

College and Career Academies in Georgia: A Pathway to
Improved Educational Success in Fayette County?

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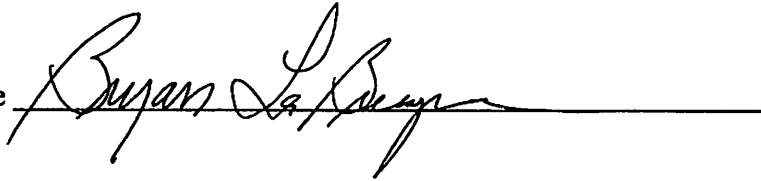
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ABSTRACT

Since the 1980s, the concept of charter schools has emerged as an alternative to traditional public education. In 2000, President Bush breathed new life into this concept by advocating charter schools as part of his long-term strategy to improve education nation-wide. Simultaneously, state policy agendas began emerging with similar strategies. Georgia, striving to improve its standing among state educational agencies, has utilized the charter school concept to augment its current educational policies. Recently, Georgia voters have had the opportunity to express their interest in expanding this program throughout the state.

While several different forms of charter schools have been developed over time, one specific version has witnessed a recent upswing in the state of Georgia: career/technical education schools at the secondary level, often referred to as College and Career Academies. Currently, nearly thirty such schools are either operating in Georgia or have been recently chartered. Among them, one specific school –the Georgia Central Education Center in Coweta County (CEC) – claims to be highly successful and as a result, is being touted as a model for other academies to replicate.

The basis for the CEC’s claim of success is represented by two significant criteria: 1) improving student academic achievement, and 2) preparing students for entry into the workforce. While each of these criteria provides a strong measure of success, differing demographics, community needs and employer needs could dictate that current CEC accomplishment, and thus its model may not be entirely appropriate at every location or transferable from school to school.

Amid this landscape, a “grass roots” campaign has begun in Fayette County, Georgia to introduce a Central Education Center-type College and Career Academy within the county’s borders. The objective of this research is to assess the potential impact of, and barriers to, implementing a College and Career Academy – similar to the CEC - in Fayette County, GA, within the next several years.

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I would also like to acknowledge two key figures in developing the basis for this dissertation: Councilwoman Kim Learnard, for her unending energy and optimism while working to continually improve the standard of living and educational success for residents of Fayette County, and Mr. Mark Whitlock, CEO of Coweta CEC, for his complete willingness to share successes and failures while developing and maintaining Coweta County’s highly regarded Central Education Center.

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DEDICATION

This dissertation is dedicated to my loving wife Pam, who has stuck with me through these many years, putting up with my career and educational ventures. Without her love and support I would have never been able to consider achieving those challenging goals.

LIST OF ACRONYMS

AYP:	Adequate Yearly Progress
DOE:	Department of Education
CCA:	College and Career Academy
CEC:	Georgia Central Education Center
CTE:	Career Technical Education
CTAE:	Career, Technical and Agricultural Education
FCDA:	Fayette County Development Authority
ELCS:	Employer-Linked Charter School
FTE:	Full-time Equivalent
HJIAA:	Hartsfield-Jackson Atlanta International Airport
HOPE:	Helping Outstanding Students Educationally
LEA:	Local Educational Agencies
NAF:	National Academy Foundation
NCEE:	National Commission on Excellence in Education
NCLB:	No Child Left Behind Act of 2001
SAT:	Scholastic Aptitude Test
SLC:	Small Learning Communities
TCSG:	Technical College System of Georgia
USG:	University System of Georgia

Chapter I

INTRODUCTION

Education in America has undergone dramatic changes since the early days of its existence. Until the 1800s, education was generally privately funded and as a result, was primarily limited to the wealthy. Support for the concept of publicly funded education, available to all, began taking root by the middle part of the 19th century. Through the ensuing years, frequent educational reform movements gained notoriety and support with a myriad of initiatives, and varying degrees of success. In the 1980s, the charter school concept emerged as an alternative to traditional public education. Charter school support has been steadily growing since then and was bolstered by President Bush as part of his long-term strategy to improve education nationwide. With presidential support, many states began investigating the benefits of such a program. Because public education in the United States is under the authority of localized school districts, wide-spread expansion of this concept has been evolutionary, not revolutionary. The state of Georgia, striving to improve its standing among state educational agencies, is currently among a number of states utilizing the charter school concept to augment its current educational policies. It has in fact, leapt to the forefront of United States (U.S.) deploying a specific version of charter school: career/technical education schools at the secondary level, often referred to as College and Career Academies. Currently, over 27 such schools are either operating in Georgia or have been recently chartered.

Among the College and Career Academies in the state, the Georgia Central Education Center (CEC), located in Coweta County has been in existence the longest. It boasts substantial improvement in student academic performance as well as claims that its graduates have become better prepared for entry into the workforce.

Fayette County, which adjoins Coweta County, has been observing the progress of the CEC since its inception and recently, a “grass roots” campaign has begun to consider a Central Education Center-type College and Career Academy within the county’s borders.

The objective of this policy research/dissertation is to assess the potential impact of, and barriers to, implementing a College and Career Academy – similar to the CEC - in Fayette County, Georgia (GA), within the next several years. Specifically:

Would establishing College and Career Academy in Fayette County, similar to the CEC in Coweta County, be an *efficient* and *effective* form of education for its constituency?

The remainder of this chapter introduces the reader to several foundational concepts necessary to better understand the basis and impact of this research question.

Charter Schools Defined

Charter schools have become increasingly popular alternatives to the more traditional public school systems. Under a charter school program, the governance process, which includes administration, funding, and accountability, is different from the more conventional state and local models. Educational charters, which are the basis for governance, are written documents between specific schools and governing bodies that codify the responsibilities and goals/objectives of both parties. Typically, charter schools

establish their own governing boards consisting of local educators, administrators, parents, and community representatives (Wohlsetter and Anderson 1994, 487). Similar to the more standard educational system, student participation is free, often paid for by a combination of public funds and private donations which flow directly from the granting authority to the school, with little or no restrictions from that authority. Consequently, the granting authority's annual educational budget requires significant adjustment to accommodate the shifting of funds from the local school system to the charter school. This is routinely accomplished utilizing Full-Time Equivalent (FTE) student numbers and some form of *pro rata* allocation. Quite often, because funding creates political controversy, this particular issue can, and does, act as a barrier to establishing charters schools.

The development and expansion of charter schools has been an evolving process over the past thirty years. Notwithstanding each individual school's level within the evolutionary process, several key characteristics appear to be consistent among the majority of such schools. Nathan (1998, 500), in his study of the benefits of charter schools, enumerates many of these characteristics. According to Nathan, the preponderance of charter schools: 1) specify that charter schools be non-sectarian and require no admissions testing; 2) allow state and local governing bodies to authorize creation of school charters; 3) shift responsibility and accountability for student performance and school goals to the established board and away from granting authorities; 4) permit families to select schools rather than being assigned; 5) require that the charter school be responsible for improved student achievement over a 3-5 year

period; and 6) require that average per-pupil funding follow that student to the charter school.

As an evolving educational structure, these characteristics provide a strong foundation for a successful venture and should not be overlooked in the earliest development of the program.

Trends and Background of Charter Schools in America

Origins - The public charter school movement emanated from a blossoming education reform movement in the 1970s and 1980s. Early reform movements involved vouchers, magnet schools, small learning communities, and public school “choice.” There is considerable debate over how the charter idea gained footing but there is little debate over where and when the official “charter movement” began. After experiencing several of the aforementioned movements, parents in St. Paul, Minnesota were less than satisfied (Knaak and Knaak 2013, 45) resulting in the State of Minnesota passing the first charter school law in 1991, which is still viewed as the top law of its kind among the states (NAPCS 2013).

Expansion – Over the 20 or so years since inception, the number of charter schools has ballooned to over 6,000 nationwide, educating over 2.28 million students in the 2012-2013 academic school year alone. Forty-two of the 50 states now incorporate some form of charter school law, with only the states of Vermont, West Virginia, Kentucky, Alabama, Nebraska, South Dakota, North Dakota, and Montana, holding out. While the vast majority of states authorize charter schools in their respective public school systems, the western states appear to utilize this option at a greater rate. According to the National Alliance for Public Charter Schools (NAPCS), Arizona holds

the highest ratio of charters schools to public schools in the nation at 24.5%. The remaining western states average just over 9%, compared to eastern states which average closer to 4%. Among the eastern states, only Ohio and Florida reach double-digit percentages (NAPCS 2013).

Recent Status – Notwithstanding the steady and successful growth of charters schools in America, the concept is not without its naysayers. Among the areas of concern include school and student performance, funding impacts, accountability, and the risk of increased student segregation.

Trends and Background of Charter Schools in Georgia

Origins – In 1993 the Georgia State Legislature passed the first in a series of laws/constitutional amendments allowing the introduction of charter schools into the state. This initial piece of legislation was limited to converting existing public schools to “chartered” public schools. Three years later the state legislature passed a more broad law authorizing the introduction of start-up charter schools. The first of these start-up charter schools opened its doors in 2000. Eight years later, motivated by the *No Child Left Behind Act of 2001*, and attempting to assist school districts which found themselves stymied by local education agencies (LEAs), the Georgia State Legislature passed a new charter law which established a state commission with the authority to grant charters outside the LEA process. This law quickly created irritation among school districts that had traditionally enjoyed significant local latitude on education. A lawsuit was brought to the Georgia Supreme Court which ruled the law unconstitutional in 2011. Barely a year later the legislature amended the state constitution by allowing the existence of a state authorizing commission, thus overriding the court’s decision. Embracing the new

charter programs, the Georgia Department of Education established the following as the mission of the Georgia charter school program:

“Improving student achievement by expanding public school options through the development of high quality charter schools” (Georgia Department of Education 2014).

To achieve this mission, Georgia charter schools utilize three basic tenets: innovation, choice, and competition.

Expansion – Over the past 20 years charter school growth in Georgia has been significant, though slowing, and has outpaced the national movement as a whole. Expansion has been dictated by legislative support, county needs and local education authorities’ desires. In addition, in the past decade both the governor’s office and the lieutenant governor’s office have been strong proponents of the charter school movement in Georgia.

Recent Status - Georgia promotes two separate types of charter school: 1) schools with separate and individual charters (charter schools) of which several sub-types exist, and 2) schools which operate under a system charter but do not enjoy individual charters (charter system schools). While Georgia recognizes both versions as charter schools (bringing its total count to 314), the National Alliance for Public Charter Schools only recognizes those schools which employ individual and separate charters (numbering 108). Among those with separate charters, Georgia’s College and Career Academies represent nearly 25% of the NAPCS recognized charter schools in the state.

College and Career Academies

Enrollment in vocational/technical schools has declined since the late 1990s and the reasons for the decline are varied and, for the most part, understandable. First, parents are more focused on post-secondary education, particularly at the baccalaureate level (Stern, Dayton and Raby 2010, 23). There appears to be good reason for their focus. From a purely financial perspective, the financial return on investment of a college education is well documented (Golden and Katz 2008). In addition, 17 states have enacted merit-based scholarships to broaden access to higher education and incentivize students to attend college within their state borders. These programs are funded in several ways including lotteries, revenues, and taxes. In Georgia, the HOPE scholarship has provided new opportunity to a large pool of students who, prior to its inception, would not have found college affordable. HOPE (Helping Outstanding Pupils Educationally) is a state sponsored scholarship grant program which rewards students that demonstrate academic achievement in high school and college. Second, the turn of the century witnessed a steady increase in a “stigma” associated with technical secondary education (Castellano, Stringfield, and Stone 2001; Westberry 2001). Career-track secondary education is often associated with disabled students (U.S. Department of Education 2004, 51) or students with low aspirations or struggling to succeed in college-level work. Third, economic constraints and funding have further reduced the availability of industrial education classes in many counties.

