EFFECTS OF EARLY COLLEGE PROGRAMS ON COMMUNITY COLLEGE RETENTION AND GRADUATION RATES.

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Abstract

Early college programs have become a popular method intended to provide high school students the opportunity to complete a significant amount of college coursework before graduating high school. This study is intended to explore if and how early college high schools (ECHSs) affect retention and graduation rates of first-year students, particularly in community colleges. ECHSs, by design, are comprised primarily of low-academic achieving, underrepresented students. Rigorous coursework and positive teacher and classroom experiences challenge students, providing the foundation for student success. The population in this study may not represent a typical ECHS demographic, but expands research, exploring the potential to reduce socio-economic discrepancies between students (An, 2013). The design of the present study examines the perceptions and experiences of students after ECHS completion or withdrawal, along with retention and attrition rates.

*Keywords: early college high school, dual enrollment program, high school, community college, university, retention, attrition, graduation rate*
Chapter 1: Introduction

Community colleges, by nature, struggle with student retention on a continual basis. Efforts to increase student enrollment are often the focus of marketing campaigns, as well as considerable financial commitments. Generally, community colleges place little focus on retaining students after initial acceptance and enrollment. However, student retention plays a significant role in measuring institutional effectiveness when funding sources and accountability are critical factors (Wild & Ebbers, 2002). Early college programs have become a popular method intended to provide high school students the opportunity to complete a significant amount of college coursework before graduating high school. In 2013, more than 240 Early College High Schools (ECHSs) were in operation nationally in 28 states and the District of Columbia, serving 75,000 students (Woodcock & Beal, 2013). ECHSs are designed largely from the dual enrollment model, where nationally, “57% of postsecondary institutions in 38 states have dual enrollment programs” (Berger, Adelman, & Cole, 2010, p. 334). States having started ECHSs on their own or without foundation funding include Georgia, Michigan, North Carolina, Pennsylvania, and Texas (Hoffman & Webb, 2009, June 11). Of these states, North Carolina has the highest number of ECHSs with over 60.

Much of the thinking behind early college programs is to allow students the opportunity to complete an associate’s degree by the end of grade 13, and transition to a university. Many students currently served by early college programs come from disadvantaged homes. Early college programs seek to alleviate the issue where access to college is problematic for nontraditional or high-risk students (Byrd & MacDonald, 2005). The ability to attend college free is an obvious attractor to the program (Edmunds, 2012), while the rigorous curriculums may deter students not focused on academic success.
Students often find great individual success through the new three R’s: rigor, relationships and relevance (Fischetti, MacKain, & Smith, 2011; Ongaga, 2010), which are the foundation of the Early College High School Initiative (ECHSI) (Berger, et al., 2010). ECHSI is premised on evidence that challenging and rigorous learning experiences, coupled with respectful and supportive school environments are precursors to student success (Ongaga, 2010). Determining successful students, in terms of retention and graduation will assist in reducing student attrition. Conversely, analyzing reasons why students leave may provide more insight into lowering attrition rates. Shifting focus from “what is wrong with the student to what is wrong with the institution” (Wild & Ebbers, 2002, p. 509) may significantly help answer this question. Also, realizing if a student attains his/her educational goal of personal enrichment, job enhancement skills, or leaves an institution for a different personal reason, this is not an institutional failure (Drew, 1990).

**Background of Problem**

Traditionally, early college models have been implemented to help students with potential for college, but who have multiple factors, which put them at an academic disadvantage (Born, 2006). Students from low-income single parent homes, diverse ethnic backgrounds, and a history of failed classes, are typically selected for early college programs (Berger et al., 2010; Born, 2006). Skeptics argue early college programs can only succeed if underachievers are weeded out (Berger et al., 2010). Proponents of the early college model argue that with effective and properly administered student supports, underrepresented students can be motivated to perform and be successful in college. Students who earn college credits in high school are more likely to enroll in college full time, and complete a college degree. When six or more college
classes are completed prior to high school graduation, students are also more likely to complete college (Berger et al., 2010).

While early and middle college programs have long been in existence in educational communities, the impact on community college retention and graduation is uncertain. Previous research on ECHSs has focused on student academic outcomes including GPA, standardized test scores, and the number of earned college credits (Woodcock & Beal, 2013). Hoffman and Webb (2009, June 11) and Lieberman (2004) have reported graduation rates for ECHS students as higher than graduation rates for students in traditional high schools in studies. Other existing research performed by special interest or philanthropic groups provide research results, which must be highly scrutinized due to biases.

Middle and early college programs were first brought to mainstream attention in the 1930s and 1940s by Leonard Koos. Koos proposed the 6-4-4 plan, which grouped grades 7 through 10 in junior high school, and grades 11 through 14 in junior college. Koos 6-4-4 plan was never fully embraced, so little research is available regarding the effectiveness of the plan. Similar programs including Middle College High School (MCHS) emerged in the 1970s (Kisker, 2006), with the first relevant research evolving as a result. The Bill & Melinda Gates Foundation initiated and implemented the ECHSI in 2002 with over 200 Early College High Schools, which opened by fall of 2009. By 2013, the number of ECHS has grown to over 240 (Woodcock & Beal, 2013). Research on the effectiveness of the ECHS model is limited primarily to qualitative case studies. Thompson and Ongaga (2011) performed student and teacher interviews over a three-month period to help determine student and teacher perspectives on how care ethic supports or limits learning and teaching in an ECHS. In addition, The American Institutes for Research (AIR) and SRI International (SRI) have conducted a majority of research on ECHSI
producing reports for the Bill & Melinda Gates Foundation (Berger et al., 2010). Determining student success, in terms of retention and graduation rates from community college programs must be done intricately and with great scrutiny.

