2	X	X	X				
3	X						
4	X	X	X				
5		X	X	X	X		
6	X	X					
7	X						
8	X	X	X				
9	X	X	X				
10					X		
11							X
12							X
13							X
14	X	X	X				
15						X	X
16						X	
17	X	X		X			
18	X	X	X	X			
19				X			
Total	11	9	7	5	2	2	5

* More likely in treatment group than control group

Not only were students more likely to enroll in college after high school if they attended an early college high school, but they were more likely to persist in completing a college degree. Again, according to the Community College Research Center (2012) as well as Berger et al. (2013), more students who attend ECHSs through high school will go on to earn a college degree, either two-year or four-year.

Another positive impact of the early college high school model can be found by analyzing the data of historically underserved students. The purpose of the original ECHS initiative was to develop programs to support college entry and success for students who do not traditionally attend college. These demographics included ethnic minorities, first-generation college students (FGCS)s, and low-income students. In the first year of the ECHS evaluation conducted by the American Institute of Research (AIR) and SRI International (SRI), the 22 schools under review had 80% ethnic minorities enrolled and 70% low-income students enrolled (Berger, 2013). After I reviewed the positive outcomes for students, such as higher graduation rates, college attendance, and college completion, I found that minority students and low-income students had increased outcomes in all three areas (Berger et al., 2010; Bernstein et al., 2014; CCRC, 2012; Edmunds et al., 2010; Edmunds et al., 2016; Haxton et al., 2016; Saenz & Combs, 2015; Schaelfer & Rivera, 2016; Venezia & Jaeger, 2013; Unlu et al., 2015). If early college high schools are able to increase graduation rates, college attendance, and college completion for minority students, low-income students and FGCS, the impact may be crucial in providing needed opportunities for these students to find success in college.

Finally, Career and Technical Education (CTE) students who took CTE classes as dual credit courses had a higher grade point average than students who did not take the CTE courses for college credit and were also more likely to enroll in a two-year college program after high school (CCRC, 2012).

Drawbacks. Table 6 not only describes the benefits of early college high schools but also the drawbacks. Even though the results from the empirical studies were predominantly positive, some areas in need of improvement were apparent. Locke et al (2014 & 2016) conducted qualitative studies with Latina students at a particular ECHS. The Latina students were not as successful as other students in the program and Locke et al (2014 & 2016) concluded that the Latina students were encountering barriers. According to a student in the program, providing students with ECHS opportunities "is like giving us a car only without the wheels" (Locke, 2011). These students had access to the ECHS benefits, but were not equipped with the abilities, background, or time to take advantage of the opportunities. Often the rigor of the college classes was much higher than the students were accustomed to, and the opportunities for help and support were offered at times that were unavailable to them. For example, many of these students worked part-time jobs in support of their families, or they cared for siblings after school. Tutoring sessions were often provided after school, but the students were unable to take advantage of these sessions because of outside responsibilities (Locke, 2014). The supports within the ECHSs were not adequate for all students to find success.

The literature review did not discuss the benefits of ECHSs on students with disabilities. The original intent of the ECHSs as outlined by the early college high school

initiative did not include providing opportunities for students with disabilities, which may explain why students with disabilities were not included in the studies.

Literature Review Summary

The literature review suggests that early college high schools increase (a) graduation rates, (b) college attendance, and (c) college completion for historically underserved students. Historically underserved students include ethnic minorities, low-income students, and first-generation college students. Building more opportunities for historically underserved students within our high school education system could begin to close graduation gaps, college attendance gaps, and college completion gaps between historically underserved students and students who are not underserved.

Even though early college high schools may provide opportunities for these students, improvements are needed in some areas. First, ECHSs do not always provide adequate supports for all students. Some students may have the opportunity to take college classes while still in high school, but may not have the academic background to be successful in those classes, or may not be able to access supports to help scaffold their skills and academic knowledge to the level needed for success in college classes. Further supports should be identified and utilized for all students to find success through ECHSs.

Second, the literature review suggests that ECHSs do increase graduation rates, college attendance rates, and college completion rates for historically underserved students, but some categories of students were not included in the studies. For example, students with disabilities were not included in the literature review studies. Some students do not have access to the benefits offered by ECHSs and this gap in the literature should be further explored.

After analyzing the literature available I found that supports were mentioned in many of the references, but the impact and benefit of those supports were not clearly discussed. Supports needed for historically underserved students to find success within ECHSs needs to be further examined. Even though the fourth point of the ECHSI framework references supports, discussion of these supports was varied in the literature available and often discussed as an opportunity offered to ECHS students, but not necessarily if the opportunity was utilized by students or if it was effective. Further exploration of the supports in ECHSs is necessary.

Theoretical Framework

The literature review, study design, and survey were guided by the original theoretical framework designed by the Early College High School Initiative (ECHSI). This initiative posited five basic premises of ECHSs and built the schools around the following goals: (a) providing historically underserved students with college going opportunities, (b) generating articulation agreements between high schools and college, (c) developing an academic program that meets the needs of the participants, (d) providing academic and social supports, and (e) creating partnerships.

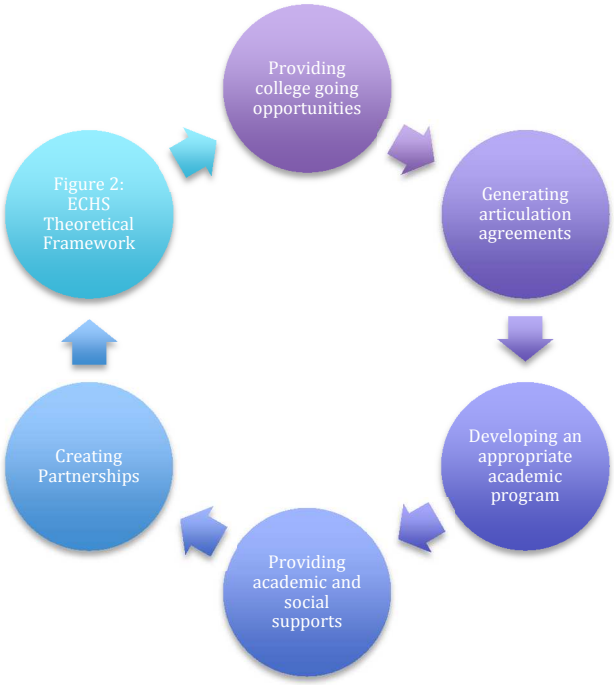

Figure 2: ECHS Theoretical Framework

Through the literature review, it is clear that ECHSs are providing opportunities for historically underserved students that are not be available in traditional high school settings (Berger et al., 2010; Bernstein et al., 2014; CCRC, 2012; Edmunds et al., 2010; Edmunds et al., 2016; Haxton et al., 2016; Saenz & Combs, 2015; Schaelfer & Rivera, 2016; Venezia & Jaeger, 2013; Unlu et al., 2015). Articulation agreements are occurring in the current ECHSs between colleges and high schools, thus creating appropriate partnerships (Berger, 2010), and the academic programs are meeting the needs of many of these students by providing them with an opportunity to complete high school while also earning college credit (Berger, 2010). Almost all of the ECHSs offer supports, either academic or social, for the early college students (Berger, 2010). Through the available literature, discussion of the five elements of the theoretical framework are provided.

The area of the literature that is not clearly addressed concerns the supports and scaffolds necessary for ECHS students to find success in the ECHSs (Locke, 2014; Locke

2016; Ongaga, 2010, Saenz & Combs, 2015). Even though the theoretical framework of ECHSs discusses the provision of academic and social supports for historically underserved students, the literature has not clearly delineated which supports are most beneficial. According to Berger et al (2010), schools offer wide-ranging supports for students from college skill classes to tutoring. Sometimes these supports are required of students within the ECHS and sometimes they are not; the impact these supports have is diverse and at times, difficult to evaluate. Because the gap in knowledge concerning supports exists within the theoretical framework, this study will examine the following Research Questions:

1. What types of early college students: (a) male, female; (b) second language speakers; (c) first-generation college students; (d) first, second, or third year students; (e) or tenth, eleventh or twelfth graders access the various supports through the ECHS?
2. How often do students access the various supports available?
3. What supports do the different types of early college students find most helpful?
4. What supports do the different types of early college students find most important?
5. What aspects of the early college program do the different types of early college students find most challenging?
6. How do early college students think supports in the early college program can be improved?

CHAPTER II

METHOD

To answer the Research Questions, two surveys were administered to students in the ECHS at MEWA, one to current students within the program, and one to students who are recent graduates of the program. Both surveys addressed the question of supports – what supports were in place to help the students succeed in the ECHS and what supports should have been added to help students have further success within the ECHS?

Research Design

For this research study, I utilized a mixed methods approach (Creswell, 2014, p. 220) with a non-randomized, semi-self-selected group of students in the early college high school student (ECHS) program at the Metro East Web Academy (MEWA) in Gresham, Oregon. The design followed a convergent parallel mixed methods design, which involved surveys delivered to two groups of students. This quantitative survey with five open-ended qualitative questions was administered to all students in the current ECHS program and to the 2017 or 2016 graduates of the ECHS for whom I had email information. The unit of analysis was individual students, which according to Babbie (2013) is the most typical unit of analysis in social science research, but does present some limitations. Because this was a set group of students with distinct characteristics (the first group were current members of the ECHS program at MEWA, and the second group were former members of the ECHS program at MEWA), the findings may not be generalizable (Babbie, 2013). Both surveyed groups of students were members of a specific group – the early college high school student in Gresham, Oregon – and

therefore may not have the same characteristics of students in other schools or even in other early college programs elsewhere in the state or country.

I conducted a cross-sectional study of the early college students (Dillman, 2014, p. 455). Data from the current ECHS students was collected at one point in time through the surveys, and provided a snapshot of the current students in the ECHS program. A cross-sectional study does pose limitations. Because it is a snapshot of students taken at one point in time, conclusions will be drawn based on that particular moment, which may not be the same conclusions drawn at a different moment (Babbie, 2013). For example, students surveyed in the beginning stages of the ECHS program may have offered different feedback than students surveyed a full year or two into the program.

Data was also collected at one point in time through the second survey, which was delivered to graduates of the ECHS program at MEWA. Again, because this is a snapshot of students who have recently graduated from the program, conclusions will be drawn based on that particular moment (Babbie, 2013). Given more time to reflect, students may have offered different information were the survey to be given many years after they attended the ECHS rather than half a year or a year after attendance.

Population

The Metro East Web Academy (MEWA) is a small charter school located in Gresham, Oregon and currently has 514 students enrolled in the school. MEWA is an online charter school and even though the school does have a physical facility, many of the students attend classes purely online. The students in the early college attend their classes primarily in person at Mt. Hood Community College, although some of the students will take some online classes. The general MEWA high school program has 455

students, with 32 GED students, 119 early college students, and 304 students in the regular high school program. MEWA also has 42 students in the middle school program, which is a grade seven and eight program. During the 2017-2018 school year, an elementary program was added, which currently contains 17 students.

The cohort survey was administered to all 119 students in MEWA's early college program and to 49 graduates of the ECHS. The current population of the early college students at MEWA is 92% white, 6% Hispanic, 1% multi-racial, and 1% Asian. The early college students are 56% female, 44% male, 41% first-generation college students, 42% second language speakers, 18% tenth graders, 43% eleventh graders, and 39% twelfth graders. Although the majority of the population falls under the white ethnic designation, the diversity of the students is broader than may first appear. 42% of the students are second language speakers; the main languages spoken at home are Russian, Ukraine, and Romanian, and 41% of the students qualify for TRIO, a program that supports low income, second language, and first-generation college students. The survey information will help us further disaggregate second language data (U.S. Department, 2018). In comparison to the city of Gresham, the area in which our high school sampling is drawn, some similarities and some differences are apparent as illustrated in Table 7.