To counteract this decline, College and Career Academies (CCAs) are becoming more and more popular in Georgia. Unlike the initial career academy movement begun in California and Pennsylvania which involved a school-within-a-school concept,

Georgia's CCAs have utilized a combination of both career academy and charter schools legislation. These individually chartered and separately housed schools coordinate a coalition among many varied stakeholders to better align the workforce needs to student outcomes.

There are currently 27 CCAs operating in the state of Georgia, most less than 5 years old. Each school has a different curriculum depending upon the varied needs of their individual communities.

Alternative Approaches: Apprenticeships and CTAE in Secondary Schools

Career/Technical Education (CTE) facilities such as College and Career Academies and career academies in general, are not the only avenue towards a more vocationally directed education available to high school students. Apprenticeships have a long and storied past among businesses, both small and large. In the early 1990s, the idea of youth apprenticeships experienced some resurgence. Employers began recognizing that advancements in technology had reduced the need for unskilled workers in their firms, while simultaneously increasing the need for semi-skilled and highly skilled labor (Packert 1996, 682). During this same period, secondary education in the U.S. has, for the most part, moved further from providing technically trained workers in favor of college prepared graduates, leaving such workers in short supply. Apprenticeship programs, and specifically youth apprenticeship programs, have been re-developed to help fill the void left by secondary education and act as a less encompassing alternative to technically focused charter schools. Contrary to the early view of apprenticeships depicted by writers such as Charles Dickens (*Oliver Twist*), modern apprentice programs are an expanded partnership between schools, communities and local businesses with the

intent of supplementing the student's academic studies with hands-on training. While CCAs themselves provide a mix of academic and skills training, apprenticeships are different as they are essentially jobs, and the apprentices are employees. This so called "school-to-work" transition program has been gaining traction nationwide since the mid-1990s and was initialized in Georgia in 1996, following passage of Georgia Code #20-2-161.2., in 1992. This code became the legal foundation for collaboration between the Georgia Department of Labor and the Georgia Department of Education to develop standards necessary to initiate a youth apprenticeship program in Georgia (Smith 1997, 1). While participation in these programs has been relatively light, it remains an option for students statewide.

In addition to Georgia's youth apprenticeship program, the Georgia Department of Education administers the state's secondary career, technical and agriculture education programs. The Career, Technical and Agricultural Education (CTAE) Division of the Georgia Department of Education (GaDOE) boasts 180 local systems and nearly 525,000 high school participants (Georgia Department of Education 2013, 2). The CTAE program was incorporated into the state's educational program as a response to the national educational reform movement and the *No Child Left Behind Act of 2001*. It has recently been re-emphasized by the Georgia State Legislature via House Bill 186, mandating career pathways for all students in Georgia high schools beginning in the 2013-2014 school year. The CTAE program, as established, instructs Georgia schools system administrators to work collaboratively with local businesses "to ensure that academic skills, technical skills and workplace readiness skills are addressed" (GaDOE 2013). As a result of this collaboration, Georgia high school students have the opportunity to select

a minimum of three sequential electives, known as career pathways, to augment their academic course load. Administration of the program is mandated by the state but is under the authority of the local education agency (LEA), which in most cases is the county. This can lead to some differences in availability of specific career pathway electives from school to school and from county to county.

College and Career Academy Model: Georgia's Central Education Center

Integrating career and technical education into high schools has been gaining prominence in recent years (Detgen and Alfeld 2011, 4) and has spawned several avenues to reach potential students. As previously discussed, Georgia incorporates several of these avenues, including CCAs. Among the current CCAs in Georgia, one specific school stands out among the group: the Georgia Central Educational Center (CEC). The CEC opened in 2000 in Coweta County, a rural county 40 miles south of Atlanta. It is a charter career academy designed as a partnership between families, high schools, local employers, a local technical college and a local 4-year college, which focuses on the educational, employment and industry needs of the community at-large. The CEC was designed to meet these needs, utilizing educational methods that have been largely used by private industry and government agencies. Among its early successes, the CEC has received the prestigious National Model High School award, resulting in significant national and statewide acclaim. The school currently serves as a model for educational reform in Georgia.

The CEC was originally formulated from a single telephone call in 1996, from one of the largest employers in the county to the local public school superintendent. From this discussion, the superintendent learned that the basic skills of the county's high

school graduates were unacceptable to many employers in the area. In addition, the superintendent learned that the technical skills of Coweta County high school graduates, those necessary to satisfy the emerging manufacturing automation, were significantly inadequate. What began as a request by the company to acquire district aid in retraining *existing* employees, morphed into an opportunity for educational reform, resulting in the creation of the CEC.

The CEC shares many of the characteristics of the over 6,000 national career academies yet its model and structure differ from most because it functions more as a regional career technical education center, operating as a hub facility for the multiple county high schools. Unlike most career academies, students at the CEC are part-time at the center and remain “based” in their respective high schools. The CEC does not act as a “school-within-a-school” like many career academies, nor is it structured around student cohorts who move together through their grades (Detgen and Alfeld 2011, 2).

The CEC is housed in an abandoned middle school, centrally located in Coweta County. A formal board of directors governs it, with assistance from an advisory committee consisting of local education administration, local educators, local industry leaders, West Georgia Technical College, and Mercer University staff. These two colleges have established satellites campuses at the facility, as well. The administration, along with the board, has developed numerous career-track curricula including manufacturing, dental technician, media services, computer networking, architectural drafting and robotics. Students are “based” at their district high school, in this case, Newnan High School (H.S.), Northgate H.S., or East Coweta H.S., and are transported to the CEC facility utilizing county school bus transportation. The career track courses are

taught at the facility by a combination of state certified teachers and corporate experts, with the majority of instruction currently centered on corporate experts as educators. Each student returns to his or her “base” high school and graduates as a member of that “base” school. This situation, while efficient and effective, creates difficulty in quantitatively measuring CEC success.

The CEC emerged as a result of local industry dissatisfaction with the skills readiness of the local population, particularly of the younger, entry-level candidates. Several prominent businesses were contemplating relocation to better satisfy their resource needs. Concurrently, the state of GaDOE began to measure school performance, distributing state funds based on those results. The principle metric used by the state was graduation rate (or conversely, dropout rate). Coweta County learned very quickly that their dropout rate was not competitive with the leading counties in Georgia.

The primary objectives of the CEC are derived directly from its mission statement:

To create synergy among the educational, business, industrial and government agencies that will favorably impact and enhance economic development and the quality of life in the region (CEC

Presentation/Interview with Mark Whitlock, April 10, 2013).

These objectives include: 1) prepare students for college and career; 2) provide supportive atmospheres through small learning community environments; 3) sequence curricula and integrate academics and career-based learning; 4) give the students the opportunity to earn high school and college credits through dual enrollment courses; 5) link high school to business, civic community and higher education; 6) measure and show impact on student performance and achievement; and 7) reflect the local community in

the career themes. Each of these objectives represents an important component of county educational success and reflects directly on the county's high school graduation results.

The CEC model has been endorsed by the commissioner of the GaDOE, commenting on its applicability throughout the state noting that when technical colleges and high schools work together, this allows for a “great deal of flexibility” (Lakes 2003, 4). In addition, the Georgia governor worked closely with CEC stakeholders in the chartering process, ultimately matching a \$7 million incentive grant for the project. This amount far exceeded the standard charter school grant start-up amounts. Finally, at the CEC groundbreaking, the governor specifically noted the benefit of the CEC as an exemplary state model, listing four specific reasons: 1) it used the state's technical college system; 2) it allowed students from all county schools to participate regardless of where they were physically enrolled; 3) it involved business leaders from the ground up; and 4) it utilized the state's charter law to create a publicly-funded experimental form of education (Lakes 2003, 5).

Fayette County: A College and Career Academy Opportunity?

Fayette County, GA boasts one of the higher performing educational systems in the state. Its five high schools produce an overall graduation rate, well above the state average (Klein 2012 and Shearer 2012), and two of its high schools are perennial leaders in SAT scores. Nevertheless, Fayette County is in the midst of a “grass roots” campaign to establish a chartered College and Career Academy (CCA). This opportunity has sprung from the seeds of necessity within the local industrial community.

Fayette County businesses and industries have reported that the majority of local employment candidates lack basic skills, both in technical expertise and in work ethic, to

meet their needs. Essentially, many of these businesses have job vacancies that they are unable to adequately fill. This situation is not unique to Fayette County. The Governor's Office of Workforce Development has initiated several statewide forums to address this issue including the *Go Build Georgia* program which is designed to educate young people on the value of learning a trade, dispel their misconceptions about the trade industry, and inspire them to consider building a career as a skilled tradesman. The program focuses primarily on manufacturing, industrial construction, transportation, energy, and telecommunications. In addition, a Fayette County Development Authority (FCDA) study found that over 78 industrial-based firms in Fayette County list efficient, trained, and educated employees as their greatest assets and further reports that a technically ready workforce is a key driver in the company's decision to locate to Fayette County (Chow and Moore 2013). Finally, according to Peachtree City Councilwoman Kim Learnard, several European-based companies in Fayette County and surrounding counties note that they are unaccustomed to the lack of apprenticeship programs that prepare young workers for careers (Interview with Kim Learnard, July 6, 2013). Apprenticeship programs generally immerse the students into a formal work environment, providing "hands-on" work experience, and have become a globally accepted method of training and preparation for employment. The dearth of such programs in Fayette County ultimately increases the hiring risks to prospective employers.

The need for vocational education programs is highlighted by emerging industries in the Fayette County area. For instance, Pinewood Studios, a British-based movie studio, is in the process of developing a 300-acre facility in Fayette County as a U.S. satellite

production facility. The studio opened in January 2014 and filming began soon afterwards. As a result of this recent development, Fayette County expects a significant need for film technicians, make-up and wardrobe specialists, electricians and carpenters. These skill sets are extremely limited in the local community and Pinewood has indicated that they will support efforts to train and develop these talents locally. A CCA with the appropriate vocational pathways represents a prime opportunity to meet this impending need.

As is the case with most new programs, there are several challenges and hurdles that require attention to ensure the success of this type of program, most notably the cost of building and staffing a “new” school especially during an economic downturn, and overcoming the inertia that generally accompanies the technical education stigma, particularly in a suburban “bedroom” community. A cost-benefit analysis will be performed later in this study to address these specific conditions, as well as others.

Project Contents – Literature Review

This research study is being conducted as a *policy objective* dissertation. The primary focus is to examine the effectiveness of chartered CCAs with respect to educational success, and to utilize that knowledge to assess the potential impact of, and barriers to, implementing a CCA in Fayette County, GA, within the next several years.

Before engaging in the stated objectives of this research, a comprehensive review of prior study and published results are necessary in order to form a strong foundation for further analysis. Within this document the reader will find a Literature Review (Chapter 2), outlining and discussing existing knowledge and findings of similar or associated studies. The studies are focused on the objectives, administration, and success of similar programs as well as cautions and pitfalls experienced by others. The literature review

generally follows a “building block” process beginning first, with a review of the school reform movement (both nationally and in Georgia), followed by a review of the impact of high school education on the post-secondary labor market, and concluding with the debate over charter school success and the assumed benefit of CCAs as a workforce catalyst. As the literature review concludes, specific hypotheses regarding the topic evolve and are presented to the reader. Any additional research questions resulting from the literature review are also addressed prior to taking the next step in the research.

Project Contents – Methodology

Upon completion of the project background, the methodology used in the study illustrate is presented. Chapter 3 (Methodology) of this research document discusses and describes the procedures and steps taken to test the hypotheses for accuracy and validity. Among the more pertinent components of the methodology are the stakeholders, the metrics, the data, the data acquisition process, and finally, the data analysis method(s). Each of these components is described in greater detail in the Methodology chapter, along with their anticipated use.

Finally in this chapter, appropriate data is gathered, organized and collated for use in the overall analysis. It is anticipated that much of the needed data is currently available from secondary public sources.

Project Contents – Results

Following the detailed description of the methodology, the policy research focuses on applying specific analytical methods, developing results, and reporting any outcomes. Chapter 4 (Results) includes a description of the statistical sample, a detailed assessment of the impact on the hypotheses, and a discussion surrounding questions that have been generated during the analysis, which may invoke further study. As the main

body of the research project, the reader should expect a significant number of tables, graphs and charts depicting the results of the analysis along with descriptions and definitions of each.