Middle college and early college programs are an intricate coordination between high schools and colleges (typically Community Colleges). Early college programs weave college course credits and high school diploma requirements to allow a student to graduate from high school, and earn an associate’s degree within five years (Born, 2006). Students cite multiple factors for choosing early college programs, including lessening college tuition expenses and completing college requirements sooner (Born, 2006). In addition, two additional benefits of early college programs include providing students a “taste” of college and improving confidence in personal academic abilities (Hughes, Karp, Fermin, & Bailey, as cited in Berger et al., 2010, p. 334).

**Purpose of Study**

This study is intended to explore if and how early college high schools (ECHSs) affect retention and graduation rates of first-year college students, particularly in community colleges. Determining specific factors, which explain why first-year college students decide to continue or leave college after completing an early college program, is a focus. If specific individual or institutional traits demonstrate tendencies for students to leave early, emphasis can be placed on enhancing efforts to rectify the issues.

Reasons for leaving college are influenced by academic factors including grades, unsatisfactory progress, and lack of academic support. Personal factors also contribute to student attrition and include institution not a good fit (personality, environment, faculty, peers, etc.) for student, life events, uncertainty of career path, lack of personal connection, and not meeting
personal needs. Distinguishing between student success and standard graduation rates is difficult (Nitecki, 2011). Graduation rates are calculated based on traditional time periods required to complete a degree. Since community college students leave for varying reasons described above, but often times return later, graduation rates may or may not be an accurate indicator of student success (Hoyt, 1999; Nitecki, 2011). Ultimately, bridging gaps between early college program participation, first-year college retention, and college graduation is a major focus.

**Areas of Concern**

Since many ECHSs collaborate with community colleges (Kisker, 2006) a logical research foundation is to determine the retention and graduation rates of ECHS students from community colleges. Understanding the factors influencing retention and graduation rates will also provide evidence of how effective ECHSs are. Community college retention rates typically vary significantly due to open enrollment policies and diverse student enrollment (Burns, 2010; Byrd & Macdonald, 2005). With inaccuracies amongst community college retention and graduation rates, ECHSs are intended to provide students with college credits as a foundation toward degree completion. Of particular interest is associate degree completion, with community college graduation, and perseverance to university degree completion. Due to limited research on ECHSs, in terms of college retention and degree attainment (Edmunds, 2012), research is necessary to determine whether ECHS interventions are effective in retaining and graduating students with community college degrees. The need for a deeper understanding of ECHS effectiveness and student retention helps pose the following research question.
Research Question

What are the effects or outcomes of early college program interventions on college retention and graduation rates of student participants in an Early College High School?

Theoretical Framework

The Bill & Melinda Gates Foundation initiated and implemented the ECHSI in 2002 (Berger et al., 2010). The new three R’s: rigor, relationships and relevance (Fischetti et al., 2011; Ongaga, 2010) are the foundation for ECHSI. ECHSI is premised on evidence that challenging and rigorous learning experiences, coupled with respectful and supportive school environments are precursors to student success (Ongaga, 2010). The Early College High School model is intended to possess five principles: “purposeful design, professionalism, personalization, college readiness, and powerful teaching and learning” (Edmunds et al., 2010, p. 350). The theory behind the ECSHI requires the five principles be implemented simultaneously. The desired outcome of the ECHS will be negatively impacted without full implementation of the five principles. The ECHS principles also seek intermediate and long-term outcomes. Intermediate outcomes include increased aspirations toward college, and improved student achievement. Long-term outcomes include increased (high school) graduation rates, increased enrollment in college, and increased graduation from college (Edmunds et al., 2010).

Noddings’ (2002) care ethic will be used as a foundation to model the connection between student retention and the importance of relationships established in Early College programs. Strong and positive peer relationships have also been shown to foster academic resiliency when students are faced with challenges (Thompson & Ongaga, 2011). Developing caring and long-term relationships, which contribute to student resiliency, may be linked to retention and graduation in community colleges, and potentially universities.
Organizational theory may be used to assist in understanding how specific academic programs retain students (Nitecki, 2011). Retention theory is used to study why students choose to stay or choose to leave colleges. The student development theory Tinto (1991), psychological model of retention Bean (1990), and Alexander Astin (1991) input-environment-outcome model (as cited in Fike & Fike, 2008 p. 69) all provide the foundation for analysis on factors impacting student retention. Much of Tinto’s (1975) work was grounded in academic and social integration (as cited in Wild & Ebbers, 2002 p. 506). The model demonstrates the level on which a student connects to a college, based on his or her interactions between both academic and social systems of the college will determine persistence in education. Academic competence and college commitment are the two factors, which positively increase student retention (Drew, 1990). Astin (1977, 1993) framed student persistence more on involvement in activities associated with participating in the college experience, interacting with peers or faculty and classroom activities (as cited in Wild & Ebbers, 2002 p. 507). Caution must be taken when analyzing student success data using Organization and Retention theory. Much of this research has been performed in university settings with traditional age students (Fike & Fike, 2008). Organizational theory does however suggest a close relationship between completing early college programs and student retention and graduation rates.