Table 7

Population Comparison

	Early College population at MEWA	Overall student population at MEWA	Gresham-Barlow School District
Total Population	119	514	11,954
Low income	41%	29%	43%
White	92%	75%	63%
Second language	42%	21%	21%
Male	44%	42%	50.6%
Female	56%	58%	49.4%

After reviewing the comparison data, I discovered that a higher percentage of females attended the early college program at MEWA as compared to the Gresham-Barlow School District (GBSD), although the male and female percentages were very similar between the online program and the early college program. Also, a higher percentage of second language speakers were in the program as compared to the school district as well. 41% of the students in the early college program are low-income students while only 29% of the general MEWA population are considered low income, and 43% of the students in the district are low-income students. Also, 92% of the students in the ECHS fall under the ethnic designation of white, 75% of the regular MEWA high school students fall under the designation of white, and 63% of the students in GBSD fall under this designation. Because of the disparity in demographics between the early college program and the school district, the results may not be generalizable to the Gresham Barlow School District or outlying areas.

Data Sources

A single-stage procedure was utilized with the ECHS students at MEWA for both of the surveys. Because I was an administrator and teacher within the ECHS program, I had contact information for students in the program and was able to deliver the survey through email, both in class and through distance (Creswell, 2014). Before the administration of the survey occurred, an emailed letter was sent to all students in the program explaining the reason for and importance of the survey. "Using multiple modes provides additional opportunities to inform respondents of the benefits of responding, communicate how costs are being minimized, and build trust" (Dillman, 2014, p. 47). This initial email was sent five days before the actual questionnaire to build trust and to establish the official nature of the survey.

A sampling procedure was not necessary; only 119 students are in the current program and all 119 students provided email and phone numbers as contact information. Delivering the survey to all students was feasible and the results may be more conclusive than sampling only a small group of those 119 students. The population was a convenience sample because I delivered the survey to the students within the program where I work and some students self-selected to either not participate by not responding to the email, or declining to fill out the survey.

The second survey also used a single-stage procedure. Somewhat limited contact information for graduates of the ECHS was collected and available. The survey was delivered through email and again, the population consisted of a convenience sample

because the survey was delivered to students for whom we had contact information. Some of the students were 2017 graduates and some were 2016 graduates.

Qualitative analysis of the open-ended survey questions on both surveys was conducted through Excel. Similar answers were coded and used to further understand the quantitative survey responses. Only five open-ended survey questions were used and many of the respondents did not answer the open-ended survey questions or answered only some of them.

Instrument

Both survey instruments used to collect the data were specifically designed for the students in MEWA's early college program and for the students who had graduated from MEWA's early college program. I used Qualtrics to administer both surveys and the link was embedded in an email that was sent to each of the students in the early college program and to each graduate of the early college program for whom contact information was available. Qualtrics allowed for the use of new mobile devices as well as small screens, which many of the students in the early college employed. Dillman et al. (2014) implied that special challenges may occur if surveys are delivered on smaller screens and as I developed the Qualtrics survey, I did adjust some of the survey questions for small screen and smaller device accessibility. When I delivered the survey to the class of early college students, many of them did access the survey on their phones rather than on a laptop or desktop computer.

The survey instrument itself included an introductory explanation of the survey purpose and confidentiality protocols, and thirty-six total questions. Nine items involved demographics such as gender, number of years in the program, and second language

status. Three items concerned how often the various supports were accessed. Six items, both categorical and open-ended, asked about the helpfulness of supports within the program. Six categorical items addressed the question of which supports are most helpful and one-open ended question addressed this question. One-open ended question addressed the challenges of the early college program, and the final three open-ended questions addressed how the program could be improved. Table 8 indicates how many questions on the survey addressed the respective Research Questions.

Table 8

Number of Survey Questions Per Research Question

	Categorical Scales	Open-ended
RQ #1: Types of Students	9	0
RQ #2: How often do students access supports	3	0
RQ #3: What supports are most helpful	6	0
RQ #4: Supports found most important	6	1
RQ#5: What aspects of the ECHS do students find most challenging?	0	1
RQ #6: How can ECHS supports be improved?	0	3

In order to establish validity and accuracy for the survey instrument that I developed myself, I took the following steps. First, I met with the early college counselor to discuss and evaluate the items on the survey to verify that they answered the study's Research Questions. Second, I walked through the survey questions with my dissertation advisor to ascertain appropriateness of wording and questions. Third, as recommended by

Dillman et al. (2014), I conducted cognitive interviews with two students of similar age, but not part of the ECHS cohort. During cognitive interviews, students explained their thought processes while taking the survey and expressed confusion about the questions. Next, I sent the survey to three colleagues who worked through the questions and one of them met with me to clarify and hone the language of the questions. Fourth, I revised the survey based on the feedback from the cognitive interviews, through discussion with the early college counselor, and through discussion with my colleagues. Finally, I also asked the students who reviewed the survey to do so on different devices. As again recommended by Dillman et al., (2014), testing the survey on a variety of devices could help prevent delivery issues.

Analysis

A descriptive analysis of the survey data was conducted through SPSS, as was Chi Square analysis and analysis of variance where appropriate. The analyses were conducted in phases. Quantitative analyses were undertaken first. Then the qualitative data were analyzed in an attempt to explain and interpret the quantitative findings. To disaggregate the quantitative survey data, descriptive statistics were used to identify the characteristics of the population.

I used both quantitative and qualitative methods due to the strength in this approach. As discussed in Creswell (2014) the triangulation of both data sources help explain the other, thus providing a more thorough and comprehensive analysis of the data (Creswell, 2014). A detailed description of the setting has also been provided for results that are rich and realistic (Creswell, 2014).

I took the raw data from the Qualtrics survey and organized the data into an Excel spreadsheet for coding and analysis. I read through the data multiple times and then coded it by hand color-coding to indicate responses with similar themes. Themes did emerge through this process and the interpretation of these themes will be discussed in the qualitative results section.

CHAPTER III

RESULTS

To evaluate the results of the two surveys delivered to both the current ECHS students and the graduates of the ECHS, descriptive statistics were analyzed and, to fully understand the access of supports by demographic groups, both Chi-Square analyses and Analysis of Variance were conducted. Follow-up pairwise comparisons were also conducted as was qualitative analysis of open-ended responses.

Response Data

The response rate for the survey delivered to graduates of the early college program was 18% and the response rate for the current students of the early college program was 47%. Descriptive statistics, Chi-Square analysis, and analysis of variance were run on the current early college high school survey results, and both descriptive and Chi-Square analyses were run on the graduate survey.

I received a total of 10 survey responses from the graduates of the early college program. Of those 10 responses, one was eliminated from the analytical sample because the respondent did not give consent to complete the survey. The final nine respondents completed the survey, but not all of them answered every question on the survey, and qualitative responses were very limited. Of the survey delivered to the current early college students, 59 responses were recorded. One was not included because the respondent attempted to complete the survey after the closing date, and two were not included because the respondents did not give consent to complete the survey. The other

56 responses were analyzed, although not all respondents completed every question on the survey.

Demographic Characteristics of the Samples

Prior to answering the Research Questions, the data were examined descriptively. Despite low response rates, the demographic representation of the survey respondents was relatively similar to the ECHS overall population in terms of gender, language status, parental degree attainment, race and ethnicity, and years in the ECHS programs. Table 9 presents demographic representation for each survey sample as compared to the current total ECHS population.

Regarding parental degree attainment, students and graduates were originally asked what the highest degree attained by a parent was from seven options ranging from less than high school up to doctorate (see Appendix A, Q32 for exact wording). Because some options were chosen very infrequently (see Table 10) and it was unclear how students interpreted the category *professional degree*, responses were collapsed into two categories: degree attained, which included any sort of degree, and no parent degree attained, which included parents who had less than a high school degree, high school graduate, and some college. Again, this was a close representation of all current early college students in the program. Upon applying to Mt. Hood Community College (MHCC), students are placed into a program called TRIO if they qualify as first-generation college students, low income, or second language speakers and this information is shared with the ECHS counselor. As indicated in our school records from MHCC, 41% of the current ECHS students qualify for TRIO, and 48% of the current ECHS survey respondents have parents who have not earned a degree (see Table 9).

Table 9

Number (and Percentage) of Respondents and Total by Demographic Characteristic

Demographic characteristic	Current students	Graduates	ECHS overall
N	56	9	119
Gender			
Female	34 (61%)	5 (56%)	67 (56%)
Male	22 (39%)	3 (33%)	52 (44%)
Non-binary	0 (0%)	1 (11%)	0 (0%)
Language status			
Second language	22 (39%)	4 (44%)	50 (42%)
Non Second Language	34 (61%)	5 (56%)	69 (58%)
Parent degree			
No parent degree	27 (48%)	4 (44%)	46 (39%)
Parent degree	29 (52%)	5 (56%)	73 (61%)
Race/Ethnicity			
White/Caucasian	51 (91%)	8 (89%)	110 (92%)
Multiracial	4 (7%)	1 (11%)	1 (1%)
Hispanic	0 (0%)	0 (0%)	7 (6%)
Other	1(2%)	0 (0%)	2 (1%)
Years in ECHS program			
One	41 (73%)	2 (22%)	77 (65%)
Two	13 (23%)	6 (67%)	33 (28%)
Three	2 (4%)	1 (11%)	9 (8%)

The differences encountered in the demographic group, years in the program, may involve response bias since two third-year students responded to the survey.

Note that ECHS students predominantly identify as white or Caucasian, and this was true of both respondent groups, in which about 90% of respondents identified as white or Caucasian. Because the vast majority of respondents were from the same ethnic group, the survey response questions on second language speakers was used to analyze diversity rather than the survey response questions based on race.

Beyond the demographic characteristics that were common across samples, grade and age were also reported. Of the nine graduate respondents, 56% were 18 years old, 33% were 19 years old, and 11% were 20. Of the 56 current student respondents, 21% were in tenth grade, 50% in eleventh, and 29% in twelfth, as compared to the overall ECHS student population where percentages were 17%, 44%, and 37%, respectively.

Table 10

Number of Responses for Parental Degree Attainment

	Current ECHS students	Graduate ECHS students
Less than high school	1 (2%)	1 (11%)
High school graduate	17 (30%)	1 (11%)
Some college	9 (16%)	2 (22%)
2 year degree	5 (9%)	1 (11%)
4 year degree	17 (30%)	1 (11%)
Professional degree	5 (9%)	3 (33%)
Doctorate	2 (4%)	0 (0%)

The number of current ECHS survey respondents did represent the overall ethnic make-up of the early college students; 92% of the students in the early college are white and 91% of the survey respondents, or 51 out of 56 also indicated that they were white. Of the students who responded to the graduate survey, eight chose the ethnic designation of Caucasian, or 88% of the survey respondents.

Quantitative Results

Research Question 1. Chi square analyses were used to determine whether current students accessed ECHS supports differentially by demographic characteristics. Because only nine students responded to the graduate survey, these analyses were not replicated with the graduate sample. Nonetheless, descriptive results are reported for the graduate sample where appropriate.

Gender. Part one of this Research Question examined if accessing various supports differed by gender. A series of Chi-Square analyses were conducted and the percentage of students who accessed the various supports did not differ by gender, and none of the results were statistically significant. Although a slightly larger percentage of female students (65%) accessed the tutoring center than did males (59%), χ^2 (1, N = 56) = .180, p = .672, this difference was not statistically significant. A higher percentage of male students (91%) took HD 100 than female students (76%), χ^2 (1, N = 56) = 1.898, p = .168, but this difference was also not statistically significant. The difference between gender of those who attended college information sessions and those who did not indicated that a higher percentage of males (78%) attended information sessions than did females (62%) , χ^2 (1, N = 56) = 2.541, p = .111, but this difference was again not

statistically significant. To summarize, in this study, gender was not a significant predictor of access to ECHS supports.