The outcomes are then assessed against the research question posed in this study. The reader is reminded of the stated hypotheses which is then tested and either validated, invalidated or deemed inconclusive.

Project Contents – Discussion

Chapter 5 (Discussion) focuses the policy study on some of the key implications of the outcomes. Included in this chapter is a brief assessment of potential limitations as well a consideration of unanticipated collateral issues. Additionally, any data issues which may have arisen, along with their limiting implications, is presented and discussed.

Finally, this chapter closes with a Conclusion and Recommendation section which summarizes the outcomes produced by this policy objective study, and provides local, statewide and national implications of its findings, as well as any relevant recommendations.

Chapter II

LITERATURE REVIEW

The literature review that follows is presented to provide topical background and research support in order to lay the foundation for the policy objective/dissertation analysis, and is organized in three specific parts: 1) The evolution of school reform in America, which provides a brief history of reform and focuses primarily on the national career academy program as a reform movement; 2) High school and post-secondary labor skill needs, including the benefits of a technical/vocational education at the secondary level; and 3) The use of career and charter schools as workforce catalyst in Georgia.

Evolution of School Reform in America

Early History of Reform

The history of educational reform in the United States is littered with initiatives that were pre-destined to be the final remedy for stalled academic performance, workforce shortcomings, and social ailments, yet each initiative failed at some level to reach its anticipated success. Beginning in the mid-1800s, reform movement after reform movement were touted as the next great solution to much of what ailed society in America (Hunt 2005, 84).

Common (public) schools became the early beacon for educational reform and gained a foothold in America around 1830. Up until that time most primary and secondary schools were privately funded and only available to those who could afford

their tuition. Public schools were considered little more than pauper schools, and for that reason were not widely accepted as appropriate for children of the well-to-do. Horace Mann, a lawyer from Massachusetts set out to change that perception. As secretary of the Massachusetts board of education, in 1837, Mann supported and ushered in the age of common schools, believing that political stability and social harmony depended on universal education. Mann appealed to both classes of Americans, telling the working classes that “education...was the great equalizer of men” (Cremin 1957, 65) and property owners that a literate working class would be taught the sanctity of property rights. Mann believed that a common, universal and public education would eliminate crime and poverty stating that such an educational reform would be “the greatest invention ever made by man” (Messerli 1984, 48).

The education reform movement did not stop there. Once it was clear that common schools were not the panacea that Horace Mann projected (crime and poverty did not disappear), other solutions lined up to take their turn creating a perfect educational society. Bible verse reading in schools came into vogue as a means to enlighten the American youth and produce a virtuous country. With immigrants flooding onto American shores, a “life adjustment” curriculum was introduced as a means of preparing these immigrants to become good loyal Americans (Hunt 2005, 85). As the 20th century progressed other initiatives clamored to replace their failing predecessors. The U.S. government established special funds to encourage a more robust math and science curricula in order to stay abreast of Russian advances in military and space programs (not the last time this initiative garnered popularity).

Open education, where students would learn “naturally” was soon followed by a new concept in education: accountability. According to Hunt, this initiative utilized a form of performance contracting, where schools would become accountable to their constituents (2005, 85). This initiative became the standard-bearer for today’s modern education reform movement.

Modern Reform

A scathing report on the state of education in America, *A Nation at Risk: The Imperative for Educational Reform*, produced by the National Commission of Excellence in Education, prompted a new round of educational reform in 1983. The Commission reported that public education in the U.S., once prominent among public education worldwide, was losing ground to competing nations. The report went on to state that “...the educational foundations of our society are presently being eroded by the rising tide of mediocrity that threatens our very future as a Nation and a people” (NCEE 1983, 112). Partly as a consequence of this report, many influential politicians soon recognized and agreed that the U.S. public school system was falling short of international competition (Kaestle 1990, 32). President George H.W. Bush and the nation’s governors vowed to re-vitalize American public schools by holding them accountable to performance goals (Kaestle 1990, 32). This promise initiated several new and reconstituted ideas designed to return the American public school system to the forefront of international perception.

In the midst of the modern reform movement, the U.S. government intervened by establishing one of the most sweeping federal laws concerning education in America. To counteract the growing perception among government officials that the U.S. public

education system has been sliding backwards and is no longer recognized as owning the model for education, Congress passed the *No Child Left Behind Act of 2001* (NCLB 2001). This federal law was enacted to help identify deficiencies in schools and to ensure that all students are provided with access to high-quality, standards-based education and that all schools receiving federal Title I dollars would be held accountable for student outcomes (Porter-Magee 2004, 26). As a result, determining appropriate metrics and actual performance has become a significant task for administrators. According to Balfanz, Legters, West and Weber, who studied the format of NCLB measurements, Adequate Yearly Progress (AYP) is the primary measure used to determine school success and it does so by measuring academic skills proficiency and/or high school graduation rates while comparing them to NCLB standards (Balfanz et al., 2007). This metric has come under scrutiny and criticism since inception but Balfanz et al. consider AYP to be a reasonable and adequate measure of school performance.

Recent literature calls into question the ability of the *NCLB* to produce meaningful performance measures and to adequately and effectively stimulate improvement in schools. Darling-Hammond studied the impact of the *No Child Left Behind Act* on student success and disagree with Balfanz et al. expressing concern over the law's benefit. Citing loopholes in graduation rate measurement along with willful misconduct involving "pushing out" or "holding back" students who are likely to score low on proficiency tests, they believe that the reported results are skewed (Darling-Hammond 2006, 642). These concerns have prompted officials to re-examine the school performance measurement process. For the time being, however, AYP appears to be the "best" measure currently available to scholars.

Key Reform Programs and Initiatives

Modern educational reform in the U.S. covered a broad spectrum of programs and initiatives and has been studied in considerable depth by a great number of researchers and educators. *Block scheduling*, *Small Learning Communities*, *Teacher Quality*, and *Charter Schools* have all been studied or implemented as programs designed to address the shortcomings expressed in *A Nation at Risk*. Each of these initiatives is briefly discussed before embarking on the focus of this policy paper: College and Career Academies. The review of these initiatives is not intended to be comprehensive, as the enormous breadth of school reform in America is beyond the scope of this document, but is envisioned to be the groundwork for this policy research.

Of the several reform programs and initiatives that emerged from the modern reform agenda, the concept of *block scheduling* arose directly from a focus by the NCEE in its report, *A Nation at Risk*. According to Joseph Nichols, one of the most important concerns of the NCEE was the effectiveness of classroom time and how it was being used in America's schools (Nichols 2005, 299). As a general rule, traditional scheduling in public schools involves six to eight 45-50 minute classes, usually meeting daily. Block scheduling modifies the traditional schedule by eliminating several class periods (usually down to four per day) and by lengthening class time to 90 minutes or so. The intent of this conversion was to generate a less fragmented instructional experience while providing a more in-depth learning experience where students and teachers can interact and engage in more quality learning forums (Canady and Rettig 1995).

To date, studies regarding the impact of block scheduling on student achievement have been inconclusive. Some researchers have found that students taking part in block

scheduling have shown limited if any, improved achievement (Nichols 2005, 308), while others have presented a more positive correlation (Trenta and Newman 2002, 58).

Improving teacher-to-pupil ratios has long been considered a potential panacea for declining student achievement and has produced the *small learning community* initiative. Research has been conducted on class size for nearly 100 years, with the first 50 or so, suggesting that class size was not a strong barometer of student academic success (Shane 1961, 32). Mitchell reported similar findings with an added caveat that while there may not be significant evidence to support smaller class sizes, reducing class size may be necessary if the teacher intends to individualize course instruction or the administration wishes to encourage innovation in the classroom (Mitchell 1969, 35).

Following the NCEE report in 1983, a renewed emphasis on class size research was undertaken with varying results. Nye, Hedges and Konstantopoulos' research on Tennessee schools provided strong insight regarding the correlation between class size and student performance. According to the researchers, their findings supported the notion that smaller class sizes positively impacted student achievement but were quick to note that this improvement was more evident in early learning years (2002, 215). Ehrenberg, Brewer, Gamoran and Willms reviewed Nye's results and concluded that class size itself was not the primary factor for performance improvements. They assert that teacher quality and instructional methods generally enjoy benefit from smaller sized classes, particularly those who utilize personal relationships and hands-on approaches, and those measures are the force behind student achievement.

Among the more controversial reform initiatives involves the battle along the front lines of education: quality teaching and *quality teachers*. This topic has been

gaining both momentum and criticism as a result of the “quality teacher” provision of the *NCLB*. There appears to be no shortage of researchers, teachers, teacher unions, school administrators, and reform advocacy groups willing to express their conclusions, opinions and voices on this topic.

Richard Rothstein refers readers to a “manifesto” of sorts, published in the *Washington Post*, where Joel Klein (chancellor of the NYC public school system) and Michelle Rhee (former chancellor of the Washington, DC public school system) ignited controversy when they claimed that removing incompetent teachers was a difficult task and as such, severely limited administrators’ ability to improve the overall quality of teaching in their respective school systems (Rothstein 2011, 32). In that same editorial, Rothstein noted that Klein and Rhee go so far as to say that the single most important factor determining student success is the quality of their teachers. Rothstein is quick to point out however, that research over the past 20 years has demonstrated that quality of schools (of which quality of teachers is a subset), really only account for approximately one-third of the variation in student achievement (2011, 33). Not diminishing the overall impact of teacher quality, Rothstein instead questions the teacher quality measurement most often used by administrators: test scores. He considers use of such scores as troublesome and dangerous, primarily because it can lead teachers to “teach to the test” and because there are so many other factors in testing, its use could cause the administrator to misidentify teachers as “good” or “bad” (2011, 33).

Charter schools have become a popular initiative in response to *NCLB*. To date, over 6,000 charter schools exist throughout the U.S. The nationwide growth pattern of charter schools has been surprisingly steady over the past decade and has become a

beacon of reform following the passage of the *No Child Left Behind Act of 2001*. The National Alliance for Public Charter Schools data provided in Figure 1, illustrates this phenomenon, producing a steady 17% rise in the number of charters schools year-over-year (NAPC 2013).

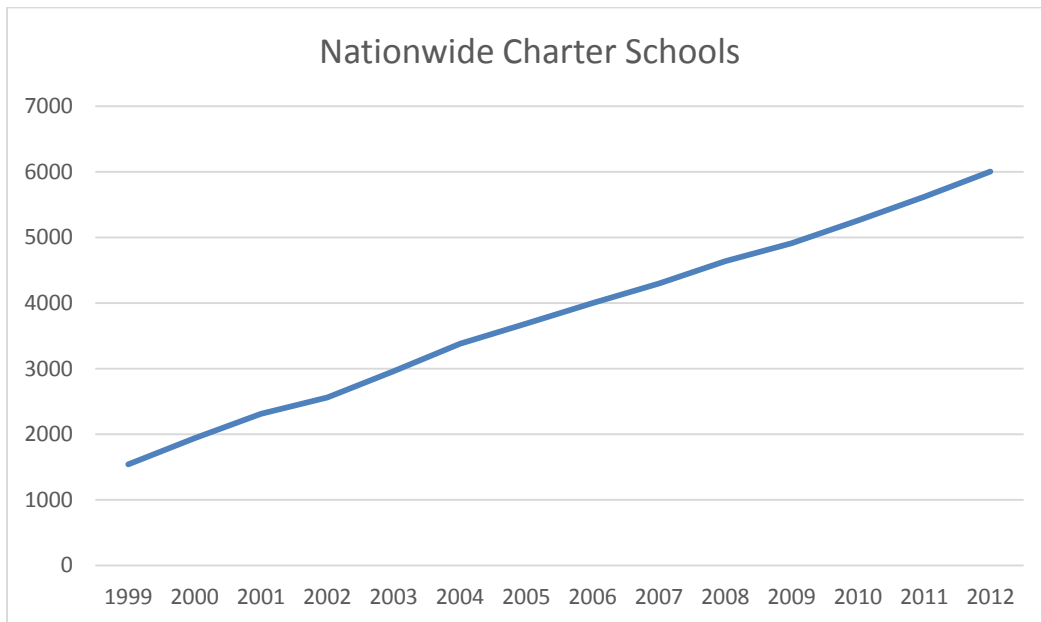


Figure 1. Nationwide Expansion of Charter Schools

Source: National Alliance for Public Charter Schools (2013)

Charter School Origins

Beginning with its humble start in Minnesota in 1991, new and innovative forms of charter schools have emerged across the nation. Popularity has grown to the point where there are nearly 1 million students on waiting lists for an opportunity to attend these schools (Junge 2014, 13).