**Definition of Terms**

**Early college high school.** Early college high schools require high school student enrollment in college courses while attending and completing high school graduation requirements (Alaie, 2011). The ECHS is intended to create an environment to increase the number of students who graduate from high school, enroll in, and succeed in postsecondary education (Edmunds, 2012). Early college programs include Middle College, Early College
Schools (ECS), Early College High Schools (ECHSs), and other similarly labeled programs. Throughout this study, ECHS will be used to encompass all programs, primarily for clarity.

**Dual enrollment program.** Dual enrollment programs are a partnership between a school or school district and a higher education institution, which allows high school students to enroll in college courses. The courses are completed for college credit and may or may not also be used for high school credit (Cassidy, Keating, & Young, 2010). Typically, specific placement guidelines, and credit limitations are in place to help ensure student success in both high school and college courses.

**High school.** A school in the U.S., which typically serves students between ages 14-18 and include grades 9-12. The grade levels are typically freshman (9th grade), sophomore (10th), junior (11th), and senior (12th) (High school, n.d.). Many schools offer general academic coursework, with college preparatory courses, while others offer general coursework with additional specialties in trade or specialty areas.

**Community college.** Any institution, which is accredited to award an associate’s of arts or sciences as its highest degree, including two-year colleges and many technical institutes (Kane & Rouse, 1999).

**University.** Institutions of higher learning that typically have multiple colleges including liberal arts, sciences, professional and graduate. A university differs from a college in physical size, diversity of curriculum, and ability to offer professional and graduate programs (University, n.d.).

**Retention.** Maintaining student enrollment in an institution, which is in line with individual student’s goals, periodic adjustment of those goals, and persistence in completing the goals (Wild & Ebbers, 2002).
**Attrition.** Dropping out or discontinuing attendance at a particular educational institution. A distinction must be made between dropout because of academic failure and voluntary withdrawal (Tinto, 1982). Attrition is calculated based on the number of students enrolled at an institution and compared with the number of students who actually complete a degree or program of study.

**Graduation rate.** Program completion rate for students enrolled at an institution. For community colleges, students are expected to complete a program within 150% of the timeframe in which they would typically be expected to complete a certificate or degree (Bailey, Calcagno, Jenkins, Leinbach, & Kienzl, 2006).

**Summary Statement**

ECHSs are typically intended to provide underrepresented students with the opportunity to graduate high school and potentially earn an associate’s degree by the end of grade 13. Understanding the reasons students choose to continue or leave higher education can assist colleges in making informed choices regarding retention efforts. Community colleges generally have high attrition rates due to the nature of the services provided and the populations served. Determining the specific factors, which contribute to individual colleges retention struggles, is ultimately an internal issue. By reviewing research, which analyzes similar institutions, community college administrators can make informed decisions regarding the precise problems apparent in the institution.
Chapter 2: Literature Review

Preparatory courses taken in high school are particularly important to ensure student success once enrolled in college level coursework (An, 2013; Edmunds, 2012). While multiple approaches have evolved to prepare students for college success, none has taken the approach of early college high schools. ECHSs are similar to the dual enrollment model, but ECHSs incorporate the dual enrollment model into the whole structure of the school (Edmunds, 2012). Traditional dual enrollment programs typically allow students to enroll in college courses, which are not offered at the high school level (An, 2013). Students are able to accrue a limited number of college credits through dual enrollment. ECHS, by design, are intended to provide students with the opportunity to complete higher numbers of college credits with the intent of completing an associate’s degree by the end of grade 13. A student in the study by Edmunds (2012) distinguishes the difference between taking dual enrollment courses in high school and enrolling in an early college program: “the thing with the high school is… you’re in high school and you’re taking some colleges classes too. Here [in the early college] you are in college” (as cited in Edmunds, 2012, p. 88). Focus on enhancing academic skills, confidence, and college credit attainment, which assist in future college success and retention are primary goals of ECHS.

Transitioning from High School to College

Many students are lost in the transition between high school and college (Kirst, 2004, as cited in Berger et al., 2010, p. 342). By providing guidance in preparing for college, students and their families become more informed, and the student is less likely to become “lost” in transition from high school to college. Frequently, students attending an ECHS are not intrinsically motivated, and come from families where they are the first to graduate from high school (Born, 2006). The theory, which provides the foundation for two ECHS analyzed by Berger et al.,
(2010), focuses on motivating unengaged or reluctant students. The focus of motivating students is to see themselves as successful participants in the college experience. Student motivation is also highly recognized as a factor leading to college success (Burns, 2010).