Table 11

Access by Gender to Tutoring Center, HD 100, College Information Sessions

Support	Female (n = 34)	Male (n = 22)
Access tutoring center	22 (65%)	13 (59%)
Took HD 100	26 (76%)	20 (91%)
Attended college information sessions	21 (62%)	18 (78%)

Note. Chi-square test results were not statistically significant.

Second Language Speakers. The second part of Research Question 1 examined if accessing various supports differed by second language speaker status. Differences were visually noted, although none of the differences were statistically significant. According to Table 12 a larger percentage of current ECHS second language speakers (77%) accessed the tutoring center than did non-second language speakers (53%), χ^2 (1, N = 56) = 3.374, p = .066, although this difference was not statistically significant. Four of the second language speakers accessed the tutoring center once a week and one accessed the tutoring center every day. Most students in the early college program did not attend the tutoring center each day; only five out of 22 or 23% of second language speakers accessed the tutoring center every day or every week and only three out of 34 or 9% of non-second language speakers accessed the tutoring center every day or every week. A lower percentage of second language speakers (73%) took HD 100 than non-second language speakers (88%), χ^2 (1, N = 56) = 2.190, p = .139, but this difference was also

not statistically significant. The difference between second language speakers and non-second language speakers of those who attended college information sessions and those who did not indicated that a higher percentage of second language speakers (73%) attended college information sessions than did non-second language speakers (67%), χ^2 (1, N = 56) = .163, p = .686, although this difference was again not statistically significant. The same percentage of second language speakers (73%) took HD 100 as attended college information sessions. To summarize, second language speaker status was not a significant predictor to access of supports.

Table 12

Second Language Speakers Accessing Tutoring Center, HD 100, or College Info Sessions

	Second language speaker (n = 22)	Non-second language speaker (n = 34)
Go to tutoring center	17 (77%)	18 (53%)
Took HD 100	16 (73%)	30 (88%)
Attended college information sessions	16 (73%)	23 (67%)

Note. Chi-square test results were not statistically significant.

Parent degree attained. The third part of Research Question 1 examined if accessing various supports differed by parent degree attainment. According to Table 13, differences did exist, although none of the differences were statistically significant. A larger percentage (74%) of non-degree respondents accessed the tutoring center than did those whose parents had attained a degree (52%), χ^2 (1, N = 56) = 2.98, p = .084, but this difference was not statistically significant. A lower percentage of non-degree respondents (78%) took HD 100 than those whose parents attained a degree (86%) , χ^2 (1, N = 56) =

.677, $p = .411$, although this difference was also not statistically significant. The difference between respondents with parents who attained a degree and those who did not implied that a higher percentage of those who attained a degree (72%) attended college information sessions than did those who did not attain a degree (67%), χ^2 (1, $N = 56$) = .218, $p = .640$, although this difference was again not statistically significant. College degree attainment was not a significant predictor to access of supports.

The percentage of students whose parents had earned a degree and those who had not and access of the supports in the early college program was not statistically significant, although it is worthy to note that students whose parents did not earn a degree accessed the tutoring center more frequently than those whose parents had earned a degree. Five of the students whose parents had not earned a degree or 19%, accessed the tutoring center regularly, such as once a week or once a day. In contrast, three, or 10%, of the early college students whose parents had earned a degree accessed the tutoring center every week or every day.

Table 13

Parent Degree Attainment Accessing Tutoring Center, HD 100, College Info Sessions

	Degree Attainment ($n = 29$)	Non-degree attainment ($n = 27$)
Go to tutoring center	15 (52%)	20 (74%)
Took HD 100	25 (86%)	21 (78%)
Attended college information sessions	21 (72%)	18 (67%)

Note. Chi-square test results were not statistically significant.

Grade level. The fourth part of Research Question 1 examined if accessing various supports differed by grade level. A series of chi-square analyses were conducted and the percentage of students who accessed the various supports is noted, but none of the differences were statistically significant. According to the survey data for grade level, more tenth graders accessed the tutoring center (83%) than eleventh or twelfth graders, χ^2 (1, N = 56) = 2.98, p = .084, and more tenth graders also attended college information sessions (83%), χ^2 (1, N = 56) = 2.464, p = .292, but neither of these differences were statistically significant. In contrast, more twelfth graders took HD 100 than tenth or eleventh graders, χ^2 (1, N = 56) = 3.429, p = .180, although this difference was also not statistically significant. Even though the percentages were not statistically significant, it is worthy to note that access of the tutoring center went down per grade level, attending college information sessions went down per grade level, but enrolling in HD 100 went up per grade level. It is also relevant to note that even when students accessed the tutoring center, most were not accessing the tutoring center more than once a month. Only eight of the 56 students (14%), regardless of grade level, accessed the tutoring center each week or every day, while 86% of the students accessed the tutoring center infrequently such as once a month, once a term, or once a year.

Table 14

Grade levels Accessing Tutoring Center, HD 100, College Information Sessions

	Tenth grade (n = 12)	Eleventh grade (n = 28)	Twelfth grade (n = 16)
Go to tutoring center	10 (83%)	16 (57%)	9 (56%)
Took HD 100	8 (67%)	23 (82%)	15 (94%)
Attended college information sessions	10 (83%)	20 (71%)	9 (56%)

Note. Chi-square test results were not statistically significant.

Years in the early college program. The final part of Research Question 1 examined if accessing various supports differed by number of years in the early college program. A series of Chi-Square analyses were conducted and the percentage of students who accessed the various supports per years in the program was not statistically significant. According to the current ECHS survey results regarding number of years in the early college program, a higher percentage of students in their second and third year of the program accessed the tutoring center (77% of second years and 100% of third years), χ^2 (2, N = 56) = 3.071, p = .215, but this difference was not statistically significant. Also, a higher percentage of students in their second and third year of the program had taken HD 100 (100% of second years and 100% of third years), χ^2 (2, N = 56) = 4.454, p = .108, although this difference was also not statistically significant. In contrast fewer second year students attended college information sessions than first year or third year students, χ^2 (2, N = 56) = 1.299, p = .522, although this difference was again not statistically significant. Even though only two students were in their third year of the early college program, both of these students (100%) went to the tutoring center, took HD 100, and attended college information sessions.

Table 15

Years in Program Accessing tutoring Center, HD 100, College information Sessions

	One (n = 41)	Two (n = 13)	Three (n = 2)
Go to tutoring center	23 (56%)	10 (77%)	2 (100%)
Took HD 100	31 (76%)	13 (100%)	2 (100%)
Attended college information sessions	29 (71%)	8 (62%)	2 (100%)

Note. Chi-square test results were not statistically significant.

Research question 2. Table 16 shows how often the various demographic groups from the current early college high school survey respondents accessed the supports available to them through the early college program. The three supports examined were the tutoring center, HD 100, and college information sessions, although access by the following demographics was not statistically significant. Access to the supports by gender suggests that students of different genders access the tutoring center, took HD 100, and attended the college information sessions at fairly similar rates, χ^2 (5, N = 56) = 6.017 , p = .305, χ^2 (1, N = 56) = 1.898 , p = .168, χ^2 (1, N = 56) = 2.541 , p = .111, respectively, although these differences were not statistically significant. Access to the supports by second language status implies that both second language speakers (73%) and non-second language speakers (78%) took HD 100, and attended college information sessions at fairly similar rates, χ^2 (5, N = 56) = 9.259 , p = .099, χ^2 (1, N = 56) = 2.190 , p = .139, χ^2 (1, N = 56) = .163 , p = .686, respectively. Access to the tutoring center insinuated that more students access the tutoring center and took HD 100 whose parents do not have a degree, χ^2 (1, N = 56) = 2.980 , p = .084, χ^2 (1, N = 56) = .677, p = .411, respectively. Students whose parents had not earned a degree (67/%) were as likely to

have attended college information as their peers whose parents had earned degrees (73%), χ^2 (1, N = 56) = .218, p = .640. Access to the tutoring center by grade implied that more tenth graders (83%) accessed the tutoring center than eleventh (57%) or twelfth graders (56%), χ^2 (2, N = 56) = 2.832 , p = .243, they were less likely to have taken HD 100 or attended college information sessions than eleventh or twelfth graders, χ^2 (2, N = 56) = 3.429 , p = .180, χ^2 (2, N = 56) = 2.464 , p = .292, respectively.

Access to the tutoring center by years in the program was statistically significant, χ^2 (10, N = 56) = 40.134, p = .000, which suggests that students who have been in the program for more years are more likely to access the tutoring center on a regular basis. Students who have been in the program longer are also more likely to have taken HD 100 and attended college information sessions, although this was not statistically significant, χ^2 (2, N = 56) = 4.454 , p = .108, χ^2 (2, N = 56) = 1.299 , p = .522, respectively.

According to Table 16, 40% or more of the males, non-second language speakers, students with parents who have degrees, eleventh graders, twelfth graders, and first year students in the program have never accessed the tutoring center. In contrast, tenth graders, third year students, students whose parents have no degree, and second language speakers made regular use of the tutoring center, which was defined as once a week or once a month. More than half of all demographic groups did take HD 100, or the advisory class. More than 70% of the students in all demographic categories have either not attended a college information session, or have only attended one college information session, except for the third year students who have attended two or more college information sessions.

Table 16

Access of Supports by Demographic Characteristic

	Tutoring center				HD 100	College information sessions			
	Never	Rarely (couple times a term)	Regularly (every month or week)	Often (every day)		None	One	Two to four	Five or more
Female	35%	24%	39%	3%	76%	38%	38%	15%	9%
Male	41%	36%	23%	0%	91%	18%	59%	18%	5%
Second language	23%	23%	50%	5%	73%	27%	46%	23%	5%
Non-second language	47%	33%	21%	5%	88%	23%	47%	12%	9%
No parent degree	26%	30%	45%	0%	78%	33%	41%	19%	7%
Parent degree	48%	28%	21%	3%	86%	27%	52%	14%	7%
Tenth	17%	41%	42%	0%	67%	17%	58%	25%	0%
Eleventh	43%	25%	32%	0%	82%	29%	50%	13%	7%
Twelfth	44%	25%	25%	6%	94%	44%	31%	13%	13%
One	44%	22%	34%	0%	76%	29%	51%	15%	5%
Two	23%	54%	23%	0%	100%	39%	39%	15%	8%
Three	0%	0%	50%	50%	100%	0%	0%	50%	50%

Because only nine students responded to the survey for the graduates of the early college program, the information gathered from these students was very limited in scope and may not be representative of the early college graduates in general. Breaking the nine

students down into the various demographic categories placed only a handful of students into each one; thus, these students were examined as a whole. Of the nine students who responded to the survey, five never accessed the tutoring center, while two accessed the tutoring center every week. Six of the students took the HD 100 class, while three did not, and five students stated that they did not remember attending any college information sessions, while one indicated that he or she had attended five or more.