Simply stated, chartering is the process of granting a school charter to a group of teachers and parents for the purpose of offering an alternative public education. Charter schools caught the attention of many in America for several prominent reasons. First, the

efforts spent over the previous 40 years did not solve the government's desire for equity in education. Second, the 1970s witnessed a perception that America was falling behind in the world economy and this was blamed on public education. Third, a significant number of philanthropic institutions have moved towards "results-oriented" giving versus "open" giving. The fallout from this mindset change is that there are fewer funds to spread for initiatives that may not readily address a positive return-on-investment. Fourth, the charter programs appeal greatly to the upper-tier students and their parents who often times have significant influence in the community. Finally, the intense media focus and frequent reports by respected media outlets that charter schools have proven to improve test scores in minority and poor children produces tremendous public interest (Knaak and Knaak 2013, 46).

The validity of several of these perceptions has been challenged by a number of researchers and is addressed within this policy research/dissertation. Before that occurs however, it is prudent to take a closer look at the similarities and differences between charter schools and traditional public schools.

Charter School Foundations

Charter schools are based on several evolving and defining characteristics. Schools must be non-sectarian and available to all students in the district, and since admission is limited by size, the most frequently used selection process involves a lottery system. Each school charter waives most state and local school system regulations in exchange for requiring that the school meet pre-determined student achievement marks, usually over a 3 to 5-year time frame, or face charter revocation. Finally, parents and

students have the option of selecting these schools rather than being assigned, while the prorated student funding follows the student to the charter school (Nathan 1998, 500).

Aside from the procedural differences stated above, charter schools differ from traditional public schools by incorporating a unique combination of local governance structure, an expanded sphere of community influence, and innovative programs aimed at improving student engagement in coursework.

Among the more pertinent and controversial differences between charter schools and traditional public schools is the issue of governance, more specifically the transfer of direct control. Traditional public schools are nearly unanimously governed and controlled by local educational agencies (LEA), such as county Boards of Education. These LEAs provide leadership, direction, curriculum, standards and budget, as well as determine student success and school performance. Charter schools, on the other hand, are first enabled by the LEA via the initial charter, and then largely create their own rules for carrying out the charter specified requirements. The LEA essentially transfers its control of the particular charter school to a separate board and then monitors the schools performance for success or failure against charter standards. Students attending the charter school then fall under the charter school board's auspices (not the LEA) and, equally concerning to local traditional schools, so does their *prorata* portion of state assistance funding. This combination of loss of control and loss of revenues may result in early pains for charter school advocates. Often, the greater the impact on student enrollment, the more likely a negative response from local officials can exist. Charles Perrault studied charter schools in three separate cities and recognized this early "push-back" noting that charter school founders should be aware of the potential for a polarized

environment and prepare to defend their value (Perreault 1999). Measuring success, from both a student perspective, as well as a parental and LEA perspective, becomes an essential piece of that defense.

Principally the result of this governance difference, charter schools enjoy relative autonomy from certain rules and regulations that conventional public schools must follow due primarily. The benefits of this autonomy are widely debated. Some experts believe that charter schools thrive because of their freedom to innovate afforded them by their charter, while others see that freedom as a lack of accountability and thus, a risk (Knaak and Knaak 2013, 51). Experts on school segregation and discrimination have also entered the debate. A growing number of studies indicate that the presence of “school choice,” particularly charter schools, can often lead to an increase in school segregation (Rotberg 2014, 27). Funding for charter schools provides another outlet for critics of the charter school movement. While both charter schools and traditional public schools are directly subsidized by state and local taxes, the amount of oversight between the two differs greatly. Critics claim that this situation opens an avenue for mismanagement of funds and misuse of taxes, up to and including outright fraud. Supporters of charter schools counter that position, arguing that opponents of charter schools are quick to embrace infrequent incidents which occur no less frequently than in traditional schools (Raymond 2014, 10; Green et al., 2013, 303).

Traditional public schools rely heavily on direction from LEAs and are influenced to some extent by parent-teacher organizations (PTO). Charter schools often benefit from expanded community *partnerships*, particularly with local business and industry. Strong partnerships between the governing boards, the school system, the parents, and the

community appear to be a significant driver in the overall value of charter schools regarding student success, particularly in the area of retention and graduation. Wohlsetter and Smith (2006) studied the concept of partnering in schools, and they cite several advantages of partnering including organizational, political, and financial benefits. In visiting 22 charter schools encompassing 11 states, Wohlsetter and Smith found that partnering helped the schools “achieve their goals by: 1) enriching curriculum offerings, 2) broadening teaching expertise, and 3) helping at-risk students stay in school” (2006, 465-466).

Finally, the most fundamental debate surrounding charters schools involves their assumed performance benefit. In simpler terms, debaters quarrel over whether or not charter schools meet the overall objective of providing an improved learning outcome for their students (Raymond 2014, 11). *Student engagement* (or motivation) has been a prime source of discussion with regard to student achievement. The problem of unmotivated students appears to permeate all levels of education and is often considered the principle reason for lack of success. Discussing student struggles, Chow, Whitlock, and Phillip (2011) indicate that low motivation plays a significant role in student failure. In fact, according to a report published by the Alliance for Education, when students who were considering dropping out were asked why, 76% said that *school was boring* and 42% said they *weren't learning enough*. These two answers far outpaced the remaining reasons (Alliance for Education 2003).

The Alliance for Education does not stand alone in this viewpoint. Bridgeland, DiIulio, and Morrison (2006) supported the findings reported by the Alliance for Education regarding student apathy. Their study, focusing on 16-24 year old dropouts

across 25 states, found that the top 5 reasons students cited for dropping out of school were: 1) not being motivated or inspired to work hard (69% responded); 2) classes were not interesting (47% responded); 3) started high school poorly prepared (45% responded); 4) missed too many days to catch up (43% responded); and 4) spent time with friends not interested in school (42% responded). This study strongly indicates that these particular students were disengaged from the learning process.

Charter schools, by their very governance, combined with significant input from all the various stakeholders, are generally afforded the flexibility needed to customize the students' curricula thereby increasing the potential for sustained engagement.

Notwithstanding these findings, the debate surrounding performance benefits of charter schools rages on today, and probably will do so years into the future, until the volume of qualitative and quantitative research data reaches or exceeds the level of headlines and other spectacular claims (Knaak and Knaak 2013, 45).

The National Career Academy Movement

Nearly 40 years ago, as an outcropping of the charter school and modern reform movements, the career academy model emerged that now exists in over 8,000 high schools across the 50 states (MDRC 2013). Most of these states utilize a school-within-a-school process where charters are not necessary. Several states have combined the chartering process with the career academy curriculum and established charter career academies. Career academies often afford the student a more directed approach than general charter or traditional high schools, focusing on hands-on activity as well as non-traditional teaching styles.

The career academy movement has run a parallel course with the charter school movement since its inception. Career academies have been in operation since the late 1960s, although they did not enjoy significant expansion until the 1990s. According to Stern et al., both charter schools and early career academies represent potential options under the school reform movement (Stern, Dayton and Raby 2010, 2). Three basic features exist in nearly all career academies. First, career academies are considered small learning communities (SLC). A small cluster of students and teachers, both traditional and technical, follow through a multi-year program ensuring small class sizes and consistent instruction. Second, these academies establish a dual pathway for students that combine a college-preparatory curriculum with career/technical courses. Some examples of career themes include health care, business/finance and communication technology. Traditional academic courses needed for both high school graduation and college entrance are intertwined with these career themes to provide the student with a more broad educational experience. Third, and one of the principle differentiations from conventional schools, career academies include input and partnership with local industry and post-secondary education sources (Kemple and Rock 1996, 3).

The career academy movement began with an experiment in Philadelphia in 1969. The initial focus of these early programs centered primarily on dropout prevention and vocational training but not long after began to expand its purpose to include college preparation. The state of California adopted a similar program in 1981 and in 1982, the National Academy Foundation (NAF) was established to support academies nationwide.

According to Stern, Dayton and Raby (2010), the principle reason for the rapid expansion of career academies is that they have been found to provide a positive impact

on student performance. Several research studies have been conducted substantiating this assertion. In separate studies in 1984 and 1985, Reller found that academy students earned more course credits than the comparison group. In a later study, he also found that the student dropout rate was significantly better for academy students when compared against the control group (1987). In their Philadelphia study of urban high schools, Snyder and McMullen determined that graduation rate for 1981 sophomores was 10 percentage points better (77% v. 67%) for academy participants versus the comparison group (1987). In their 1985 California study, Stern, Paik, Weisberg and Evans determined that academy students experienced significantly lower dropout rates (7.3%) than the comparison group (14.6%), while simultaneously earning more credits and higher average grades. In separate works in 1997 and 2000, researchers Maxwell and Rubin studied urban public high schools in both California and Michigan and found that 92% of academy participants graduated, compared to 82% for non-academy students.

Notwithstanding these positive outcomes, not all student performance measures resulted in significant benefits. According to Kemple and Snipes (2000), career academy seniors did not score significantly different from a control group on Math or Language Arts standardized tests. While standardized testing has come under recent scrutiny, the lack of improvement is troubling because standardized tests are often viewed as a strong measure of learning (Dayton, Stern and Raby 2010, 18). Dayton et al. (2010) mitigate this issue by emphasizing the benefits and importance of reduced student dropout rate over improved test scores when evaluating career academies.

Many, but not all, of these studies were conducted in lower performing urban school districts, encompassing low-income families. The mere fact that the study groups

were more focused on lower performing schools, brings into question the universal impact of performance improvement across all school districts. In other words, is the improvement in graduation rate truly attributable to the career academy movement, or is it simply the result of a directed program focusing on a “target-rich” environment? In an attempt to remove some of the potential selection bias from the results, the Manpower Demonstration Research Corporation (MDRC), a nonprofit education and social policy research organization, undertook a national 10-site study using random selection of participating students. The findings of this study supported earlier claims of student performance improvement, but added a caveat that the students most at-risk of school failure received the majority of the performance benefit.

Research on the performance impact of career academies has not been isolated to national high school student performance. Enrollment in post-secondary education and the impact on post high school employment have also been the focus of national studies.

According to Reller (1987), his study found that 15 months after graduation, post-secondary enrollment rate was 62% for academy graduates while only 47% for the comparison group. Others disagree. Snyder and McMullen (1987), Kemple (2008) and Stern, Raby and Dayton (1992) found no discernible difference in post-secondary enrollment between academy graduates and non-academy graduates, while Maxwell (2001) added that former academy graduates were however, less likely to require remedial coursework in their early college years. These findings have helped in reducing claims that vocational tracks limit student options, particularly as they pertain to a four-year college education.

With respect to post high school employment, research findings are mixed. Kemple (2004 and 2008) found that for 8 years after graduation, academy participants averaged 11% higher income than non-participants. In separate studies however, Reller (1987), Stern et al. (1992), and Maxwell and Rubin (2000), found little difference in employment status, wages or hours worked, lessening some of the perceived benefits of the program.