In 2009, approximately 85% of high school students in America’s public schools had the opportunity to enroll in college courses prior to graduation (Smith, Fischetti, Fort, Gurley, & Kelly, 2012). Students who earn college credits in high school are more likely to enroll in college full time, persist in college, and complete a 4-year college degree. In addition, students who complete at least six college courses prior to graduating high school will be more likely complete college (Berger et al., 2010). Seventeen early college programs indicated 65% of students had been admitted to 4-year colleges. In addition, the results further indicated 85% of the participants graduated with significant college credit (Alaie, 2011). Another study in 2009 included 3,000 students from 64 early college programs. Eighty six percent of the participants enrolled immediately after high school graduation in postsecondary education. The percentage of students who earned one year of college transfer credit was 44%, while 25% of students earned two years of credit or an associate’s degree (Rosenbaum & Becker, 2011). Early college graduates average 23 college credits by graduation from high school (Edmunds, 2012). Analysis must be performed to understand the impact on community college retention. The relatively high acceptance and credit accumulation of students in the 17 early college programs studied show a positive correlation, predicting college completion. Results from 2009, show 3,000 students graduated from 64 ECHSs with approximately 86% of ECHS graduates moving onto some form of postsecondary education (Woodcock & Beal, 2013). While the results do not specifically indicate higher retention or graduation rates at community colleges, an increase in retention and graduation rates is likely.
Having students attend courses on a college campus empowers the students to perceive themselves as individuals who can successfully manage in a rigorous, adult environment (Berger et al., 2010). Successful transitioning between high school and college is a major focus of the ECHS. Student maturity, and comfort in terms of social integration, dramatically impact student transition and acclimation to college coursework. The student development theory attributed to Tinto (1993) proposes students develop through stages, which begin upon college entry, and are influenced by academic and social integration (as cited in Fike & Fike, 2008, p. 69). The academic and social factors ultimately mold students’ decisions to stay or leave an institution. In addition, Bean (1990) bases his psychological model of retention on factors, which are influenced by environmental variables, and student intention (as cited in Fike & Fike, 2008, p. 69). Using the input-environment-outcome model attributed to Alexander Astin (1991) analysis of output (retention and graduation rates) in terms of inputs (student ability, age, program of study, etc.) can be performed. The downfall to this method is the lack of focus on environmental factors (courses, facilities, faculty, peers, etc.) (as cited in Fike & Fike, 2008, p. 69).

Students must maintain an intricate balance when transitioning from the ECHS to a college campus. The impact on student retention, and ultimately graduation rates at community colleges is directly related to transitional strategies and levels of academic support.

Supports for Learning in the Early College High School

Researchers strongly believe academic preparedness is essential to college success (Byrd & Macdonald, 2005; Fike & Fike, 2008; Fischetti et al., 2011). By providing support services, ECHSs assist students with academic and emotional difficulties. Support services allow students to manage rigorous early college and college curriculums. Every successful educational institution has individual methods, which engage students in learning. Understanding the varying
approaches to engaging students in learning, supports the assertion Kuh et al. (2005) made
acknowledging the lack of a single outline for student success (as cited in Burns, 2010, p. 42).

ECHSs strive to provide strong student supports and small learning environments, which
give students a balanced college experience. The Community College Research Center suggests
ECHSs provide support services including tutoring, mentoring, and college success seminars to
assist students in college courses (Berger et al., 2010). More than 150 ECHS were analyzed
throughout the 2007-2008 school year, with 84% offering formal tutoring. Tutoring was required
for all students by 16% of ECHS analyzed, while 74% of programs indicated tutoring was
required for some students (Rosenbaum & Becker, 2011).

In 2007-2008, 89% of ECHSs reported offering academic or social support classes to
students in areas such as literacy and mathematics (Berger et al., 2010). Support for academic
courses provides the foundation for student retention and graduation. Students with high levels of
math attainment have been shown to have a higher frequency of successfully completing college
(Burns, 2010).

In a study by Born (2006), an Early College Seminar course was analyzed. The level of
support is intense in the early stages of the early college program, while the level of support
decreases as the students grade level progresses. During junior year, students attended four
weekly meetings of 70 minutes each to address issues, collect assignments, answer student
questions, and hear student complaints. During senior year, the seminar met for 40 minutes four
times per week, where the focus was primarily on individual conferencing addressing
progression toward completing high school and college requirements. For students in the 13th
grade formal supports were not in place (Born, 2006,). Analysis of grade-to-grade progression
rates determined the average rate of progression from 12th grade/graduation to 13th grade was
87% (Berger et al., 2010). In addition, students typically completed the 13th grade with higher grade point averages than the general population of similar college students (Born, 2006).

Depending on the structure of supports provided in both the early and college environments, a connection between success and failure may be drawn. Students transitioning from Middle College High School (MCHS) to college learned “they either learn or they fail” (Born, 2006, p. 52). While attending MCHS, students received support through the Early College Seminar. Teachers in the Early College Seminar provided reading and writing assistance, time to seek help and catch up on studies, and express the frustrations of the early college program. The formal support students receive while attending MCHS is not carried over to the fifth year of the early college program (Born, 2006).

**Characteristics of Successful Early College High Schools**

Noddings’ (2002) ethics of care provides a conceptual framework to explore small learning communities and the close relationships between students and teachers (Thompson & Ongaga, 2011). Teachers serve as positive role models, and work diligently to boost student self-esteem (Born, 2006). Students presented with challenging courses in small, personalized learning communities demonstrate higher academic achievement (Thompson & Ongaga, 2011) and typically possess the skills to face new challenges (Ongaga, 2010). Small learning communities, which generate extensive teacher-student collaboration, have exhibited lower student dropout rates (Thompson & Ongaga, 2011). In 2007-08 ECHS averaged 211 students (Berger et al., 2010), which follows the principle of small learning environments, helping foster caring relationships.

Caring relationships have been identified as a significant contributing factor to success in early college programs. The opportunity to feel cared for, and make worthwhile contributions to
the educational process helps with student retention. Through analyzing student responses in a case study performed at Maple Early College High School (MECHS), Ongaga (2010) noted how significantly caring relationships contribute to academic success.