***Research question* 3.** An analysis of variance was conducted to evaluate the helpfulness of academic supports based on demographic groups. The mean ranking of the eight supports by various demographic groups are shown in Table 17. Most demographic groups did not rank supports statistically significantly different, but a few of the demographic groups did imply statistical significance, although the cell sizes are very small. Tenth graders valued the academic support of friends more highly than did either eleventh or twelfth graders, $F(2,53) = 3.877$, $p = .027$, and twelfth graders valued the counselor as an academic support more highly than did tenth or eleventh graders, $F(2, 53) = 3.1856$, $p = .049$. Follow-up pairwise comparisons were conducted using Sidak adjustment for multiple comparisons. This revealed a medium effect of grade size $F(2, 53) = 3.877$, $p = .023$, $\eta_p^2 = .128$ such that tenth graders valued friends more highly than twelfth graders as an academic support. A medium effect size was also noted for twelfth graders valuing the academic support of counselors statistically higher than eleventh graders, $F(2, 53) = 3.186$, $p = .049$, $\eta_p^2 = .107$. Males rated the programs AVID or TRIO as stronger academic supports than did females, $F(1, 54) = 4.413$, $p = .047$.

Table 17

Mean Helpfulness of Academic Supports by Demographic Group

Group	*N*	Family	Friends	Counselor	Teachers	HD 100	Tutoring center	Outside tutoring	AVID/TRIO
Grade									
Tenth	12	1.58	1.58	2.17	1.92	2.25	2.00	3.08	2.83
Eleventh	28	2.21	2.11	2.36	2.18	2.79	2.64	3.43	3.61
Twelfth	16	2.00	2.63	1.63	2.06	2.38	2.38	3.38	3.31
F(2, 53)		1.79	3.88**	3.19**	0.34	1.28	1.34	0.49	2.25
Gender									
Male	22	2.09	2.14	2.14	2.09	2.50	2.55	3.27	3.00
Female	34	1.97	2.15	2.09	2.09	2.59	2.35	3.38	3.59
F(1, 54)		0.20	0.00	0.03	0.00	.08	0.37	.15	4.41**
Second language									
Yes	22	1.77	1.86	2.27	2.00	2.36	2.05	2.95	2.86
No	34	2.18	2.32	2.00	2.15	2.68	2.68	3.59	3.68
F(1, 54)		2.18	2.83	0.99	0.29	1.31	5.14	5.36	8.83
Parental degree attainment									
Yes	29	2.03	2.31	1.90	2.10	2.69	2.69	3.66	3.79
No	27	2.00	1.96	2.33	2.07	2.41	2.15	3.00	2.89
F(1, 54)		0.02	1.59	2.96	0.01	0.90	3.18	6.41**	11.56**
Years in program									
One	41	2.00	2.05	2.27	2.10	2.59	2.49	3.37	3.46
Two	13	2.23	2.62	1.77	2.23	2.69	2.46	3.62	3.38
Three	2	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
F(2, 53)		1.41	2.94	2.86	1.59	2.16	1.62	7.11***	5.76***

Note. Means are for helpfulness on a scale of 1-4, where one indicates very helpful, two indicates helpful, three indicates somewhat helpful, and four indicates not very helpful.
*$p < .05$. ** $p < .01$. *** $p < .001$.

Second language speakers ranked the programs AVID and TRIO higher than non-second language speakers, and this difference was statistically significant, $F(1, 54) = 6.566$, $p = .002$. Also, students whose parents had not attained a degree ranked outside tutoring, as well as the programs AVID and TRIO more helpful as academic supports than students whose parents had attained a degree, $F(1, 54) = 6.411$, $p = .014$, $F(1, 54) = 11.555$, $p = .001$ respectively.

Finally, students who had been in the program three years ranked outside tutoring as a more helpful academic support than students who had been in the program one or two years, $F(2, 53) = 7.111$, $p = .002$. A follow-up pairwise comparison was conducted which revealed a large effect size for the importance of outside tutoring and students who had been in the program more years. Students who had been in the program three years, ranked outside tutoring as a far more important academic support than fist year students, $F(2, 53) = 7.111$, $p = .002$, $\eta_p^2 = .212$ and second year students, $F(2, 53) = 7.111$, $p = .001$, $\eta_p^2 = .212$. Even though this revealed a statistically significant difference, only two students who had been in the program for three years responded to the survey, which implied that type 1 error may have occurred due to low response rates. Students who had been in the program for three years ranked programs such as AVID and TRIO more helpful as an academic support than students who had been in the program for a year or two years, $F(2,53) = 5.764$, $p = .005$. Again, follow-up pairwise comparisons were conducted using Sidak adjustment for multiple comparisons. This revealed a large effect size for more years in the program and the importance of AVID and TRIO. Students who had been in the program three years, ranked programs such as AVID and TRIO as more

important academic support than fist year students, F (2, 53) = 5.763, p = .004, η_p^2 = .179 and second year students, F (2, 53) = 5.763, p = .008, η_p^2 = .179. Even though this revealed a statistically significant difference, only two students who had been in the program for three years responded to the survey, which implied that a type 1 error may have occurred due to low response rates.

Table 18

Academic Support Helpfulness by Respondent Group

	Current ECHS students		Graduates of the ECHS	
	N	*M*	*N*	*M*
Family	56	2.02	9	2.22
Friends	56	2.16	9	2.56
Counselor	55	2.09	9	2.44
Teachers	55	2.07	9	1.66
HD 100	55	2.53	8	2.75
Tutoring Center	55	2.42	8	2.75
Outside Tutoring	53	3.33	8	3.38
Programs such as AVID and TRIO	53	3.35	5	3.6

The overall rating of various supports as helpful for academic success was also calculated for graduates of the ECHS program. Because only nine of the graduates responded to the graduate survey, the mean statistics were calculated for the group overall rather than breaking them down into specific demographic groups. As shown in

Table 18, graduates of the early college high school indicated that the teachers were the most helpful academic support while the current early college students indicated that family was the most helpful academic support.

Social or moral supports found most helpful. An analysis of variance was conducted to evaluate the helpfulness of social supports based on demographics. The variable *helpfulness of social supports* again included all eight supports (see Table 19). Except for a few areas where statistical significance was noted, most demographic groups did not rank supports statistically significantly different. Second language speakers indicated that outside tutoring as well as the programs AVID and TRIO were more helpful as a social support than did non-second language speakers, $F(1,54) = 4.058$, $p = .022$, $F(1,54) = 6.762$, $p = .012$, respectively. Students whose parents had not attained a degree indicated that outside tutoring as well as the programs AVID and TRIO were more helpful as social supports than students whose parents had earned a degree, $F(1,54) = 5.592$, $p = .022$, $F12,54) = 7.599$, $p = .008$, respectively. And finally, students who had been in the program three years found the programs AVID and TRIO more helpful as social supports than students who had been in the program for one year, $F(2,53) = 9.220$, $p = .002$. Students who had been in the program three years, ranked programs such as AVID and TRIO as more important social or moral supports than first year and second year students, $F(2, 53) = 9.22$ $p = .000$, $\eta_p^2 = .258$, which revealed a large effect size.

Even though this revealed a statistically significant difference, only two students who had been in the program for three years responded to the survey, which implied that a type 1 error may have occurred due to low response rates. Students who had been in the program for three years found teachers to be a stronger social support than students who

had been in the program for only one year, $F(2,53) = 3.974$, $p = .025$. Again, follow-up pairwise comparisons were conducted using Sidak adjustment for multiple comparisons. This revealed a medium effect size for more years in the program and the importance of teachers as a moral or social support. Students who had been in the program three years, ranked teachers as a more important moral or social support than first year students, F (2, 53) = 3.974, $p = .025$, $\eta_p^2 = .130$. Even though this revealed a statistically significant difference, only two students who had been in the program for three years responded to the survey, which could indicate bias in response rates.

Table 19

Mean Helpfulness of Social Supports by Demographic Group

Group	*N*	Family	Friends	Counselor	Teachers	HD 100	Tutoring center	Outside tutoring	AVID/TRIO
Grade									
Tenth	12	1.17	1.33	2.17	2.58	2.25	2.92	3.33	3.17
Eleventh	28	1.64	1.64	2.25	2.79	2.61	3.00	3.54	3.68
Twelfth	16	1.38	1.88	1.69	2.13	2.25	2.94	3.50	3.56
$F(2, 53)$		1.32	1.05	1.92	1.93	0.62	0.02	0.15	1.18
Gender									
Male	22	1.55	1.68	2.00	2.45	2.41	3.05	3.36	3.27
Female	34	1.41	1.62	2.12	2.62	2.44	2.91	3.56	3.71
$F(1, 54)$		0.30	0.06	0.20	0.29	0.01	0.15	0.45	2.74
Second language									
Yes	22	1.27	1.36	2.05	2.68	2.32	2.73	3.14	3.14
No	34	1.59	1.82	2.09	2.47	2.50	3.12	3.71	3.79
$F(1, 54)$		1.69	3.05	0.03	0.49	0.31	1.31	4.06**	6.76**
Parental degree attainment									
Yes	29	1.38	1.69	1.93	2.38	2.45	3.17	3.79	3.86
No	27	1.56	1.59	2.22	2.74	2.41	2.74	3.15	3.19
$F(1, 54)$		0.54	0.14	1.32	1.54	0.02	1.69	5.59**	7.60**
Years in program									
One	41	1.41	1.54	2.20	2.76	2.46	2.98	3.56	3.61
Two	13	1.69	2.08	1.85	2.15	2.54	3.23	3.62	3.69
Three	2	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
$F(2, 53)$		0.75	2.02	2.06	3.97*	1.55	2.96	6.90	9.22**

Note. Means are for helpfulness on a scale of 1-4, where one indicates very helpful, two indicates helpful, three indicates somewhat helpful, and four indicates not very helpful. * $p < .05$. ** $p < .01$. *** $p < .001$.

For both survey respondent survey groups, current and graduate, family and friends were the most important social support groups.

Table 20

Social or Moral Helpfulness by Respondent Group

	Current ECHS students		Graduates of the ECHS	
	N	*M*	*N*	*M*
Family	55	1.45	9	1.77
Friends	55	1.64	9	1.77
Counselor	55	2.07	9	2.11
Teachers	53	2.55	9	2.00
HD 100	54	2.40	8	2.37
Tutoring Center	52	2.96	7	3.33
Outside Tutoring	50	3.47	6	3.67
Programs such as AVID and TRIO	50	3.53	5	3.60

College information supports found most helpful. An analysis of variance was conducted to evaluate the helpfulness of college information supports based on demographics. Demographic groups that indicated a statistically significant difference in mean ranking are included here. Males indicated that the programs AVID and TRIO were more helpful as college information supports than did females, $F(1,54) = 5.648$, $p = .021$.