Program benefits are only half of the decision matrix, however. As economies have ebbed and flowed since the inaugural career academy, the overall cost of operating a career academy has been a constant concern for administrators, though not studied nearly as thoroughly as the benefits component. Cost estimates differ among researchers and decision makers, but nearly all agree that the cost to operate a career academy depends greatly on the individual elements within each specific program. Since curriculums vary widely, with student teacher ratios (a significant component of cost) determined by individual school districts, direct comparisons can be misleading. Nevertheless, estimating cost impact is an important element in deciding the whether the anticipated benefits of a career academy are worth the investment.

Parsi, Plank and Stern studied the California Multiple Pathways program, which included career academies, and determined that first year costs, which included start-up expenses, increased by \$797 to per student costs. They further estimated that after start-up costs were absorbed, the on-going cost increase would be closer to \$500 per pupil, per school year (2010). The National Center on Secondary Education and Transition, reports that the additional cost of operating a career academy approaches \$600 per student per year, while noting that the financial support for this difference often comes from outside

grants and community employers and agencies, lessening the burden on the district taxpayers (NCSET 2015). Charles Dayton, coordinator of the Career Academy Support Network at University of California, Berkley, supports the notion that career academies do in fact increase cost, and cites expenses associated with program coordination such as teacher meetings, developing integrated curriculum and employer involvement as primary elements, but stops short of providing an actual estimate (2010).

High School Education in America and Post-secondary Labor Skills

Much attention has been paid recently, to the prospects of employment for young American adults following completion of their secondary and post-secondary education. The “great recession” of 2008 resulted in some of the highest unemployment rates this country has witnessed since the early 1930s. Prior to 2008, many young adults who completed college stood a reasonable chance at employment while those with a high school diploma had a more difficult time securing meaningful employment. After the near collapse of the economy in 2008, the labor prospects for college graduates dropped significantly, and the trickle-down effect was felt even more severely for high school graduates. The resulting situation found more high school seniors opting for college than had previously considered that route while high school curriculums witnessed a resurgence of technical or vocational training. The remainder of this literature review will focus on the latter, with the goal of gaining a better understanding the pros and cons of a technical education in high school, in today’s environment.

Genesis of Vocational Education

Vocational education began emerging here in the U.S. at the turn of the 20th century, particularly in the area of agriculture. Acceptance of career and technical

education grew steadily after WWI and then expanded to include adult education and retraining citizens to re-enter the workforce. The advent of WWII, with its “high tech” weaponry caused a surge in career and technical education as technical skills were needed to manufacture and test new military equipment (ACTE).

Yet, to characterize vocational education as widely accepted and not without its critics would be misleading. As the economy grew during the early-1900s, high school enrollment grew arithmetically. Up to that point, high school was “reserved” for prosperous families while the singular curriculum, one stressing classical academia, suited them just fine (Gray 2004, 129). Once the student population began including more middle and lower income families, the new student body became intermingled: those who were fond of classical curricula and those that found it of little interest. Government concerns over the potential for significant drop-out rates of the disinterested students, resulting in large numbers of unemployed teenagers, signaled a need for a dual education track in public high schools: academic and vocational.

Even during the genesis of the dual track education, naysayers existed. John Dewey, considered by many as the one of the nation’s great educational thinkers, opposed the dual track system, concerned that it would exacerbate the inequities of the time (Roth 2012). Dewey did not oppose skills training, but felt that the public schools were not the appropriate forum to provide such training (Gray 2004, 129).

Following lively debates over the merits of dual-track curriculum, the federal government entered the dispute by passing legislation authorizing funding for vocational education, or career and technical education (CTE), as it was now being called, based on accountability factors. While this legislative activity has prompted a union of sorts

between the technical and academic departments in high schools, it appears that the success of the program requires significantly more study before any conclusive judgments regarding its benefits are made.

Labor Market Realities

The argument over whether vocational education is even necessary is quite often driven by one's view of the objective of secondary education. If, as some believe, the objective of high school is to prepare students to ultimately compete for highly-skilled and higher waged jobs, then curriculum should do just that: prepare. Interestingly, preparation for employment need not come at the expense of higher education. What better combination for employers is there than an applicant who has both fundamental skills and industry knowledge?

The important distinction is that a 4-year college degree is not always necessary to gain access to high paying employment. Gray points to the computer field as a primary example of this. He notes that through 2010, a computer engineer job (requiring a 4-year degree) is predicted to be the fastest growing occupation with some of the highest wages. Gray further notes that the second fastest growing occupation (also with high wages) during this same period is predicted to be computer support technician, where no degree is required but quite often 1 to 2 years of technical education is sufficient, if not preferred (Gray 2004, 132). CTE offers a primary way in which high school students can acquire the requisite training to fill the technician void.

Across the nation, employers have been lamenting the lack of skilled workforce candidates to fill today's expanding technical jobs. The question of necessary skill sets for the future has been the subject of significant study in recent years. According to

Cohen and Besharov (2002, 10), some researchers have argued that because of the shift from a manufacturing economy to a service economy in this country, technical skills are less important than basic academic and social skills. Other researchers such as John Bishop argue that technical skills are still extremely important in future employment decisions (Bishop 1995). Supporting Bishop's position, the U.S. Bureau of Labor Statistics notes that 9 out of 10 jobs will require technical skills by the year 2050, with 70% of the skilled workforce eligible to retire in the next 10 years (BLS).

Of course, demand for skilled workers is only half of the story. Potential employment candidates must also understand which skills are needed and how willing they are to attain them. Salaries and wages often become the driving force in deciding. According to economist Alan Eck and many others, jobs that require more education tend to pay more (on average) than those requiring less education. Eck notes however, that a significant portion of high paying skilled jobs still exist in several U.S. Department of Labor occupation categories (Eck 1993, 25). These opportunities provide high school students with an avenue and incentive to gravitate towards a more technical/vocational education.

Amid this landscape, vocational and technical curriculum has been resurging nationwide. Educators have long held that a vocational or technical education (CTE) is a successful means of motivating students who are less interested in academic coursework and more interested in being trained for future employment. Unfortunately for its supporters, the unintended fallout from this belief has been a natural tendency to "direct" lower achieving students towards a more vocational track. To many involved, this "dumping" process has resulted in a negative stigma associated with a technical

education. Castellano, Stringfield and Stone support this assertion noting that, historically, vocational education programs tended to be reserved for those students who were most at-risk of not finishing high school (2001). Westberry agrees, making the argument that parents identify high school vocational tracks as a dumping ground for students not capable of future college work and further states that this negative stigma has continued into the 21st century (2001). To fight this stigma, Westberry suggests measures to overcome the negative perception of vocational education which include media blitzes and parent, educator, and business meetings. She cites the success of one such meeting at Stratford High School in Goose Creek, South Carolina. This Business and Education Symposium resulted in providing three important outcomes by: 1) educating the parents on the changing demands of the workplace; 2) giving business leaders the opportunity to express the problems they are facing in their specific industries; and 3) opening the lines of communication between educators and business leaders (2001).

In spite of this traditional negative appearance, Chow, Whitlock and Phillip disagree with the assertion that vocational/technical education programs have been developed primarily for the student most at risk of dropping out of high school. Their research indicates that many students participate in vocational tracks to attain “...more specific training that will connect and give them a glimpse of future pathways and careers...” (Chow, Whitlock and Phillip 2011, 44).

Charter and Career Academies in Georgia: A Workforce Catalyst

With their inherent curriculum flexibility, charter schools represent a prime opportunity to address both future employer workforce needs along with future student desires. They are quickly becoming building blocks from which the vocational

resurgence is emanating. The GaDOE and the Governor's office have recognized this opportunity and have established charter schools, and specifically CCAs, as a priority for both education and economic development in the state. These changing priorities have resulted several emerging movements in Georgia, beginning with the charter school movement in general, progressing through charter technical school development, and finally focusing on the more recent CCAs.

Charter Schools in Georgia

School reform has been at the forefront of legislative, administrative and judicial review in Georgia over the past decade. Unfortunately, as it pertains to education, the state of Georgia does not rank highly when compared with other states. National educational rankings such as the "Report Card on American Education: Ranking State K-12 Performance, Progress, and Reform" (Ladner and Lips 2011) and other documented failures in the state, served as the foundation for reform in Georgia. According to these studies, nearly 33% of students who enter high school in Georgia dropout before graduation, while only 15% graduate from college. Georgia's most recent public high school graduation rate rose to 67.4%, while the national average is nearly 78%. This leaves Georgia's educational performance in the unenviable position of being in the bottom quintile of the country (www.eddataexpress.ed.gov).

For a good number of students it appears that the monotony of a traditional academic routine negatively impacts their motivation and engagement. Charter schools have afforded lower performing students the opportunity for more one-on-one interaction, more interesting classes, and a more customized curriculum not available in traditional public high schools in Georgia.

Georgia currently boasts 108 charter schools serving 65,580 students statewide.

This represents approximately 4.7% of all public schools in the state (NACPS).

Figure 2 illustrates the charter school growth in Georgia over the last decade.

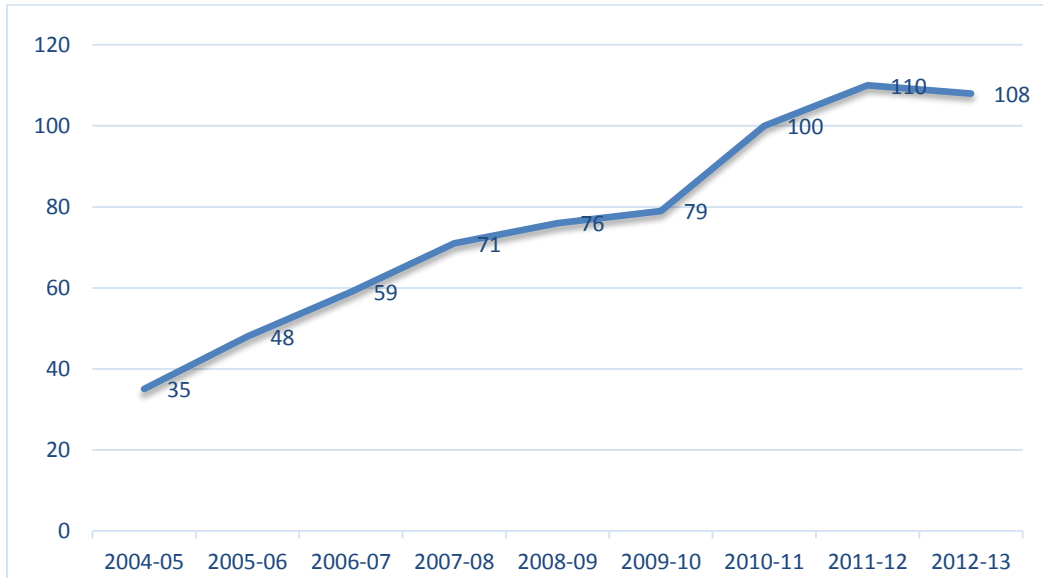


Figure 2. Charter School Growth in Georgia

Source: National Alliance for Public Charter Schools (2013)

Between the years 2005-2009, 44 additional charter schools were opened in Georgia, with another 41 opening between 2009 and 2011. And while this growth pattern has been impressive, Georgia has not limited its approach to charter schools as the only program in Georgia designed to re-engage otherwise uninterested students. Career Technical Education is another approach that has been regaining momentum in the state.

Career Technical Education

Career Technical Education (CTE) creates a more invigorating environment for many disenfranchised learners. Hands-on learning has often proven to be a prime stimulus for increased student engagement. To that end, Kemple and Willner (2008) note that CTE should focus their attention on the following premises: 1) that increasing the

balance between academic and career-related experiences during high school can improve students' post-secondary labor market prospects; 2) that demonstrating that career related coursework can co-exist comfortably and successfully with academic coursework without compromising academic goals; and 3) that supporting the notion that a career education can provide special efforts to students at risk of dropping out while still successfully addressing those students who are college or career bound.