A descriptive single case study was used to document student and teacher relationships primarily founded in Noddings’ care ethic (Thompson & Ongaga, 2011). Sixteen students participated in this pilot study at Hudson Early College High School (HECHS). Teacher sentiment of care and responsibility for student success demonstrates the reciprocity of relationship building, which was modeled at HECHS. Setting high expectations’, establishing caring relationships, and making learning exciting and challenging (Thompson & Ongaga, 2011) is essential to creating the drive and passion for learning, which is necessary to successfully complete a college degree. Providing academic support while in the early college program and developing student resourcefulness assists in college success. While the transition from early college programs to college can still be challenging, both socially and academically (Thompson & Ongaga, 2011), evidence is mounting, demonstrating how caring relationships help justify the statement: “the promise of Early College High School is indisputable” (Ongaga, 2010, p. 386).

Ensuring commitments by school districts and funding sources will be critical in maintaining the positive results modeled by HECHS and MECHS. The major challenges students faced were rigor of coursework, lack of extracurricular activities, and social identity (Ongaga, 2010). Adapting to the rigorous coursework was the most challenging obstacle for most students who struggled academically. Students felt engaged in classes where teachers made learning fun, and were allowed to be involved in the learning process. Through the development of caring and trusting relationships, the shift from early college programs to college can be relatively seamless.
Factors Influencing Retention and Graduation

Community colleges are unique in terms of retention and graduation rates. Attrition rates from first to second year at community colleges average 41%, while 34% is the persistence-to-degree rate (Fike, 2008). Less than 50% of students who enroll in a community college successfully complete a degree or certificate within eight years (Burns, 2010). Realizing students may attain personal educational goals before graduation is not a failure on the part of the institution (Drew, 1990). Retention and graduation rates may differ drastically between community colleges and universities. Understanding factors, which affect community college retention, is paramount in accurately interpreting retention rates.

Comparing the community college graduation rate with a four-year university indicates graduation rates are comparable. The graduation rates, seven or more years (1996-2006) after initial enrollment at the university were 48.2% to 52.6% (Northern Michigan University, n.d.). While the university had slightly higher retention rates, multiple factors including open enrollment and cost effectiveness may negatively affect community colleges.

Community colleges attract students who may not be goal oriented, or academically prepared for college success. Focus must be on predictors of student retention to determine the needs of students and the institution. Multiple factors affect community college graduation and retention rates, which are not typically evident at universities that award bachelor’s degrees. Student populations are diverse due to open enrollment procedures at community colleges. Student success is linked to strong high school preparation, college enrollment immediately following high school, parents attended college, and ability to attend full-time without interruption (Burns, 2010).
These factors along with social connection to networks, which provide information on college, encompass social capital. Students with social capital are more likely to seek out and use college support services. Conversely, educational attainment for community college students is often negatively impacted by caring for children at home, single parenting, financial struggles, first generation college student, attending college part-time, and working full-time in addition to attending college classes (Burns, 2010). Often students with one or more obstacles to college success will stop attending for a period of time, but later have a successful experience (Hoyt, 1999). These students often are not accounted in retention statistics. Due to the relative short time frames in which many studies are conducted, students who leave school, but then return later, are not included in retention data. Attrition rates for four-year college freshman are approximately 40 percent with community college retention rates lower (Drew, 1990). Reasons for non-persistence vary, but roughly, 15 percent of dropouts are involuntary. Degree completion within a specified time-period constitutes student graduation, but may not be indicative of student success. Family and work obligations, part-time status, delays in course completion, loss of credits due to time restraints or transfer may skew completion rates (Nitecki, 2011). Ultimately, uncertainty remains whether engaging educational experiences can counter the challenges faced by high-risk students.

Building relationships with college students and faculty in the ECHS will help create the network of resources, which greatly increase the chances for college success. Forming social bonds with peers tends to increase retention. Student involvement with both faculty and peers also directly increases retention (Drew, 1990).

Consideration must always remain focused on the reality that some students may not successfully complete high school graduation and/or college academic requirements (Thompson
One final factor to consider is the possibility that not all early college program participants have constructive experiences (Alaie, 2011). Students who fail an early college experience typically encounter future academic struggles when attending college courses. Academic struggles drastically reduce student retention.

While community colleges feel the effects of attrition on enrollment, factors contributing to retaining or losing students are often overlooked. Fike and Fike (2008) used a quantitative, retrospective study to analyze predictors, which influence student retention in a community college. The study examined data from a four-year period between 2001 and 2004. The sample was comprised of 9,200 student records for first-time-in-college (FTIC) students. After coding for missing values, data for 8,945 students (92.7% of the sample population) were analyzed. Based on existing retention theories, 10 variables were identified as predictors of student retention: gender, age, and ethnicity; completion of a developmental mathematics, reading, or writing course; participation in Student Support Services; receipt of financial aid; enrollment in Internet courses; credit hours enrolled in first semester, credit hours dropped in first semester; and parents education level.

One-third of FTIC students who enrolled during the fall did not enroll in spring classes (Fike & Fike, 2008). Furthermore, over half of FTIC students who enrolled in fall classes did not reenroll the following fall. In terms of the predictors for retention, students who successfully completed a developmental reading course had the highest positive correlation with retention. For all years combined, the correlation for fall to spring retention for students who passed a developmental reading course was $r = .409, p < .001, n = 2,042$. Student retention, fall to fall for students who passed a developmental reading course was $r = .403, p < .001, n = 2,042$. An assumption based on this finding is that students learned the value of reading and the importance
of rigorous and structured learning. Other predictors with a positive correlation to retention included successful completion of a developmental mathematics course, receiving financial aid, taking an Internet course, and participation in student support services. Student age and semester hours dropped during the first semester had a negative correlation to retention. The importance of developmental coursework to college success was a key finding in terms of student retention (Fike & Fike, 2008). By understanding how developmental coursework sets the foundation for student success, colleges can increase student retention. Forty-one percent of students entering community college are underprepared for college level coursework in at least one of the following subjects: reading, writing, or math (Byrd & MacDonald, 2005). Another noteworthy finding shows students who take online courses are more likely to continue taking courses in the future. The specific reasons for this are unknown, but convenience in course scheduling plays an important role.