Table 21

Mean helpfulness of college information supports by demographic group

Group	*N*	Family	Friends	Counselor	Teachers	HD 100	Tutoring center	Outside tutoring	AVID/TRIO
Grade									
10th	12	1.83	2.00	1.75	2.00	2.00	2.75	3.25	3.25
11th	28	2.14	2.61	1.89	2.29	2.36	3.11	3.71	3.68
12th	16	2.44	2.69	1.38	1.75	2.31	2.81	3.56	3.50
F(2, 53)		0.94	1.56	1.56	1.23	0.35	0.51	1.05	0.90
Gender									
Male	22	2.14	2.41	1.77	2.09	2.18	3.05	3.55	3.18
Female	34	2.18	2.56	1.68	2.06	2.32	2.88	3.59	3.76
F(1, 54)		0.02	0.23	0.14	0.01	0.68	0.24	0.23	5.65*
Second language									
Yes	22	2.05	1.86	1.73	1.91	2.14	2.64	3.23	3.18
No	34	2.24	2.91	1.71	2.18	2.35	3.15	3.79	3.26
F(1, 54)		0.36	14.32***	0.01	0.80	0.41	2.50	5.38*	5.65*
Parental degree attainment									
Yes	29	1.86	2.66	1.55	2.07	2.24	3.24	3.22	3.79
No	27	2.48	2.33	1.89	2.07	2.30	2.63	3.41	3.26
F(1,54)		4.25*	1.14	1.78	0.00	0.03	3.84	1.64	4.90*
Years in program									
One	41	2.07	2.41	1.68	2.10	2.24	2.90	3.61	3.61
Two	13	2.54	2.92	1.92	2.15	2.54	3.31	3.77	3.62
Three	2	1.50	1.50	1.00	1.00	1.00	1.50	1.50	1.50
F(2, 53)		1.14	1.86	0.90	1.01	0.26	1.37	2.17**	6.29**

Note. Means are for helpfulness on a scale of 1-4, where one indicates very helpful, two indicates helpful, three indicates somewhat helpful, and four indicates not very helpful.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Second language speakers proposed that three supports were more helpful than did non-second languages speakers: friends, $F(1,54) = 1.322$, $p = .000$, outside tutoring, $F(1,54) = 5.337$, $p = .025$, and AVID and TRIO, $F(1,54) = 5.648$, $p = .021$. Students whose parents had earned a degree implied that parents were more helpful as a college information support than did students whose parents did not have a degree, $F(1,54) = 4.248$, $p = .044$, while students whose parents did not have a degree found the programs AVID and TRIO as a more helpful college information support than students whose parents had a degree, $F(1,54) = 4.897$, $p = .031$. Finally, students who had been in the program three years, found outside tutoring as a more helpful college information support than students who had been in the program less than three years, $F(2,53) = 6.288$, $p = .004$. Follow-up pairwise comparisons were conducted using Sidak adjustment for multiple comparisons. This revealed a large effect size for more years in the program and the importance of outside tutoring as a college information support. Students who had been in the program three years ranked outside tutoring as a more important college information support than first year students, $F(2, 53) = 6.288$, $p = .004$, $\eta_p^2 = .192$, and second year students, $F(2, 53) = 6.288$, $p = .003$, $\eta_p^2 = .192$. Even though this revealed a statistically significant difference, only two students who had been in the program for three years responded to the survey, which implied that a type 1 error may have occurred due to low response rates. Students in the program for three years also found programs such as AVID and TRIO as more helpful college information supports than did students who had been in the program fewer years, $F(2,53) = 5.791$, $p = .005$. Follow-up pairwise comparisons were conducted using Sidak adjustment for multiple comparisons. This revealed a large effect size for more years in the program and the importance of programs

such as AVID and TRIO as college information supports. Students who had been in the program three years, ranked these supports as more important college information supports than first year students, $F(2, 53) = 5.791$, $p = .004$, $\eta_p^2 = .179$, and second year students, $F(2, 53) = 5.791$, $p = .006$, $\eta_p^2 = .179$. Even though this revealed a statistically significant difference, only two students who had been in the program for three years responded to the survey, which indicated very low response rates.

Table 22

College Information Helpfulness by Respondent Group

	Current ECHS students		Graduates	
	N	M	N	M
Family	55	2.18	9	2.78
Friends	55	2.49	8	2.75
Counselor	55	1.71	9	1.89
Teachers	55	2.05	9	1.89
HD 100	55	2.24	7	2.71
Tutoring Center	55	2.95	6	3.33
Outside Tutoring	55	3.56	6	3.67
Programs such as AVID and TRIO	55	3.53	5	3.6

When comparing the two survey response groups, again, similar themes did emerge. Both surveys indicated that graduates as well as current ECHS students find teachers and the counselor to be the most helpful college information supports.

Research question 4. Students ranked the importance of the eight academic, social, and college information supports to illustrate which supports were most important.

Table 23

Ranking of Support as Most Important by Demographic

	Family	Friends	Counselor	Teachers	HD 100	Tutoring	Tutoring outside	AVID and TRIO
Female	47%	6%	12%	18%	0%	3%	3%	0%
Male	55%	14%	9%	18%	0%	0%	0%	0%
2nd language	46%	9%	9%	18%	0%	0%	5%	0%
Non-second language	53%	9%	12%	18%	0%	3%	0%	0%
No parent degree	44%	11%	7%	15%	0%	4%	4%	0%
Parent degree	55%	7%	14%	21%	0%	0%	0%	0%
Tenth	42%	25%	0%	17%	0%	0%	0%	0%
Eleventh	61%	7%	7%	14%	0%	4%	4%	0%
Twelfth	38%	0%	25%	25%	0%	0%	0%	0%
One	51%	10%	7%	20%	0%	2%	2%	0%
Two	46%	8%	23%	15%	0%	0%	0%	0%
Three	50%	0%	0%	0%	0%	0%	0%	0%

According to the survey results, all demographics chose family most often as the most important support. Teachers were ranked as the second most important support except among tenth graders who chose friends, and second year students who chose counselor. The least important supports across all demographic groups were HD 100 and programs such as AVID and TRIO. As shown in Table 23, the percentage beside the

demographic shows how often that particular support was ranked as the most important support out of the eight possibilities.

An analysis of variance was conducted to evaluate the helpfulness of academic supports based on demographic groups. The mean ranking of the eight supports by various demographic groups is shown in Table 24. Except for two demographic groups, most did not rank supports statistically significantly different. Second language speakers ranked the programs AVID and TRIO higher than non-second language speakers, and this difference was statistically significant, $F(1, 49) = 6.566$, $p = .002$. Also, students whose parents had not attained a degree ranked the programs AVID and TRIO as more important than students whose parents had attained a degree and this difference was statistically significant, $F(1, 49) = 6.566$, $p = .014$. The ranking of supports by grade, gender, and years in program did not yield statistically significant differences.

Table 24

Ranking of Supports by Demographic Group

Respondents	*N*	Early college supports							
		Family	*Friends*	*Counselor*	*Teachers*	*HD 100*	*Tutoring center*	*Outside tutoring*	*AVID /TRIO*
Grade									
Tenth	12	2.20	2.50	3.40	2.60	5.00	5.60	7.30	7.40
Eleventh	28	1.70	3.26	3.44	3.41	5.19	4.93	6.26	7.81
Twelfth	16	2.29	4.29	2.29	2.79	4.64	4.93	6.93	7.86
F(2, 48)		1.12	4.26	3.65	1.43	0.84	0.71	2.69	2.22
Gender									
Male	22	1.95	3.19	3.00	3.05	4.76	5.57	6.76	7.71
Female	34	1.07	3.53	3.20	3.10	5.17	4.70	6.57	7.77
F(1, 49)		0.00	0.55	0.24	0.02	1.27	3.91	0.25	0.09
2nd language									
Yes	22	2.11	3.32	3.26	3.05	5.16	4.89	6.79	7.42
No	34	1.88	3.44	3.03	3.09	4.91	5.16	6.56	7.94
F(1, 49)		0.36	0.07	0.31	0.01	0.47	0.32	0.32	10.74**
Degree attainment									
Yes	29	1.79	3.54	2.96	3.30	4.96	5.29	6.75	7.93
No	27	2.17	3.22	3.30	2.89	5.17	4.78	6.52	7.52
F (1, 49)		1.11	0.49	0.72	0.94	0.79	1.27	0.35	6.57*
Years in program									
First	41	1.97	3.24	3.26	3.05	5.08	5.03	6.66	7.71
Second	13	2.00	4.00	2.50	3.08	4.67	5.33	6.58	7.83
Third	2	1.00	2.00	5.00	4.00	6.00	3.00	7.00	8.00
F(2, 48)		0.27	1.42	2.32	0.19	0.80	1.02	0.05	0.28

* $p < .05$. ** $p < .01$. *** $p < .001$.

Research question 5. Both the current early college students as well as graduates of the early college program were asked through the survey to rank four challenges along a continuum of not very challenging to challenging. The four challenges discussed included academics, time management, social relationships, and college preparation.

According to Table 25, none of the students in either group found the academics of the early college program to be very challenging, but 83% of the current early college students and 77% of the graduates found academics either a little bit challenging or challenging. In both groups of survey respondents, graduate and current, over 50% of the students stated that the social relationships in the early college program were not very challenging while less than 25% of both survey respondents, graduate and current, found academics not very challenging.

Table 25

Challenges of the Early College Program

	Not very challenging		A little bit challenging		Challenging		Very Challenging	
	Grad *n* = 9	Current *n* = 56	Grad *n* = 9	Current *n* = 56	Grad *n* = 9	Current *n* = 56	Grad *n* = 9	Current *n* = 56
Academic	2 (22%)	9 (12%)	5 (55%)	32 (59%)	2 (22%)	13 (24%)	0 (0%)	0 (0%)
Time Management	1 (11%)	6 (11%)	7 (78%)	22 (40%)	0 (0%)	24 (44%)	1 (11%)	3 (6%)
Social Relationship	5 (55%)	34 (63%)	2 (22%)	14 (26%)	2 (22%)	3 (6%)	0 (0%)	3 (6%)
College Prep	2 (22%)	23 (42%)	4 (44%)	24 (44%)	3 (33%)	6 (11%)	0 (0%)	2 (4%)

Table 26

Rating of Academic Challenges

	Not very challenging	A little bit challenging	Challenging	Very challenging
Grade				
Tenth	2 (16.7%)	7 (58.3%)	3 (25%)	0 (0%)
Eleventh	5 (18.5%)	15 (55.6%)	7 (25.9%)	0 (0%)
Twelfth	3 (18.8%)	10 (62.5%)	3 (18.8%)	0 (0%)
Gender				
Male	4 (18.2%)	14 (63.6%)	4 (18.2%)	0 (0%)
Female	6 (18.2%)	18 (54.5%)	9 (27.3%)	0 (0%)
2nd language				
Yes	3 (13.6%)	13 (59.1%)	6 (27.3%)	0 (0%)
No	7 (21.2%)	19 (57.6%)	7 (21.2%)	0 (0%)
Degree Attainment				
No	6 (23.1%)	15 (57.7%)	5 (19.2%)	0 (0%)
Yes	4 (13.8%)	17 (58.6%)	8 (27.6%)	0 (0%)
Years in program				
One	8 (19.5%)	25 (61%)	8 (19.5%)	0 (0%)
Two	2 (16.7%)	6 (50.0%)	4 (33.3%)	0 (0%)
Three	0 (0%)	1 (50%)	1 (50%)	0 (0%)

As shown in Table 26, academic challenges found in the early college program as rated by different demographic groups suggests that students of different grades, genders, second language status, parent degree attainment, and years in program found the academic challenges of the early college program to be fairly similar, χ^2 (4, N = 55) =

.334 , $p = .988$, χ^2 (2, $N = 55$) = .649 , $p = .723$, χ^2 (2, $N = 55$) = .627 , $p = .731$, χ^2 (2, $N = 55$) = 1.057 , $p = .590$, and χ^2 (4, $N = 55$) = 1.995 , $p = .737$, respectively.

As indicated in the survey and on Table 27, students who speak a second language did imply that the challenges of time management were more difficult than did their non-second language speaking peers, χ^2 (3, $N = 56$) = 8.050 , $p = .045$, which was found to be statistically significant. Time management challenges found in the early college program as rated by the other demographic groups suggests that students of different grades, genders, parent degree attainment, and years in program found the time management challenges of the early college program to be fairly similar, χ^2 (6, $N = 56$) = 5.073, $p = .534$, χ^2 (3, $N = 56$) = .417, $p = .937$, , χ^2 (3, $N = 56$) = 1.290, $p = .731$, and χ^2 (6, $N = 56$) = 1.822, $p = .935$, respectively.