As frequently stated, Georgia lags the majority of the nation regarding generally accepted measures associated with school performance, leaving many communities at risk of not reaching their desired standards of living. In the state of Georgia, education policy and decisions generally fall under the responsibility of local governing jurisdictions. That duty most often resides within the county's elected (or appointed) Board of Education. Preparing their students for entry into a 4-year college remains the principle focus of Georgia county schools systems, however because only 25% of occupations require a 4-year college degree (Barge 2012), career-oriented education carries significant value to many students, prompting the state to require its availability to the entire student body. For the majority of Georgia's 159 counties, technical courses are currently available to students in the form of Career, Technical and Agricultural Education (CTAE), which, according to GaDOE mandate, must be available to all students at some level. The GaDOE recognizes that awareness of career paths and the means of tapping into those paths will provide students with valuable insight into opportunities which may peak their interest. Career oriented courses represent a meaningful method of expanding student awareness.

In order to meet this need, Georgia has established nine career concentrations organized around 16 career clusters (www.careerclusters.org). The table below identifies the 16 career clusters.

Table 1. Georgia Career Clusters

1.	Agriculture, Food & Natural Resources
2.	Architecture & Construction
3.	Arts, Audio/Visual Technology & Communications
4.	Business, Management & Administration
5.	Education & Training
6.	Finance
7.	Government & Public Administration
8.	Health Science
9.	Hospitality & Tourism
10.	Human Services
11.	Information Technology
12.	Law, Public Safety, Corrections & Security
13.	Manufacturing
14.	Marketing
15.	Science, Technology, Engineering & Mathematics
16.	Transportation, Distribution & Logistics

Source: www.careerclusters.org

Among the 16 clusters, students can select 48 different pathways. They are allowed to select three sequenced electives in any one career pathway. The pathways are generally a collaborative effort between the local system, the Technical College System of Georgia (TCSG) and the University System of Georgia (USG). Unfortunately, in most counties, only a small percentage of pathways exist at individual high schools. Funding issues and available resources often dictate that a particular high school must choose among the approved pathways leaving the students in those schools with a limited selection. Most counties then establish a means of spreading the pathways among county

high schools while determining logistical methods to cross utilize available opportunities. Reality, unfortunately, dictates that the complexity of logistics renders the true availability of pathways to a limited audience. In an attempt to expand the potential audience throughout the state, Georgia has begun focusing its efforts on an emerging movement: CCAs.

Georgia's Career Academy Movement: College and Career Academies

Georgia has fairly recently joined the nation in promoting career academies as solutions to lagging graduation rates and has taken it a step further by chartering discrete schools to act as CCAs in those counties which choose that path. CCAs combine the benefits of career academies with the inclusion of college-prep and college-credit curriculum.

Since 2000, the state of Georgia has witnessed a slow but steady growth of CCAs among their counties. These technically-oriented academies take several forms, including both integrated programs and separate county facilities, but the large majority utilizes the separate facility model. Georgia now boasts nearly 30 such programs statewide. While growing, this program currently reaches only 10-15% of the state high school student population, leaving the remainder to utilize the limited CTAE process.

Aside from the usual parent/administrator interaction associated with standard charter schools and career academies, CCAs in Georgia also involve industry leaders in the policy-making process. In his 2003 study of the Georgia Central Education Center, Richard Lakes emphasizes this point when he wrote about college and career academies, stating that “stakeholders exclusively play a major role in the governance of the school through key assignments to steering committee and board seats, and offer input into

curriculum and instruction arenas” (Lakes 2003, 1). In fact, these industry leaders not only participate in the curriculum development, but often take part in the curriculum delivery itself, in the form of teaching, making this a rather unique component of this type of educational reform.

CCAs allow multiple educational systems to collaborate with local industry to develop a state-of-the-art facility designed to 1) improve on student performance in county high schools, 2) provide the student with an opportunity to earn college credit, and 3) learn a career skill during their high school experience. The objective of such a program is to better prepare the student for the ever changing economic landscape once they graduate. CCAs are generally *not* designed to replace the high schools, but merely provide a centralized location to take advantage of economies of scale and to supplement the traditional education with a vocational track.

Learning in the context of employment and job skills, is the central tenet of CCAs. Work-based learning is heavily emphasized; students are encouraged to pursue opportunities to job shadow or intern in local businesses so they can learn the practical aspects of their field. The workplace essentially becomes an alternative classroom setting.

In order to better meet the needs of the local community, and particularly the workforce needs of local industry, a CCA will often team with a 2-year technical college, a 4-year college, and industry leaders, to produce a customized set of curricula (or pathways) that focuses on those needs. For example, Lanier Charter Career Academy in Gainesville, GA dedicates a large segment of its pathways on the restaurant and hospitality industry to take advantage of its proximity to Lake Lanier Islands and Resort.

Finally, a College and Career Academy differs from traditional secondary education in two very significant ways: 1) instead of preparing the students for college, the Academy puts them *in* college; and 2) instead of preparing students for a career, the Academy puts them *into* the workplace where they begin their career. Adding credence to the benefits of CCAs, the Fayette County College and Career Academy Board of Directors has listed the following as perceived benefits of this supplement to traditional educational opportunities: 1) learning is relevant, thereby better engaging and motivating students; 2) instructors have both academic and industry experience, making them better equipped to relate academic study to pertinent career skills; 3) the curriculum is customized to community needs, thereby providing a symbiotic outcome; 4) students learn technical skills for career enhancement, in the event that college is not their path of choice; 5) students are introduced to general employment skills needed in a work environment; 6) students can earn college credit – accepted state-wide, which gives them a “jump” on their college career; and 7) students discover possible career paths earlier in their development, not only learning about what they prefer, but also gaining the benefit of discovering what they may not prefer.

Summary of Scholarly Work

The majority of literature surrounding charter schools and charter technical education are primarily focused on general benefits associated with student performance. Studies and research reveal that a more appropriate balance between academic and career-related experiences during high school can improve students’ post-secondary labor market prospects, along with improving academic engagement. Student engagement,

coupled with parental involvement, enhances the potential for student success, especially for those at risk of dropping out.

Equally clear is the notion that vocational or technical curricula, integrated into traditional academic coursework, provides many students with a more sensible and applicable education, resulting in higher student retention. This notion is becoming more accepted nationwide and is gaining particular momentum in Georgia.

Policy Proposal/Dissertation Objective

The recent charter school movement has prompted communities and education agencies to consider redefining success by combining student academic progress with workforce preparedness. As charter school proliferation continues, the arguments for and against the expansion of those types of schools has spurred new studies, targeting better metrics. Improved metrics will help clarify and solidify the benefits and disadvantages of such schools, thereby assisting policymakers in their decision-making processes.

The ultimate objective of this policy proposal/dissertation is to assess the potential development of a College and Career Academy in Fayette County, GA within the next several years. As such, the proposal focuses first, on identifying the need for this form of school and second, on identifying the benefits or disadvantages that accompany that program. Fayette County has shown considerably stronger student academic performance than the majority of the state, but employers have been concerned that its graduates exhibit few technical and workforce skills, limiting their growth and threatening their stability as a county contributor, prompting the county BOE to consider this action.

In this proposal, educational success is the primary benchmark and is represented by two significant criteria: 1) student academic achievement; and 2) preparing students for entry into employment. This view of success is broader than the more traditional metrics of AYP and graduation rate. While student achievement is a critical measure for educational success, filling any industrial skills gap in the community and satisfying civic and family needs, carry significant weight as well.

In order to better analyze the potential for success of a College and Career Academy in Fayette County, it is necessary to establish a specific and discrete research question along with a methodology used to analyze any findings. That research question is presented below, while the research methodology is provided in significant detail in Chapter 3 of this study.

Policy Research Question: Would establishing College and Career Academy in Fayette County, similar to the CEC in Coweta County, be an *efficient* and *effective* form of education for its constituency?

The Oxford Dictionary defines *efficient* as “achieving maximum productivity with minimum wasted effort or expense” and *effective* as “successful in producing a desired or intended result” (Oxford). For the purposes of this study an *efficient* form of education would therefore not require substantial additional funds without the expectation of an a commensurate increase in performance, while an *effective* form of education would result in established educational goals being met or exceeded.

The research question is addressed by assessing the validity of four separate hypotheses. These are:

Hypothesis 1: A skills gap exists in Fayette County sufficient enough to warrant additional technical/vocational education services for its high school students.

Hypothesis 2: Parents in Fayette County support a more balance education between academic and technical curricula.

Hypothesis 3: Overall cost per student subsequent to incorporating a CCA in Fayette County would be equal to or less than the current cost per student under the current traditional concept.

Hypothesis 4: Student academic success will be appreciably improved following the introduction of a CCA.

This research question is analyzed, tested and answered using the scientific method and will incorporate components from both quantitative and qualitative approaches. A more detailed description of the analytical methods, procedures and tests is provided in Chapter 3: Methodology.

Chapter III

METHODOLGY

Method Overview

This policy objective study focuses on predicting the overall benefits of establishing and administering a stand-alone CCA in Fayette County over the next several years. As such, key metrics are assessed from several counties in Georgia that have already implemented CCAs into their educational systems and those results are utilized as “predictors” in Fayette County, where appropriate. The study uses the scientific method as the primary approach to analyzing findings and addresses a specific research question which includes several testable hypotheses. Using the appropriate statistical analyses, models were developed and correlation is assessed. The remainder of this chapter presents the necessary metrics (variables), the process of data collection, and the analytical methods utilized in this study.

It is prudent at this point to restate the policy objective research question in this study and refer the reader to Chapter 2 as a reminder of its associated hypotheses:

Policy Research Question: Would the establishment of a College and Career Academy in Fayette County, similar to the CEC in Coweta County, be an *efficient* and *effective* form of education for its constituency?

This policy research question narrowly focuses on a predictive analysis with the goal of forecasting success/failure of a new CCA venture in Fayette County. The table below identifies the more germane components and variables used in this methodology, and provides a brief description of each.

Table 2. Description of Methodology Components

<i>Methodology Component</i>	<i>Description</i>
<i>Stakeholders</i>	Students, parents, teachers, school administrators, industry leaders, and community leaders represent the bulk of the stakeholders. Data regarding their preferences and performance is a primary component of this research.
<i>Metrics</i>	“Educational Success” can be measured by various means. Performance measurements such as graduation rates and SAT scores will be utilized to assess academic performance, while necessary skills and availability of skills will assess post-secondary labor market impact, in the county.
<i>Data Acquisition</i>	Data will be acquired from a number of secondary sources including the Ga DOE, the Fayette Visioning Initiative and the Fayette County Needs Assessment report.
<i>Data</i>	The actual data which will be collated, categorized and analyzed to predict results.
<i>Data Analysis</i>	The analytical procedure to be utilized in the assessment and prediction of success or failure of a CCA in Fayette County.

Data Description

Within this study, the vast majority of the data necessary to address the research question emanates from secondary sources, as they are current and readily accessible from public forums. Secondary data is acquired from numerous sources including Central Education Center spreadsheets, a myriad of journal articles, the U.S. Census Bureau, the Coweta County Board of Education, the Fayette County Development Authority, the Fayette County College and Career Academy Board of Directors, and the GaDOE. The

most significant secondary data includes several key metrics. These key metrics are identified and defined below.

Industry Labor Skills Needs – Industry labor skills are separated into three distinct categories: occupational specific skills, general employment skills, and generic skills. These categories are discussed in further detail in the Data Analysis section that follows. Under the category of occupational specific skills, the measures used to assess current and future needs by local industry include the current level of employment by sector, the anticipated future employment growth by sector, and the education level needed to fill those roles. For more general employment skills, the measures include identified labor characteristics and the level of importance of each characteristic skill. Finally, regarding generic skills, the research utilizes an assessment of six separate attributes/abilities and their relative importance to industry leaders.

Industry Labor Skill Deficiency – In order to assess the deficiencies in all skill “types” the research acquired data indicating the variation of available CTAE programs throughout county high schools, the availability of these programs to all county students, and an assessment of skills deficiency noted by employers in their recent hires.