The research base for early college programs, specifically in terms of retention and graduation rates is somewhat limited (Edmunds, 2012). Since the expansion of early colleges in 2002, research is growing, but is limited in connecting retention and graduation rates. While this study intended to draw from statistical data indicating trends between early college programs and community college retention and graduation, a definitive answer to the research question is still unclear.
Chapter 3: Results and Analysis Relevant to the Problem

Empirical research is limited in linking ECHSs to community college retention and graduation rates (Fischetti et al., 2011). Even so, conclusions may be drawn based on the guidelines in which the ECHS is founded. ECHSs are designed with rigorous coursework, dedicated and caring faculty (Thompson & Ongaga, 2011), and support services intended to increase student achievement. These guidelines directly correlate with factors associated with community college retention and graduation. While relevant research with quantitative methods is necessary for future analysis, a larger hurdle of financial feasibility may significantly alter future research findings. Due to the relatively small size of ECHS, maintaining a large number of small programs may become financially unattainable (Berger et al, 2010). Hence, future findings based on ECHS with small populations may not be realistic due to financial constraints.

Caring relationships emerged as the prominent theme, which contributed to students’ academic success. Teacher-Student, Peer, and Student-Parent relationships each were caring, trustworthy, and challenging. The sense of institutional commitment is developed through interaction with faculty and peer mentors, and involvement in institutional social activities (Drew, 1990). Strong and positive peer relationships have also been shown to foster academic resiliency when students are faced with challenges (Thompson & Ongaga, 2011). Developing caring and long-term relationships, which contribute to student resiliency, may contribute to retention and graduation in community colleges, and potentially universities (Hoyt, 1999).

Student connection to the institution is a strong predictor of student retention. Students who are involved academically and socially develop more relationships, which are personal, and typically, continue through either graduation or achievement of personal goals. The sum of a student’s education and social experiences at an institution equate to the student’s level of
institutional commitment (Nitecki, 2011). Ultimately, student commitment to personal goals and institutional satisfaction provide insight into retention or attrition tendencies.

**Suggestions for Administrators and Teachers**

Developing a successful ECHS, where student success is of key importance, depends on great teaching. Schools must attract and develop great teachers for early college programs to generate successful students (Thompson & Ongaga, 2011). Successful teachers in early college programs care about students. Teachers in ECHS, when provided with autonomous opportunities to engage in innovative and effective instructional methods, have the potential to create highly meaningful, caring, and professional educational communities (Edmunds et al., 2010; Thompson & Ongaga, 2011). Teaching in an ECHS provides teachers the opportunity to gain an enhanced role (Lieberman, 2004). The role includes providing challenging, caring, and rewarding instruction so students can meet high school requirements and attain college credit in a college setting. In addition, professional development is essential to provide adequate training for teachers in advising (Byrd & Macdonald, 2005) and teaching students at college level.

Developing and maintaining strong, open, and meaningful relationships between early college and college administration and faculty is essential for effective ECHS. The exchange of information between early college teachers and college faculty creates the college-bound culture, which is the basis for ECHS. The benefits to exchanging information include instructional and content consistency, understanding college policies, and professional relationships between faculty and students (Thompson & Ongaga, 2011). The ultimate impact ECHSs have in the future, in terms of sustainability and improved student success, are directly dependent on these factors.
Chapter 4: Recommendations and Conclusion

Recommended Research Rationale

Previous research on the ECHS is typically limited to qualitative case studies, which often are pilot studies analyzing early college effectiveness. Quantitative data representing graduation and retention rates in ECHSs is currently lacking. Performing research, which will provide statistical evidence of actual graduation and retention rates in one specific ECHS will be the focus of this study. This purpose of this study is twofold. First, the study will contribute valuable early research into the college graduation and retention rates of students participating in an ECHS. Second, to track the rate of student retention and graduation from the Calumet Early College High School (CECHS) program as this program is in the infancy stage. Students, in traditional ECHSs, are under-represented with poor academic achievement and low socio-economic background. The students in the CECHS are high academic achievers with varying socio-economic backgrounds.

CECHS is a small pilot program in Michigan’s Upper Peninsula. Calumet Public Schools, in conjunction with Gogebic Community College have developed a partnership to create an early college program for eligible high school juniors (grade 11), and seniors (grade 12) located at Calumet High School. The program allows students to take college courses while enrolled in high school with the intention of having students complete an associate’s degree after a 5th year of high school. Students must complete COMPASS placement testing, earning placements into College Composition I in English and College Algebra in mathematics to be eligible for the early college program. Students currently in this program have academic performance, which labels them as college bound, with many students already having earned advanced placement credit. Edmunds (2012) cites rigor in high school coursework as the most
important predictor of college success particularly when the courses begin in ninth grade. The CECHS is therefore, significantly different from most other ECHSs, which serve underachieving or underrepresented students. An (2013) proposes equal access to dual enrollment programs could minimize gaps in college student retention and graduation between high and low socio-economic students. CECHS does not particularly target underrepresented or low-socioeconomic students, but students with varying economic and educational backgrounds may be represented. Eighty-four students are enrolled in the CECHS for the 2013-2014 school year. The number of seniors is 49 with 35 juniors.