Table 27

Rating of Time Management Challenges

	Not very challenging	A little bit challenging	Challenging	Very challenging
Grade				
Tenth	2 (16.7%)	3 (25%)	7 (58.3%)	0 (0%)
Eleventh	2 (7.1%)	12 (42.9%)	13 (46.4%)	1 (3.6%)
Twelfth	2 (12.5%)	7 (43.8%)	5 (31.3%)	2 (12.5%)
Gender				
Male	3 (13.6%)	8 (36.4%)	10 (45.5%)	1 (4.5%)
Female	3 (8.8%)	14 (41.2%)	15 (44.1%)	2 (5.9%)
2nd language				
Yes	4 (18.2%)	5 (22.7%)	13 (59.1%)	0 (0%)
No	2 (5.90%)	17 (50%)	12 (35.3%)	3 (8.8%)
Degree Attainment				
No	4 (14.8%)	11 (41.7%)	11 (40.7%)	1 (3.7%)
Yes	2 (6.9%)	11 (37.9%)	14 (48.3%)	2 (6.9%)
Years in program				
One	5 (12.2%)	15 (36.6%)	18 (43.9%)	3 (7.3%)
Two	1 (7.7%)	6 (46.2%)	6 (46.2%)	0 (0%)
Three	0 (0%)	1 (50.0%)	1 (50.0%)	0 (0%)

As shown in Table 28, social relationship challenges found in the early college program as rated by different demographic groups implies that students of different grades, genders, second language status, parent degree attainment, and years in program found the social relationship challenges of the early college program to be fairly similar, χ^2 (6, N = 55) = 4.279 , p = .639, χ^2 (3, N = 55) = 3.124 , p = .373, χ^2 (3, N = 55) = 2.219 ,

$p = .528$, χ^2 (3, $N = 55$) = 2.378 , $p = .498$, and χ^2 (6, $N = 55$) = 2.508 , $p = .868$, respectively.

Table 28

Rating of Social Relationships

	Not very challenging	A little bit challenging	Challenging	Very challenging
Grade				
Tenth	10 (83.3%)	1 (8.3%)	1 (8.3%)	0 (0%)
Eleventh	14 (51.9%)	9 (33.3%)	2 (7.4%)	2 (7.4%)
Twelfth	10 (62.5%)	4 (25%)	1 (6.3%)	1 (6.3%)
Gender				
Male	16 (76.2%)	3 (14.3%)	1 (4.8%)	1 (4.8%)
Female	18 (52.9%)	11 (32.4%)	3 (8.8%)	2 (5.9%)
2nd language				
Yes	13 (61.9%)	6 (28.6%)	2 (9.5%)	0 (0%)
No	21 (61.8%)	8 (23.5%)	2 (5.9%)	3 (8.8%)
Degree Attainment				
No	14 (53.8%)	9 (34.6%)	2 (7.7%)	1 (3.8%)
Yes	20 (69%)	5 (17.2%)	2 (6.9%)	2 (6.9%)
Years in program				
One	25 (61%)	10 (24.4%)	3 (7.3%)	3 (7.3%)
Two	7 (58.3%)	4 (33.3%)	1 (8.3%)	0 (0%)
Three	2 (100%)	0 (0%)	0 (0%)	0 (0%)

As shown in Table 29, college preparation challenges found in the early college program as rated by different demographic groups suggests that students of different

grades, genders, second language status, parent degree attainment, and years in program found the college preparation challenges of the early college program to be similar, χ^2 (6, $N = 56$) = 8.792, $p = .186$, χ^2 (3, $N = 56$) = 1.497, $p = .683$, χ^2 (3, $N = 56$) = .275, $p = .965$, χ^2 (3, $N = 56$) = 4.100, $p = .251$, and χ^2 (6, $N = 56$) = 2.009, $p = .919$, respectively.

Table 29

Rating of College Prep

	Not very challenging	A little bit challenging	Challenging	Very challenging
Grade				
Tenth	5 (41.7%)	5 (41.7%)	2 (16.7%)	0 (0%)
Eleventh	8 (28.6%)	16 (57.1%)	3 (10.7%)	1 (3.6%)
Twelfth	11 (68.8%)	3 (18.8%)	6 (10.7%)	2 (3.6%)
Gender				
Male	10 (45.5%)	10 (45.5%)	2 (9.1%)	0 (0%)
Female	14 (41.2%)	14 (41.2%)	4 (11.8%)	2 (5.9%)
2nd language				
Yes	9 (40.9%)	10 (45.5%)	2 (9.1%)	1 (4.5%)
No	15 (44.1%)	14 (41.2%)	4 (11.8%)	1 (2.9%)
Degree Attainment				
No	12 (44.4%)	9 (33.3%)	4 (14.8%)	2 (7.4%)
Yes	12 (41.4%)	15 (51.7%)	2 (6.9%)	0 (0%)
Years in program				
One	17 (41.5%)	19 (46.3%)	4 (9.8%)	1 (2.4%)
Two	6 (46.2%)	4 (30.8%)	2 (15.4%)	1 (7.7%)
Three	1 (50%)	1 (50%)	0 (0%)	0 (0%)

Qualitative Results

Within this study, the quantitative data was analyzed separately from the qualitative data. Five open-ended questions on the survey further enhanced the quantitative answers to the Research Questions and those responses will be analyzed in this section.

The data analysis for the qualitative portion of the convergent parallel mixed methods study follows the outline devised by Creswell (2014). The Research Questions were reviewed and patterns were developed based on student responses. The first three Research Questions were not addressed by the open-ended responses, but the last three Research Questions were further answered through the data collected from the open-ended survey responses.

Research question 4. The fourth research question examined if early college students found academic or social supports more important. It was partially answered by the first opened ended question which asked students to describe a positive experience you have had using the early college's tutoring, advisories (HD 100), or college information sessions. The responses were grouped according to the three categories of supports examined: academic, social, or college information to determine which supports were mentioned most often in the responses to the open-ended questions. Out of the 56 students who responded to the current early college survey, only 38 students responded to this open-ended question, although not all of the responses were applicable to the Research Question.

Table 30

Describe a Positive Experience You Have Had Using the Early College's Tutoring, Advisories, (HD 100), or College Info Sessions.

	Response Numbers	Comment
Academics		
	8	Learned how to be successful now
	2	Tutoring
	1	Time management
	1	Gathered lots of information
	1	Learned about working together and problem solving
	1	Understood the topic I was being taught
	1	Passing an exam
Social		
	6	Met other high school students/friends
College information and future		
	2	Gathered information about 4 year college
	2	Gathered information about career
	4	Found out about planning and the future
	1	Information about colleges and scholarships

Success was discussed most often as shown in Table 30. Students indicated that the early college supports did help them feel more successful. Even though eight students mentioned the theme of success in this question, success was defined differently by some of the students. Six of the eight students commented on feeling more successful, while

two of the students specified that they felt more successful in their college classes. Other themes that emerged included six students who felt that these supports helped them meet other students and make friends, while fewer students felt that these supports prepared them for four-year college or career.

When analyzing this qualitative data in reference to Research Question 1, no clear demographic differences emerged in the comments. For example, in response to feeling more successful due to the supports, three of the respondents were male students and five were female students. One female student commented, "They have helped me to be successful in college and have clarified things for me." One of the male students responded, "It was helpful in answering questions about admissions, registering for classes, and using college resources." Another female student stated, "We were involved in the HD 100 class, we learned a lot about working together and solving problems." The qualitative data suggested that both male and female students had positive experiences through the supports provided by the early college program: accessing the tutoring center, taking HD 100, and attending college information sessions.

When disaggregating the data by demographics in reference to socializing and friendships made within the supports listed, comments across grade levels were made equally by two tenth graders, two eleventh graders, and two twelfth graders.

Out of the eight comments that discussed feeling more successful because of the supports, six of those comments were made by second language speakers. One of the second language speakers stated, "HD 100 made me feel more comfortable with my other college classes." This did indicate a higher percentage of second language speakers commenting on success through the supports in the early college program than non-

second language speakers, but only six of the 22 second language speakers who answered the survey made a comment about finding success through the supports. This comment may not be generalizable to all second language speakers in the program since the program overall contains 49 second language speakers, but only six commented on the success found in the supports. When examining the responses in reference to Research Question 4, more of the responses centered around academic supports than around either social supports or college information.

Research question 5. The fifth Research Question asked about the most challenging aspects of the early college program. It was addressed by the second open-ended question that inquired about what frustrating or challenging experiences they had with the supports? Of the 56 students who responded to the current early college student survey, 32 students answered this open-ended question. Of the themes that emerged through the qualitative coding, the most prevalent was the response *No frustrations*. A total of 13 students stated that they had no frustrations with the supports offered by the early college. The second theme that emerged concerned stress and homework. Five students responded that the homework was stressful as were finals. Even though the comments did not specify which supports were causing frustration, it may be that students felt the supports did not help alleviate homework stress.

Table 31

Describe a frustrating or challenging experience you have had using the early college's tutoring, advisories (HD 100), or college information sessions.

	Frustrating or Challenging Experience (n = 32)
No Frustrations	13
Academics	
Stress and homework	6
Tutors weren't helpful	5
Logistics (paying bills, registering)	4
Social	
Personal topics in HD 100	3
Didn't make friends	1

Five students made a comment that the tutors in the early college program were not helpful or were rude, four students commented that logistics were difficult such as registering for classes, paying bills, and communicating, and three students expressed frustration with the main topics of focus in the HD 100 advisory class. One of the students commented, "The only complaint I have against HD 100 was how much time seemed to be wasted on discussing personal details with the class."

Research question 6. The sixth research question probed how supports in the early college high school could be improved. Research Question 6 was addressed by the last three open-ended research questions. The first question asked the students how MEWA could better support academic success. Many students felt that further support was not needed, but other students did mention the need for better communication, more

money to cover costs, and more tutoring. The second open-ended research question asked students to discuss frustrating experiences they had using the early college's supports. Because students responses to this question did not pertain to this research question, the results are not discussed here but were discussed with Research Question 5.

Table 32

How Could MEWA Better Support Your Academic Success?

	Better academic supports? (n = 36)
No need for better supports	14
Better communication	7
More college information	6
More money to cover costs	5
Tutoring	4

Within the third open-ended question, five main themes emerged. Most students, 14 out of 36 or 39%, felt that the early college program was meeting their needs to a sufficient degree. Seven of the total 36 respondents expressed the need for better communication which, when examined more closely, discussed more relevant emails, or clearer instructions on how to register for classes. The third theme that emerged concerned more college information sessions.

Six students of the 36 who responded mentioned wanting to know more information about degrees and preparing for four-year college. Because this was a relevant theme, and because one of the supports examined was college information sessions, it seems that even though the school may feel that they are providing college information sessions for the students, the students do not feel the same way. Of the six

who responded with this type of answer, two were tenth graders and four were eleventh graders, while none were twelfth graders.

Five students commented on wanting more money to cover college tuition and book costs. This was a new theme that emerged through the qualitative findings and not through the Research Questions or quantitative findings. Because a number of students did mention the need for support through financial aid, this topic should be addressed in both the discussion section of this research project, and in future research.

Finally, four students mentioned that they would like more tutoring. One student mentioned wanting more tutoring through MEWA, the high school program rather than through the community college.

The fourth open-ended question investigated how MEWA could better address social supports, which also addressed Research Question 6. Through this question, five basic themes emerged out of the 30 responses. The first theme included a response from 14 students, and those students indicated that MEWA did not need to do more to address social needs (see Table 33). Six students mentioned that they would like more social events outside of class, four students discussed wanting more social events in class, four students made somewhat general comments such as “Helping out” and two students mentioned wanting more online social opportunities.

Table 33

How Could MEWA Better Address Your Social Supports in the Early College Program?

	Better address social supports? (n = 30)
No need to do more for socializing	14
More social events out of class	6
More social events in class	4
General comments	4
More online social opportunities	2

The final open-ended question invited students to respond in ways that had not been presented to them already by asking what else they wanted the MEWA faculty to know. Of the 30 students who responded to this question, five themes emerged. 19 students commented that there was nothing else they would like to convey. Five students responded that they would like better communication, three students mentioned wanting more opportunities to respond to surveys, two students commented on needing more monetary support, and one student wanted more four-year college information.