Parental Satisfaction with the Balance and Availability of Career Education – This metric results from secondary survey data taken within the past 18 months from a study commissioned by the Fayette County Development Authority and uses a quantitative scale signifying the frequency of satisfaction with current learning approaches (e.g., internships, hands-on learning, and learning outside the classroom).

Cost per Student in Counties Operating a CCA – As there is no current CCA in Fayette County, the cost per student (pre-CCA and post-CCA) from counties that are operating such schools is acquired and analyzed as a predictor for Fayette County.

Cost per Student in Counties that Do Not Operate a CCA – A similar data metric to the previous data, only taken from counties without an operating College and Career Academy.

Overall State and County Graduation Rates – The graduation rate measures the percentage of students who have graduated from county high schools within a 4-year time span. Quite often however, CCAs do not graduate students per se (they graduate from their base high schools). As a result, data for particular CCAs graduation rate does not readily exist. As a result, the overall county graduation rate is used as a proxy for CCA success.

Data for this metric is obtained directly from the GaDOE database. As such it is secondary in nature and represents population data. As a result, there is no sampling of data and thus no need for sampling error analysis.

Overall State and County SAT Scores – One of the more frequently used metrics of high school student performance and learning is the Scholastic Aptitude Test (SAT). According to the College Board, who administers the exam, the SAT is “the nation’s most widely used college admission test, the SAT is the first step toward higher education for students of all backgrounds. It’s taken by more than 2 million students every year and is accepted by virtually all colleges and universities.”

(<https://sat.collegeboard.org>)

The SAT is designed to test previous knowledge in key areas such as reading comprehension, writing and math skills which are considered critical for success in college and beyond. It is important to note that the SAT is not without its critics. In recent years, the SAT has come under scrutiny, particularly from a cultural and/or racial perspective. Nonetheless, the SAT is still widely accepted as a measure of academic performance and as such is a strong tool for this analysis.

Similar to graduation rate above, this data for this metric is obtained directly from the State of GaDOE database. Again, as population data there will be no random sampling and therefore no sampling error to be assessed.

None of the secondary data described above includes any identifying information. As a result, data collected with respect to graduation rate or student performance does not encroach on the unethical use of private information.

Data Limitations

The data is used in this study provides significant insight into the impact of CCAs on students as well as communities in the state of Georgia, but is not without its limitations. When evaluating student performance, this study uses graduation rate data and SAT scores as primary measurements. Unfortunately, over the past 10 years, Georgia has been refining and revising the “graduation rate” algorithm, causing some discontinuity in its results. Additionally, both the SAT scores and graduation rates accessible from the Georgia Board of Education incorporate all students from each county, regardless of their participation in the CCA. As a result, these data points can only act as a proxy for students participating in CCAs, making it more difficult to isolate the direct impact of CCA participation on these measures with absolute certainty.

Nevertheless, because there are nearly 30 of the state's 159 counties currently operating CCAs, these measurements are still a strong proxy for student performance.

The student cost measurement used in this study also embodies certain limitations. The state of Georgia does not report student costs by grade level, nor by school. The state reports kindergarten through 12th grade consolidated numbers. Unit (per student) costs are then determined by dividing the total county-wide operating expenses by the number of students in the county. While these data points are an accurate representation of student costs within each county and can be a strong proxy with which to assess cost impact of operating a CCA, the inability to isolate specific students mitigates the certainty with which this impact can be determined.

Finally, since the CCA movement in Georgia is relatively recent, the available data is limited to a small sample of years, reducing some of the strength of any trend analyses.

Data Analysis

Several analytical methods are utilized in the overall assessment of the research question. Each hypothesis is assessed individually, utilizing appropriate statistical analysis (both descriptive and inferential, where appropriate). A summary of each hypothesis and its associated analysis is provided below:

Hypothesis 1 – Skills Gap

This hypothesis will test to determine if a gap exists between the current available job opportunities in Fayette County (and surrounding counties) and the various skill levels of potential local candidates for those jobs.

The principle data is secondary in nature and was accumulated via an “Employer Needs Assessment” survey instrument developed under the direction of the Fayette College and Career Academy, Inc. (FCCA) Steering Group. The survey was distributed on-line via a commercial and proprietary link to all businesses listed in the Fayette County Chamber of Commerce business directory in 2013. A total of 773 businesses were queried of which 78 surveys were completed and returned, for a response rate of just over 10%. Special attention was given to the survey requests of the largest manufacturing firms in the county as determined by the GA Department of Economic Development manufacturer’s database. The result of this attention is that the 10% response rate equated to 46.6% of the local workforce being represented. According to the survey results, the respondents represented a wide array of industries including manufacturing, healthcare, education, banking/financial services, automotive and food service, with the majority of the responding firms employing over 100 workers. While the survey instrument itself is considered proprietary and commercial and therefore unavailable to include in the dissertation, the survey results were non-proprietary and readily available through the Fayette County College and Career Academy Partnership.

The results of the survey are broken into industry specific categories and are presented as descriptive statistics in support of the hypothesis. The survey focuses its attention on three categories of skills and identifies them as: occupational specific skills, general employment skills, and generic skills. Each of these categories are further defined below.

Occupational Specific Skills are defined by the survey instrument as the technical or professional occupational skills needed to perform the principle duties of the

employees. Examples include welding, mechanical, hair-styling, hospitality skills, and the like. According to Russ Moore, the survey developer, the category and definition of occupational specific skills stems from the U.S. government KSAs (Knowledge, Skills, and Ability) which are primarily utilized by the federal government in assessing potential candidate's qualifications for a specific government position. It is important to note that prospective employers spend considerable portions of their expense budgets training new employees if they cannot hire personnel who readily exhibit those skills. In order to assess the extent by which any occupational specific skills gap exists in Fayette County, forecasted job openings (by industry, over the next 5 years) are compared to the employers' view of the educational level(s) necessary to fill those positions. Descriptive tables are included in the results describing the existing gaps (if any) and figures are provided to better illustrate the findings.

As defined in the Fayette County Employer Needs Assessment survey, *general employment skills* are identified and defined by nine distinct characteristics. These are: cooperation, attendance, teamwork, attitude, productivity, character, communication, respect, and appearance. According to Russ Moore, the genesis of this category emanated from an original TCSG survey instrument in the early 2000s and focused primarily on work ethic. Each respondent (company) was asked for their assessment of the importance of each characteristic as well as the level of deficiency of these characteristics within their organizations.

Analysis of the general employment skills gap result from comparing and contrasting the level of importance of each of these skills against the measured deficiency

of these skills in current employment (as determined by the respondents to the “Needs Assessment”). A table providing the results of these findings is included.

The *generic skills* gap analysis focuses on six separate employee capabilities that the survey authors (Chow and Moore) have identified as important when functioning within organized employment. These are: Listening, Oral Communication, Writing, Reading, Basic Math, and Manual Dexterity. The primary metrics for assessing the existence of a generic skills gap will be the percent deficient, signifying the percentage of responders that found candidates to be lacking in these particular skills. The results of this analysis are presented in tabular form.

Hypothesis 2 – Parental/Student Satisfaction

Hypothesis 2 examines whether or not parents in Fayette County prefer a more balanced education between academic and technical curricula for their children at the high school level. Nominal data is secured using a 2013 Fayette County Future Visioning assessment produced by Market Street Services, Inc.

In early 2013, Market Street Services, Inc. was commissioned by the Fayette County Development Authority to produce a competitive assessment survey that was grounded in resident input in order to lay the foundation for a countywide visioning initiative. As a part of that assessment, in an attempt to better understand the residential dynamics in Fayette County, Market Street Services, Inc. conducted public input forum over a 3-day period in early December 2013, in which 220 individual participated in a series of focus groups, one-on-one interviews and a community leadership meeting (2014, 5). An open community survey was also established on the Fayette Visioning Initiative web page (www.fayettevision.org) using an industry accepted survey instrument, between December 2 and December 31, 2013. The survey was broad in

nature, covering various topics and was not limited to respondents of any particular age or ethnicity, but was limited to Fayette County residents. Several of the survey questions had either a direct or indirect application to this study. Among the more pertinent survey questions were:

Survey Question: In your opinion, what is Fayette County's greatest strength?

Survey Question: What kinds of learning opportunities would you like to see expanded?

Survey demographics are included as Appendix A, however the actual survey instrument itself is proprietary and therefore is not included.

Following data accumulation, the significance of the results is analyzed utilizing the goodness of fit chi square statistical method and tested against a null hypothesis. Should the probability that the null hypothesis is the correct hypothesis be less than 5 in 100 ($p < .05$), the null hypothesis can be rejected and any difference that may exist can be considered statistically significant.

Hypothesis 3 – Cost Efficiency

Hypothesis 3 tests to determine if a significant per student cost differential will occur, should a CCA be incorporated in Fayette County. Cost per student (or cost per FTE) is the most recognized and accepted unit cost measure used by the counties and the state. According to the GaDOE, the cost per student measure is comprised of operational costs only, which include: instruction, pupil services, staff services, general administration, school administration, transportation, and maintenance and operations. Non-operational and indirect costs such as school food services, facilities acquisition and debt services are explicitly excluded. This results in a more appropriate cost comparison, county to county. Unfortunately, because this hypothesis is forward-looking, there is no

post-CCA development cost data available for Fayette County. There are, however, several counties with similar demographics (where possible) that can act as proxies for Fayette County. As a result, the analysis of this hypothesis focuses on obtaining cost data per student pre-CCA and post-CCA, in several counties with similar demographics to Fayette County. The data includes cost information for several years prior to incorporating a CCA and for several years following implementation. These numbers are then normalized for inflation to ensure that an appropriate comparison is made.

To assist in correlating the findings to the existence of a CCA, the results are plotted against statewide cost trend data as well as Fayette County cost data individually. The resulting trend lines are presented in a chart and any differences are determined and discussed.

Hypothesis 4 – Improved Student Academic Success

This hypothesis examines the potential relationship between student academic success and the introduction of a College and Career Academy in a county's school system. The principle metrics used to evaluate this hypothesis are county Graduation Rate and average SAT scores within the county. Data for each of these metrics is publicly available through numerous sources and is again, secondary in nature.

Both descriptive and inferential statistics are utilized when assessing the effect of operating a College and Career Academy on student success. Graduation rate, which signifies the percentage of students that graduate from their respective senior classes, is averaged over several years prior to the county incorporating a CCA and then compared with the average graduation rate subsequent to operation of the CCA. Any differences are noted and considered. To better isolate the impact of the CCA, the study performs a year-over-year trend analysis, comparing graduation rates between counties operating CCAs

and counties without. Finally, this trend is also compared with Fayette County's graduation rate trend to determine what, if any, impact operating a CCA would have on that county individually.

A similar approach is utilized when assessing the impact of an operating College and Career Academy on SAT scores. A comparative analysis is established using average pre-CCA and post-CCA SAT scores in counties that operate a CCA to determine if any difference in average scores exist. A trend analysis comparing SAT results for CCA operating counties versus non-CCA operating counties is then used to determine if the results appropriately reflect the relationship between the dependent variable (performance) and independent variable (CCA existence), and are not merely a reflection of state trends. Again, both trend lines are plotted against the Fayette County trend line to assess potential for improvement or degradation.

The results of this analysis could provide a strong base of support for convincing the Fayette County Board of Education to move forward with a new College and Career Academy in the county.

Appendix B includes the Institutional Review Board Exemption form resulting from the use of non-identifiable, secondary data throughout.

The next section of this study focuses on the results of the research and provide the basis for any recommendations resulting from outcome of this study.

Chapter IV

RESULTS

The purpose of this study was to examine the potential benefits and/or pitfalls of introducing and developing a College and Career Academy in Fayette County, Georgia. Chapter 4 includes the findings for the study as related to the aforementioned research question and its associated hypotheses:

Policy Research Question: Would establishing College and Career Academy in Fayette County, similar to the CEC in Coweta County, be an efficient and effective form of education for its constituency?

This research question is addressed by assessing the validity of four separate hypotheses.

These are identified below along with their corresponding null hypothesis:

Hypothesis 1: A skills gap exists in Fayette County sufficient enough to warrant additional technical/vocational education services for its high school students.