The CECHS is in the infancy stage, and therefore, limited comparisons can be made with other programs, which have followed the ECHS model established by the Gate’s Foundation (Berger et al., 2010). The CECHS program can provide valuable insight into the number of students who complete an early college program by graduating with an associate’s degree or transferring to another college or university to complete a program of study. Tracking program effectiveness through retention and graduation rates and student insight will provide data, which are lacking in most other studies of ECHSs.

**Method**

**Participants**

Students from the CECHS will participate in this study. The sample is convenient, but simple random sampling will minimize researcher bias by giving each student an equal chance of being selected (Patten, 2009). The sample will attempt to include all participants in this specific early college program pending participant mortality. A clear definition of the population (Ross, Morrison, & Lowther, 2005) entails the following attributes. The students will all be between the age of 15 and 18 years old. Demographic information will include gender, age, high school GPA,
ACT score, parent education level, and socio-economic status. Student participation will be voluntary with no compensation or reward for cooperation. There should be no consequential effect on any student’s participation. A student may voluntarily participate in the study and withdraw at any time. Each student will be informed of the purpose of the study, along with any possible benefits or harm.

For convenience, intact groups will be analyzed, which threatens internal validity (Patten, 2009). While the groups are not random, analyzing the CECHS, which originated with high achieving students, paves the way for research on student retention and success in one early college program and potential for further college completion.

**Approach**

To help answer the question what factors make a student successful from early college entry to graduation a Mixed Methods Design will be used with the understanding qualitative and quantitative research can complement each other (Patten, 2009; Sandelowski, Voils, Barroso, 2006). Collecting data using multiple approaches including student interviews, retention and graduation rates, and student surveys will allow for quantitative evidence, along with qualitative narratives. An experimental design will help to validate previous research findings and determine the validity and reliability of predictors for early college student retention and completion. In addition, narrative inquiry is another common method, which is accepted in educational research. With narrative inquiry, student voices help provide direction for educational improvement (Woodcock & Beal, 2013). This study looks to determine the retention and graduation rates of students participating in the CECHS. In addition, determining themes, which positively or negatively affect student retention, will complement the research. Ongaga (2010) points out the importance in the use of student as the unit of analysis. Case studies, which evaluate entire
ECHSs, often minimize the roles of each individual within the institution. Student interviews and surveys will help gain student feedback and insight. Tracking student completion and attrition rates from the CECHS will provide data of student retention and graduation rates. Narrative inquiry allows for student storytelling, which describe events and experiences throughout the early college program. Understanding factors, which lead to student retention or attrition will allow for deeper understanding of the findings.

**Instrumentation**

Multiple instruments for collecting data on student perceptions, and experiences, which may influence retention and graduation rates, will be used. Factors to consider when administering research assessments are ease of administration; time to administer; clarity of directions; ease of scoring; cost; reliability/validity data availability (Fraenkel & Wallen, 1993).

Pre and post-questionnaires will be conducted to gather student perception prior to program entry and following program completion or discontinuation. Student reported perceptions would model trends, which provide evidence of higher retention rates, but may lack reliability due to student bias. The pre-program questionnaire will measure student expectations in terms of self-performance and benefits of program participation. The post-program questionnaire will measure whether the students’ expectations were met.

Random follow-up student interviews will be conducted after graduation from CECHS, transfer to university, discontinuation of enrollment (dropout), or completion of early college, but no further college. The focus will be on answering the question what factors led you to your decision to stay or leave CECHS. Open-ended questions (Woodcock & Beal, 2013) including, but not limited to the following will open each interview: (a) what prompted you to attend CECHS? (b) what were your favorite aspects of your CECHS experience?; (c) what were your
least favorite aspects of your CECHS experience?; (d) if you could change anything about your high school experience, what would it be? (e) Do you feel you were prepared for college after CECHS? Student responses may guide the interview, which could diverge from the questions above. A major focus will be on answering the question what makes a student successful from entry to graduation.

**Data needs**

Raw data collection will entail results of student pre-and post-surveys, along with successful and unsuccessful early college completion rates. Evidence of student perceptions will be computed to help determine what factors most highly influence student decisions to stay or leave the early college program. Retention and graduation rates will be collected and analyzed to help answer the following questions. Will the students who earn college credit in high school enroll in and finish a college program? How many students leave the CECHS completing grade 13 and an associate’s degree? How many students complete CECHS through grade 13, do not complete an associate’s degree, but enroll in a college to complete a degree? How many students complete CECHS through grade 13, do not complete an associate’s degree, and do not enroll in college? How many students begin attending CECHS, but leave either by the time of high school graduation, or before completion of grade 13? Analyzing the data collected from the responses to the questions above will develop themes to help understand the factors, which cause student to successfully complete or drop out of the CECHS program.

**Analytic techniques**

Statistical analysis will be used to determine retention and graduation rates. Calculating the retention rate will done by dividing the number of students who remain enrolled as students between year one (11th grade) and year two (12th grade) by the total number of students enrolled
during this timeframe. A second retention rate will then be calculated between year two (12th grade) and year three (13th grade). Graduation rates will be calculated based on the number of students who successfully complete the degree requirements to earn an associate’s degree by the end of 13th grade. Another important rate to determine is transfer retention rate. While it may not be feasible to track where each student who leaves CECHS to transfer to another institution goes, follow-up surveys will help to determine the approximate transfer rate for those student who do not complete the CECHS program.