Table 34

What Else Would You Like MEWA Faculty to Know About How to Meet Your Needs as a Student?

	Other information about supports? (n = 30)
No need for more	19
Better communication	5
More surveys	3
More money	2
More 4-year college information	1

CHAPTER IV

DISCUSSION

The results of this study present useful data about supports in the early college program at the Metro East Web Academy. An important area of examination for the early college program at the Metro East Web Academy is the statistically significant finding that students who have been in the early college program more years access the tutoring center more often than do students in their first year of the program. Requiring the first year students to access the tutoring center on a number of occasions throughout the semester could be a solution for this gap.

Second language speakers indicated that time management was a greater challenge for them than it may have been for their non-second language speaking peers. Often second language students have responsibilities outside of academics that their non-second language peers do not have and this could cause difficulties in accessing the sports available or in finding success within the early college program.

The findings from the survey proposes that second language speakers find the programs AVID and TRIO, programs specifically designed to support first-generation college students, second language speakers, and low-income students, as more helpful academic, social, and college preparation supports than do other demographic groups. Even though this information is logical, since the students targeted by these programs are the ones finding more benefit in them, it is still worthy of note for purposes of further emphasizing this support to specific demographic groups.

Findings also imply that students whose parents had not earned a degree and male students found programs such as AVID and TRIO a more useful support than did students whose parents had earned a degree, and female students. It appears that different demographic groups may need differing supports, and targeting these supports toward specific groups may prove beneficial in meeting the needs of the students. Bringing representatives from AVID and TRIO into the HD100 class could help second language speakers and students whose parents had not earned a degree understand the supports these programs could offer, and this could increase their access to these supports.

After examining the somewhat limited data from the graduates of the early college program, it is worthy to note that many of those students did not access the tutoring center, did not take HD 100, and did not attend many college information sessions. It is possible that the current early college program is already making strides in helping students access the supports in the early college program and that future cohorts of students may access the supports more fully than did past cohorts.

Implications for MEWA

Because this study focused on one particular school in the Gresham-Barlow School District, the use of this data will positively influence the direction the program goes and improvements that program could currently make.

Research question 1 and 2. The results of this study provide useful information to inform the level of supports in the early college program for high school students who are attending college classes. The survey findings suggest that just over 40% of the first year students in the current early college program access the tutoring center at Mt. Hood Community College. In contrast, most of the second year students and all of the third

year students do access the tutoring center regularly. The qualitative data supports this finding since three of the four students who commented on needing more tutoring support were first year students.

If we return to the original literature review, this finding corresponds with the finding from Locke (2014) who discovered that some students were unable to access the college provided tutoring for a variety of reasons, such as responsibilities at home or scheduling difficulties. As a high school, providing tutoring through the high school rather than through the community college to meet the needs of our early college students, especially our first year students, should be implemented. Other early college high schools may also find that this is the case; students may feel more comfortable accessing the tutoring center through the high school rather than through the college.

The results from the graduates of the early college high school were limited in scope with only nine responses to the survey. Even so, more than half of the students from the graduate survey had never accessed the tutoring center. This is not the case with current early college students. Even though not as many of the current students are accessing the tutoring center as regularly as may be desired, more are doing so than have in the past. This is encouraging and may mean that some of the early college program's current practices are moving students toward fully accessing this support.

Research question 3. Findings also suggest that even though many of the current early college students are encouraged to take HD 100, the college advisory class, few of them view this class as very helpful in supporting their early college success. Instead, family, friends, and teachers were all more important in finding success within the early college program. When we return to the literature review, only five of the 19 studies

mentioned offering advisories and the definition of advisory could be interpreted widely, "Early colleges offer advisories, classes with high school teachers to support particular college courses, and more successful individual supports" (Berger, 2013, p. 2-3). Without a clear definition of a purposeful and successful advisory, we will examine what makes for a purposeful advisory and one that truly meets the needs of the students. As an early college school, we will evaluate the curriculum in our advisory class and determine what should be changed and adapted in order for the class to become meaningful for the students. Including more opportunities to access the tutoring center, to explore four-year college and career, and to improve time management is necessary. As one student responded, "The only complaint I have against HD 100 was how much time seemed to be wasted on discussing personal details with the class." Another student responded with a similar comment, stating "Too much 'safe space'." The teacher of the advisory class should include more academic supports and fewer social supports to meet the expressed needs of our early college student population.

A similar finding occurred when examining the support of programs through Mt. Hood Community College that are intended to aid first-generation college students, second language speakers, and low-income students with college success. These programs, such as TRIO and AVID, fell into the last three helpful categories among all students of all demographics. This indicates that students are not accessing these supports and don't know that they can access these supports, or we need to build a program that would act as a similar support through our high school, Metro East Web Academy. If the programs that are specifically designed to help students navigate college are not viewed as helpful, something is missing in that particular support. In contrast, after examining the

statistical findings of access to these supports, it does appear that certain demographic groups do find these programs important, and find them far more important than other demographic groups.

After examining the number of students who regularly attend the tutoring center, either once a week or once a month, certain demographic categories of students did emerge. More female students, second language speakers, students whose parents do not have degrees, tenth graders, and third year students accessed the tutoring center more regularly than did the other students. In some categories as many as 50% of the students were accessing the tutoring center at Mt. Hood Community College. This information is encouraging, because it does imply that the tutoring center is addressing the needs of many of our historically underserved students. It also appears that current early college high school students are accessing these supports more readily than did graduates of the early college program.

Research question 4. As indicated by the ranking of supports through Table 23 and Table 24 and the qualitative comments concerning social supports, the data implies that students value family as the most important support across all demographic groups. Even though programs such as AVID and TRIO were ranked as the least valuable support, certain demographic groups did rank these supports as important: second language speakers and students whose parents had not attained a degree.

Some students did indicate through the open-ended survey questions that they would like more social supports, which could be delivered both through classes and online, but most students preferred academic supports to social supports. Most comments centered around wanting more college information sessions, tutoring, and

communication. Even though students did seem to disagree on which supports were needed, a clear theme of needing to focus on academic supports did emerge. Because of these findings, requiring first year students to access the tutoring center will be implemented in the HD100 class. Also, offering tutoring through the high school rather than through the college will also be necessary.

Research question 5. Students suggested through their responses that the academic challenges of the early college program were more challenging than the social challenges. Through the open-ended survey questions, it became apparent that students would like additional help in specific areas. Six students commented on needing additional help with stress and homework. Currently, socio-emotional supports through MEWA counselors are implemented in the school mentoring classes. Adding this to the curriculum in the HD classes through the community college will help students discover ways they can identify and alleviate stress from their lives.

Within this Research Question, it was noted that second language speakers found the challenge of time management more difficult than other demographic groups. Understanding why this demographic group struggles with this challenge is something MEWA needs to explore. It is possible that this demographic group has responsibilities outside of school that the other demographic groups may not have, and finding the time to do school well while also meeting other requirements may prove to be an excessive challenge for this demographic group.

Research question 6. One finding that revealed itself through the open-ended responses but was not asked during the quantitative questions focused on monetary support. When students in the current early college high school were asked how MEWA

could better support their academic success, five students responded that they would like more help with funding. “Books are very expensive. It would be nice to have more help in this regard.” “Maybe with helping with the cost of books a little bit more.” Because MEWA does not always cover book expenses or additional class expenses, this falls to the student. Currently students receive $1450.00 a term for tuition and book expenses. Even though funding translates to $4200.00 a year, this might not cover all of the costs of current community college tuition and books. Applying for grants to support book costs for the ECHS students will be explored during the 2018-2019 school year.

Another finding that revealed itself in the open-ended Research Questions was the need for more college information. Even though college information sessions are offered through HD 100, other programs, and the college itself, students may not be accessing these supports or may not be hearing of the sessions and therefore not finding the information. Making sure students know about the college information sessions and providing them at a time when students can access them is something MEWA will provide through clearer communications. Students indicated in their open-ended responses that they would like online supports and better communication; developing a blog where pertinent information is disseminated to students in the program is a necessary step.

Implications beyond MEWA

Generalizability of this study may prove difficult due to the specific demographics of the students in the early college program at MEWA. Yet, implications of the findings are suggested and could help inform the supports developed in other early college programs. For example discovering that particular demographic groups may need

targeted and meaningful supports could aid other schools in examining this possibility within their own schools. Discovering what those supports are and which ones work best for different demographic groups could be crucial to success for historically underserved students. If second language speakers benefit from outside programs, other early college programs may want to ensure that their second language speakers are aware of these programs and able to access them.

Another implication of this study for other early college programs is the examination of advisory classes. As indicated in Table 5, many early college schools do not offer advisory classes. Asking students about feedback concerning the advisory classes could inform curriculum development within the course and perhaps develop an effective support that meets the needs of the students in the early college program.

Finally, surveying the early college students could aid in further improving and developing supports in any early college program. According to Table 34, three students stated that they would like to take part in more surveys about the early college program. Providing opportunities for students to give feedback could help students feel not only included, but could also reassure them that their needs are noted, as are their thoughts, opinions, and comments.

Limitations

A relevant discussion of validity and reliability is included and does provide a forthright examination of the study itself.

Within the convergent parallel mixed methods design of the survey delivered to both the graduates of the early college program and the current students in the early college program, qualitative questions were used to enhance the understanding of the

quantitative questions. And although the open-ended questions did offer further insight into the quantitative questions, a support was proposed by the students that had not been examined earlier in the survey. The suggestion of a support that was not examined could imply that a threat to external validity had occurred because the qualitative and quantitative questions did not clearly align (Creswell, 2014, p. 223).

A threat to internal validity could have occurred due to familiarity. I currently work at the school where the survey was conducted and know a number of students in the program as well as graduates of the program. Some students may have felt a certain obligation to respond to questions in a particular way because of my relationship to them. Complete disclosure concerning my relationship with the students in the program is necessary (Creswell, 2014). When I delivered the survey to the current early college students in one of their classes, I emphasized that students did not have to complete the survey, and if they did not, no repercussions would occur. I also asked the teacher to step out of the room so they would not feel the need to respond to questions in a certain way due to his presence. Even though these assurances were given, students may have felt that our relationship influenced their responses.

Another limitation to this study was response rates. Of the 119 students, only 59 students responded, and only 56 of those responses were usable. This means the response rate was 47%, and although survey response rates can be fairly low due to the nature of the survey method, higher response rates are more desirable and will present a more accurate picture of the population (Dillman, 2014). Limitations with the second survey were also apparent. Because these students were graduates of the early college program, some of the contact information retained by MEWA may not have been correct. Of the 49

graduates who were sent a survey, only 10 responded, and only nine of those survey responses were usable because one declined to accept. The response rate for the graduate survey was 18%. Disaggregating this data into specific demographics was not possible due to low numbers in many of the categories.

Finally, because the ECHS students at MEWA have unique characteristics, generalizability to other groups may not be possible. I am unable to claim generalizability to other ECHSs because of the unique population at our school (Creswell, 2014). I have documented the convergent parallel mixed methods procedure carefully, though, in case other researchers chose to replicate this study. These results may be time-bound and not generalizable to students of a different generation or graduating year in school

Further Study

Despite these limitations, we learned valuable information about our current early college program. A possible area of further study would be in terms of program sustainability. Because the cost of college tuition is high, and because public high schools receive a certain amount of Average Daily Membership (ADM) per pupil, often the bulk of the ADM received by the early college is sent to the community college for tuition costs. This makes for a program that is difficult to sustain without a high number of students within the program, or needs to be attached to a school where the early college program is only one of the programs offered. Even though the early college program shows much progress concerning success of certain demographic groups in graduating from high school, going on to college, and earning a college degree, the financial feasibility needs to be examined and partnerships with community colleges, that perhaps

discount the cost of tuition for early college students, may be worthy of pursuit for early college high schools.