**Plan for Interpreting Results**

To interpret the results from this study a formal research report will be written. Data will be differentiated in charts to help identify themes. Statistical analysis will be performed to determine the significance of the results. Data will be analyzed and sorted using demographic factors, including gender, age, and parental education level. Student responses from individual interviews will be audio-recorded, and then transcribed verbatim to allow for accurate interpretation of context and meaning of student responses.

Caution must be exercised when interpreting the results in terms of external validity. Answering the question to whom and under what circumstances can the results be generalized (Patten, 2009) shows limited generalizability, which minimizes external validity. While the results of this study will contribute to previous research on early college graduation and retention rates, individuals must use caution when generalizing the results to all programs. Major difference in demographic traits between Calumet Early College High School students and typical early college students may influence the generalizability of these results. A distinct difference between typical ECHSs and CECHS is the distinct mission of the ECHS model to recruit first-generation and other underrepresented students to the program (Woodcock & Beal,
2013), whereas CECHS is comprised of high academic achieving students. Another area of caution is recognizing the sample from this study is convenient, and not completely random.

**Expected Results**

Expected results would show students who have a more clearly defined career plan or program of study will more frequently graduate from the CECHS. Students who are less sure of their career path will have higher attrition rates (Hoyt, 1999). While most of the CECHS students are college bound, retention rates will vary due to students knowing whether they wish to pursue a college education or not. Having a planned program of study and career path will help retain focused students with an educational plan. Undecided students may complete CECHS, transfer, or drop out, depending on their social experience and level of interaction with instructors (Thompson & Ongaga, 2011). CECHS students enter the program with high academic achievement. Therefore, it may be predicted that CECHS student retention and graduation from a community college, will be higher, than typical underrepresented students from traditional early college programs.

In addition, students who experience more connection to the experience and caring instructors will be more likely to remain in the program through graduation or successful transfer to another college or university (Noddings, 2002). Students who experience caring relationships generally will be more successful in academic experiences. There will be a difference in retention rates between early college students receiving personalized interactions from teachers as compared to students receiving little to no personalized interactions (Thompson & Ongaga, 2011).
Areas for Further Research

Compiling more evidence to track ECHS completion rates is necessary. Quantitative data is necessary to determine retention and graduation rates. The data must be analyzed using specific criteria, which define timeframes of successful retention or graduation (Nitecki, 2011). Often time’s students are not included in retention or graduation data, if the student takes longer to complete a degree than the average rate of completion.

To gain a deeper understanding of the effects of ECHSs on community college retention and graduation rates, further research is required. More qualitative studies are necessary to analyze factors, which contribute to non-completion of these programs. Student surveys and interviews can help identify factors, which student identify as barriers to retention and graduation (Patten, 2009). As most ECHSs are linked to community colleges, further research in community college and early college retention is necessary (Wild & Ebbers, 2002). In addition, conducting random studies across ECHSs will reduce researcher and sample bias (Patten, 2009).

Previous research grounds ECHSs in theory and practice, but research on overall impact of ECHSs on retention and graduation rates is still limited (Edmunds, 2012). Understanding the impact ECHSs have on student success and traditional high school reform (Smith et al., 2012) also require further research. In instances where students are unsuccessful, additional research is necessary to examine unsuccessful ECHS experiences (Alaie, 2011). Barriers inhibiting student success in ECHSs needs to be exposed and analyzed. Many of these barriers may be exposed by collecting data through student surveys and interviews. Listening to student voices can provide substantial insight to provide direction for educational improvement (Woodcock & Beal, 2013).

Early college high schools seem to improve high school graduation rates, and may improve college graduation rates, but operational expenses could make sustaining ECHS difficult
(Berger et al., 2010). Philanthropic foundations such as The Gates Foundation have provided much of the startup funding required for ECHSs, but local school districts cover most costs, such as tuition and fees (Woodcock & Beal, 2013). Future funding will dictate the feasibility of small, highly structured, and rigorous ECHSs. Research will be necessary to track and understand whether financial implications play a role in the success or failure of ECHSs in the future.

Further research into the reasons why developmental coursework, online courses, and financial aid improve student retention is necessary. Future studies using an experimental design will be beneficial to validate the research findings, and more accurately determine the reliability of predictors for student retention.

**Summary and Conclusion**

ECHSs have continually expanded in the U.S. since 2002, with the inception of the ECHSI (Edmunds, et al., 2010). ECHSs provide students with rigorous and challenging coursework, and help set the foundation for academic success. ECSHs help students establish college readiness, credit accumulation, and potentially the tendency for students to either complete an early college program or transfer courses, which apply to a degree at another institution (Woodcock & Beal, 2013). Students who experience individual attention and develop close relationships with teachers will most likely have a positive and successful ECHS experience (Fischetti et al., 2011). Providing ECHS opportunities to underrepresented students may also help close the academic disparity between high and low socio economic students (An, 2013). Gathering continual evidence of individual student experiences in early college programs will also help explain the causes of student attrition and retention in ECHSs. While research efforts continually attempt to confirm theoretical models of student attrition and predict
retention, efforts are incomplete, and variation in student retention rates remained largely unexplained (Hoyt, 1999).
References