Because 44% of the first year students never accessed the tutoring center, further examination of why this is occurring is necessary. It is possible that first year students do not know of the accessibility of the tutoring center and finding ways to disseminate this information is crucial. Requiring that first year students access the tutoring center a few times a month could also alleviate the gap between first and second years students and access to the tutoring center.

Second language students indicated that time-management was a great challenge for them than their non second-language speaking peers. Exploring why this is the case for this demographic group could again aid the program in providing supports that are not currently in place.

Another finding that may warrant further examination by the early college program at MEWA is the curriculum in the HD 100 class. The open-ended survey responses did recommend that some students would like to see more academic supports provided in HD 100 than social supports. Examining the curriculum in the advisory class, and perhaps asking students for further recommendations through surveys could polish the current course syllabus and provide a more purposeful academic, social, and college preparation support.

As a growing early college program, we also need to continue offering students the opportunity to give feedback about the program. It was clear that students appreciated being given the survey and would like more opportunities to offer constructive feedback in the future.

APPENDIX A

LITERATURE REVIEW

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APPENDIX B

SURVEY QUESTIONS

Early College Experience

Start of Block: Block 4

Q34 Hello! I am Christina Struyk-Bonn, a teacher and administrator at MEWA, and we need your help with a study I am doing through the University of Oregon.

Thank you so much for your help with this study! The following information will give you an overview of the purpose, procedures, and possible benefits of participating in this study.
Purpose of Study:The purpose of this study is to find out what supports you find most helpful in the early college program. Supports within the program include tutoring, HD 100, college information, or support from family, peers, and staff. Description of the Study Procedures:If you agree to be in this study you will fill out a survey. The survey will ask specific questions about the supports you have used (or not used) while in the early college program. It should take about ten to fifteen minutes of your time. **Risks/Discomforts of Being in the Study:**Reasonable foreseeable risks include some discomfort for you if you feel that the supports provided by MEECA are not adequate and you state this in your response to the questions. Also, if you are not accessing the supports and are not doing well in your classes, you may feel some discomfort in stating such. If you choose to opt out of the survey, you could possibly feel some social pressures from peers who opt into the survey and visa versa. **Benefits of Being in the Study:**You could potentially benefit from any program improvements made based on data compiled from the survey.
Compensation: You will not receive any monetary compensation for taking part in this survey. Costs:There is no cost to you to participate in this research study. Confidentiality:The survey is anonymous. The records of this study will be kept private. In any sort of report we may publish, we will not include any information that will make it possible to identify a participant. Research records will be kept in a locked file. All electronic information will be coded and secured using a password protected file. Access to the records will be limited to the researchers; however, the Institutional Review Board and internal University of Oregon auditors may review the research records. Voluntary Participation/Withdrawal:Your participation is voluntary. If you choose not to participate, it will not affect your current or future relations or standing with the Metro East Early College Academy (MEECA). Participation has no effect on grades.
Contacts and Questions:The researcher conducting this study is Christina Struyk-

Bonn. For questions or more information concerning this research you may contact me at 971-413-5733 or through email at cstruykb@uoregon.edu.

If you have any questions about your rights as a research subject, you may contact: Research Compliance Services, University of Oregon at (541) 346-2510 or ResearchCompliance@uoregon.edu.

Q41 Copy of Consent Form:If you would like a copy of the consent form, please contact me and I will send one to you.
If you wish to participate, please click "I consent" below to begin the survey. If you do not wish to participate, please click "No thanks" below.

- O I consent (1)
- O No thanks (2)

End of Block: Block 4

Start of Block: Default Question Block

Q35 **Please tell me a little bit about yourself by answering the questions below.**

Q36 What is your grade level?

- O 10th grade (1)
- O 11th grade (2)
- O 12th grade (3)
- O Other (4) _____

Q20 What is your gender?

- O Male (1)
- O Female (2)
- O Non-binary/third gender (3)

Q4 Do you speak a language other than English?

- O Yes (1)
- O No (2)

Skip To: Q3 If Do you speak a language other than English? = No

Q5 If you do speak a language other than English, which language do you speak?

- O Romanian (1)
- O Russian (2)
- O Spanish (3)
- O Ukraine (4)
- O Other (5) _____

Q3 How would you classify your race?

- O American Indian (1)
- O Asian/Pacific Islander (2)
- O Black/African American (3)
- O White/Caucasian (5)
- O Multiracial (6)
- O Other (7) _____

Q37 What ethnicity do you consider yourself?

_____

Q32 What is the highest degree attained by a parent in your family?

- O Less than high school (1)
- O High school graduate (2)
- O Some college (3)
- O 2 year degree (4)
- O 4 year degree (5)
- O Professional degree (6)
- O Doctorate (7)

Q38 Did one or both of your parents attend college in the United States?

- O Yes (1)
- O No (2)
- O Not Sure (3)

Page Break

End of Block: Default Question Block

Start of Block: Block 1

Q39 **Tell me a little bit about your experience in the early college high school program (MEECA).**

Q1 How did you originally hear about the early college program at The Metro East Web Academy?

- O Through a friend (1)
- O Through my school counselor (2)
- O Through a family member (3)
- O Through a web search (4)
- O Through the web academy, which I attended before moving into the early college program (5)
- O Other (6) _____

Q2 How many years have you been in the early college program?

- O This is my first year in the program (1)
- O This is my second year in the program (2)
- O This is my third year in the program (3)

Q8 How hard have the challenges been in the early college program?

	Not very challenging (1)	A little bit challenging (2)	Challenging (3)	Very challenging (4)
Academics (1)	O	O	O	O
Time management (2)	O	O	O	O
Social Relationships (3)	O	O	O	O
College Prep (4)	O	O	O	O

Q24 How often do you access the tutoring center at Mt. Hood Community College?

	Never (1)	Once or twice a year (2)	Once or twice a term (3)	Once or twice a month (4)	Every week (5)	Every day (6)
Number of times accessing the tutoring center at MHCC. (1)	O	O	O	O	O	O

Q28 Did you take or are you taking the early college advisory class, HD 100?

O Yes (1)

O No (2)

Q26 How many college information sessions have you attended?

	None (1)	One (2)	Two to Four (3)	Five or more (4)
Number of college information sessions attended. (1)	O	O	O	O

Q27 Where did you attend the college information sessions? (Indicate all that apply)

- ☐ Through a special MHCC workshop. (1)
- ☐ In the HD 100 class. (2)
- ☐ In a different class. (3)
- ☐ Outside of the early college program. (4)
- ☐ Other (5) _____

Q42 What are your plans? (Indicate all that apply)

- ☐ Graduate with an Associate's degree (1)
- ☐ Go to a technical school (2)
- ☐ Go to a 4-year university or college (3)
- ☐ Work (4)
- ☐ Take an internship (paid or unpaid) (5)
- ☐ Join the armed forces (6)
- ☐ Other (7) _____

End of Block: Block 1

Start of Block: Block 2

Q40 **Tell me a bit about your friends and family.**

Q13 Did you make friends in the early college program?

- O Yes (1)
- O No (2)

Skip To: Q21 If Did you make friends in the early college program? = No

Q14 How have you met friends in the early college program? (Indicate all that apply)

- ☐ In one of my classes (1)
- ☐ In HD 100 (2)
- ☐ I already knew my friends before staring the early college program (3)
- ☐ In the library (4)
- ☐ Other (5) _____

Q15 In what ways do your friends help you succeed in the early college program? (Indicate all that apply)

- ☐ We study together (1)
- ☐ We provide encouragement to each other (2)
- ☐ We make sure that assignments are complete (3)
- ☐ We try to take the same classes (4)
- ☐ My friends are not very helpful with my success in the early college program (5)
- ☐ Other (6) _____

Q21 In what ways does your family help you succeed in the early college program? (Indicate all that apply)

- ☐ My family helps me study (1)
- ☐ My family provides encouragement (2)
- ☐ My family provides me with transportation (3)
- ☐ My family makes sure my assignments are complete (4)
- ☐ My family is not very helpful with my success in the early college program (5)
- ☐ Other (6) _____

End of Block: Block 2

Start of Block: Block 3

Q10 How helpful are the following academic supports to you in the early college program?

	Academic Support			
	Very Helpful (1)	Helpful (2)	Somewhat Helpful (3)	Not Very Helpful (4)

Family (1)	O	O	O	O
Friends (2)	O	O	O	O
Counselor (3)	O	O	O	O
Teachers (4)	O	O	O	O
HD 100 (college advisory class) (5)	O	O	O	O
The tutoring center at Mt. Hood Community College (6)	O	O	O	O
Tutoring outside of the community college (7)	O	O	O	O
Other programs such as TRIO or AVID (8)	O	O	O	O

Q48 How helpful are the following moral or social supports to you in the early college program?

	Moral or social support			
	Very Helpful (1)	Helpful (2)	Somewhat Helpful (3)	Not Very Helpful (4)

Family (1)	O	O	O	O
Friends (2)	O	O	O	O
Counselor (3)	O	O	O	O
Teachers (4)	O	O	O	O
HD 100 (college advisory class) (5)	O	O	O	O
The tutoring center at Mt. Hood Community College (6)	O	O	O	O
Tutoring outside of the community college (7)	O	O	O	O
Other programs such as TRIO or AVID (8)	O	O	O	O

Q49 How helpful are the following college information supports to you in the early college program?

	College information			
	Very helpful (1)	Helpful (2)	Somewhat Helpful (3)	Not Very Helpful (4)

Family (1)	O	O	O	O
Friends (2)	O	O	O	O
Counselor (3)	O	O	O	O
Teachers (4)	O	O	O	O
HD 100 (college advisory class) (5)	O	O	O	O
The tutoring center at Mt. Hood Community College (6)	O	O	O	O
Tutoring outside of the community college (7)	O	O	O	O
Other programs such as TRIO or AVID (8)	O	O	O	O

End of Block: Block 3

Start of Block: Block 5

Carry Forward All Choices - Displayed & Hidden from "How helpful are the following academic supports to you in the early college program?"

Q11 How important are the following to your success in the early college program? Rank the supports in the order of importance.

_____ Family (1)
_____ Friends (2)
_____ Counselor (3)
_____ Teachers (4)
_____ HD 100 (college advisory class) (5)
_____ The tutoring center at Mt. Hood Community College (6)
_____ Tutoring outside of the community college (7)
_____ Other programs such as TRIO or AVID (8)

End of Block: Block 5

Start of Block: Block 6

Q41 Early college high schools usually offer the following four supports: tutoring, advisories (HD 100), college information sessions, and small school supports. Please tell us your thoughts about these supports.

Q22 In what areas would you like additional support and help in the early college program? (Indicate all that apply.)

- ☐ Information about financial aid (1)
- ☐ Four-year college information (2)
- ☐ Career planning information (3)
- ☐ Study skills (4)
- ☐ Academic coaching (5)
- ☐ Emotional Support (6)
- ☐ Counseling on topics other than academics (8)
- ☐ Other (7) _____

Q18 Describe a positive experience you have had using the early college's tutoring, advisories (HD 100), or college info sessions.

_____

Q44 Describe a frustrating or challenging experience you have had using the early college's tutoring, advisories (HD 100), or college information sessions.

_____

Q19 How could MEWA better support your academic success?

_____

Q45 How could MEWA better support your social supports in the early college program?

_____

Q43 What else would you like MEWA faculty to know about how to meet your needs as a student?

_____

End of Block: Block 6

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