Null Hypothesis 1 (H₀): Employment skills exist under the current education system sufficient to satisfy local employers' hiring needs.

Hypothesis 2: Parents and students in Fayette County support a more balanced education between academic and vocational curricula.

Null Hypothesis 2 (H₀): Parents are satisfied with the current balance of education between academic and vocational curricula.

Hypothesis 3: Overall cost per student subsequent to incorporating a CCA in Fayette County would be equal to or less than the current cost per student under the current traditional concept.

Null Hypothesis 3 (H_0): Varying the education concept in Fayette County by incorporating a CCA would result in a discernable cost per student increase.

Hypothesis 4: Student academic success in Fayette County will be appreciably improved following the introduction of a College and Career Academy.

Null Hypothesis 4 (H_0): Following introduction of a College and Career Academy in Fayette County, students will be no more successful than under the current traditional educational concept.

Hypothesis 1 - Skills Gap Findings

Hypothesis 1: A skills gap exists in Fayette County sufficient enough to warrant additional technical/vocational education services for its high school students.

Null Hypothesis 1 (H_0): Employment skills exist under the current education system sufficient to satisfy local employers' hiring needs.

As stated in the Methodology Chapter 3, this policy study utilizes three varying sets of "skills" to assess the validity of Hypothesis 1. These are occupational specific skills, general employment skills and "generic skills," as defined earlier.

In order to better understand the state of employment which currently exists in Fayette County, the Fayette College and Career Academy, Inc., commissioned the combined efforts of Seamless Education Associates, Inc. and Strategic Performance Systems to undertake an "Employer Need Assessment Survey" among the County's

primary employers. The survey was rather extensive resulting in 78 separate respondents representing 46.6% of the local workforce.

Occupational Specific Skills

Respondents to the survey represent a wide array of industries including manufacturing, healthcare, education, finance and banking, utilities and others (Moore and Chow 2013, 2). The first step in determining if an occupational specific skills gap exists in the county requires identifying the particular skill areas needed. Once the demand for occupational specific skills in Fayette County is determined, that demand is then matched with the supply of occupational specific skill labor in the county and any mismatch is noted. The survey provides key insight into the demand component. Figure 3 reveals the findings associated with the survey respondents as they pertain to necessary occupational specific skill sets in potential employees. From this chart one can readily ascertain that the four areas most in need of future employment in Fayette County over the next 5 years are in the sectors of Healthcare, Education, Service and Manufacturing.

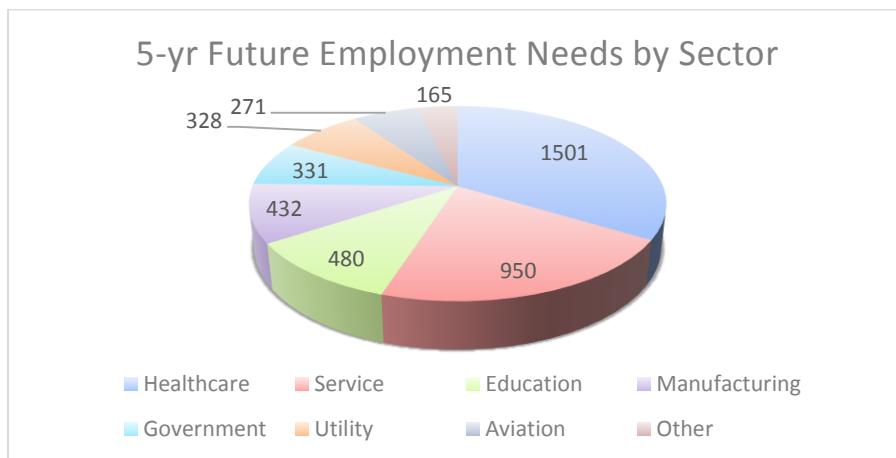


Figure 3. 5-year Employment Needs in Fayette County by Sector

Source: (Seamless Education Associates)

Notably, three of these sectors – healthcare, service and manufacturing – generally involve jobs requiring less than a bachelor’s degree. In fact, when queried, the respondents provided valuable insight into the anticipated education level and the minimum training level needed prior to job entry. Figure 4 below, illustrates the training levels needed.

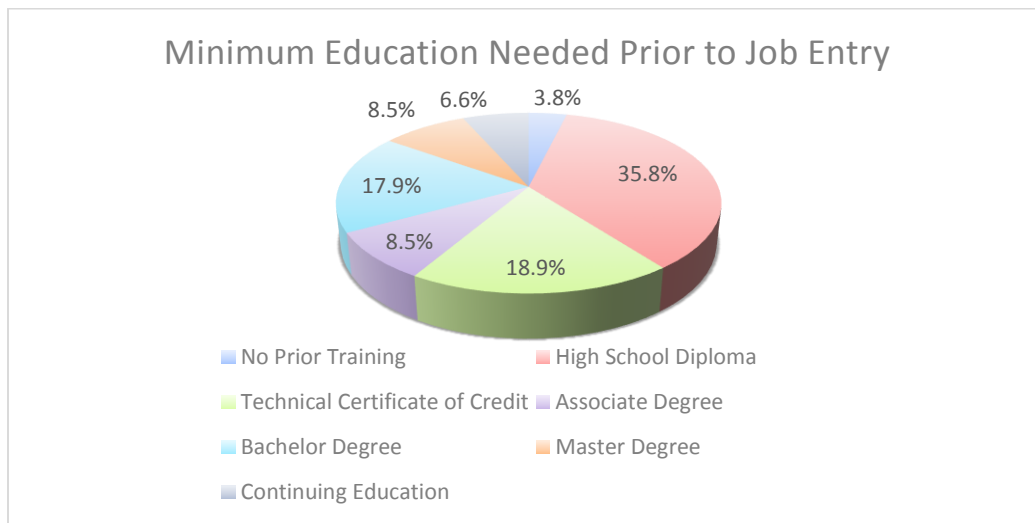


Figure 4. Minimum Educational Needs by Sector

Source: Seamless Education Associates

Nearly 75% of all the forecasted jobs identified by the respondents need less than a bachelor degree, with over 65% of the total forecasted positions requiring less than an associate degree. While Continuing Education credits and Technical Certificate of Credit are most often earned at institutions of higher learning, they differ greatly from an associate degree in that they are focused on job specific skills not necessarily broader academic education tied to general education necessary for growth as a life-long learner (Arkansas Department of Higher Education). Specifically, Technical Certificate of Credit can usually be completed in less than 1 year and, depending upon the course of study and

degree type, can often have little in the way of course credit that can be applied to a higher degree, while an Associate degree takes at least 2 years to complete and includes general education courses along with skill specific training.

Viewing the minimum required training needs from a sector by sector viewpoint illustrated in Table 3, further de-emphasizes the need for baccalaureate education. This is particularly true in the higher growth sectors noted above, none of which require more than 40% of future new hires holding a bachelor degree or higher.

Table 3. Minimum Training Required by Sector

	No Prior Training Needed	High School Diploma	Technical Cert. of Credit	Associate Degree	Bachelor Degree	Master Degree	Continuing Education
<i>Aviation</i>	29%	14%	29%		14%	14%	
<i>Construction</i>		50%	50%				
<i>Education</i>		20%	20%	20%	20%	20%	
<i>Government</i>		42%	17%	17%	8%		17%
<i>Healthcare</i>		10%	40%	10%	10%	30%	
<i>Hospitality</i>		67%		33%			
<i>Manufacturing</i>	5%	59%	14%		14%	5%	5%
<i>Service</i>		20%	10%	20%	35%	5%	10%
<i>Technology</i>			50%				50%

Source: Seamless Education Associates

It is clear from this data that local Fayette County industries are forecasting considerable employment growth over the next 5 years. It is equally clear that staffing needs center on skilled labor holding less than a bachelor degree. What remains in the Hypothesis 1 assessment is to determine whether or not the demand for that labor demographic is met by the future supply of labor in Fayette County.

Four unique, but interrelated measures can assist the analysis as it relates to the appropriate supply of labor in the county: 1) the trend of percentage of adults in the county with bachelor's degrees or higher, specifically those in the age group most likely

to be joining the workforce (25-34); 2) the percentage of Fayette County residents who worked outside the county; 3) the comparison of Fayette County resident employment by sector and actual Fayette County employment by sector; and finally 4) the business response to a survey question regarding the ease of finding appropriate skilled workers in the county.

According to the U.S. Census Bureau, Fayette County has outpaced the nation as a whole when it comes to educational attainment for adults, age 25 and greater. Figure 5 provides a graphical comparison of the level of education attained in Fayette County and in the United States composite.

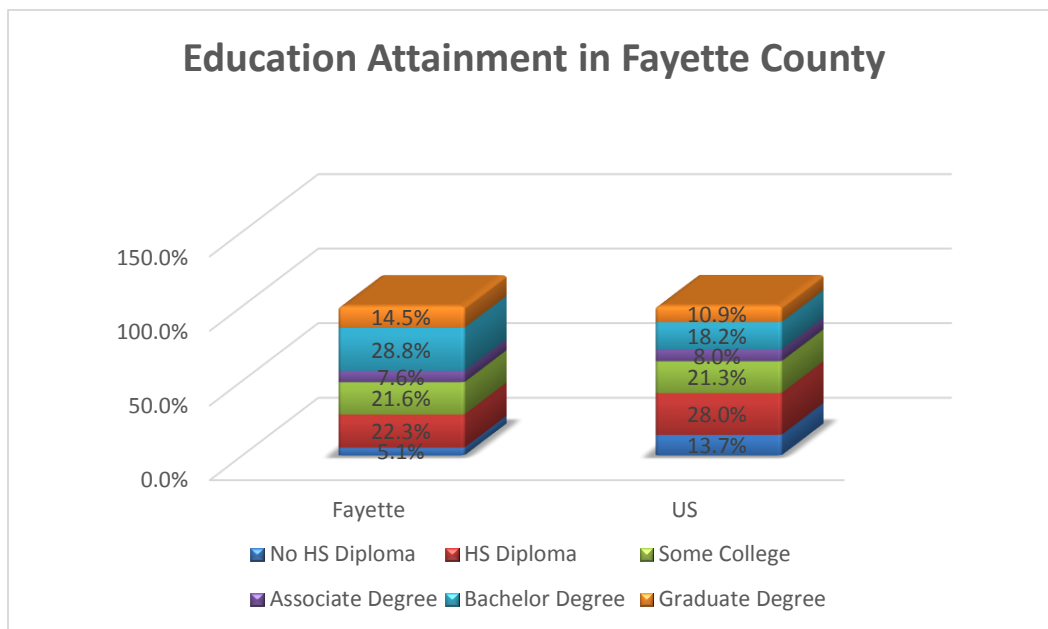


Figure 5. Educational Attainment in Fayette County

Source: U.S. Census Bureau

This chart illustrates that a substantial difference in educational level attainment for Fayette County residents exists when compared to the entire nation. While only 29% of adults age 25 and up have reached an education level of at least a bachelor degree

nation-wide, that number swells to 43.3% in Fayette County. The percentage is even higher (48.5%) in Fayette County when focusing on adults between the ages 25-34 years. As prime candidates to enter the workforce, this age group has a significant impact on the available pool of growth staff for county businesses. Referring back to the degree requirements for county employment, a significant disparity exists. The county employers are searching for employees to fill job vacancies requiring less than a bachelor's degree (75%), while the county is producing young candidates who are pursuing a bachelor's degree at a much greater rate (48.5%) than the nation as a whole.

The percentage of Fayette County residents who work outside of the county is another indicator of skillset mismatch. Once again, the data collected by the U.S. Census Bureau is revealing. Between 2000 and 2012, the Census Bureau data indicates that the percentage of working adult residents of Fayette County that were employed beyond Fayette County's borders averaged 58.9%. One of the principle reasons for this condition may lie in the areas of salaries and compensation. It is well accepted that jobs requiring higher levels of education result in higher potential wages. According to the U.S. Census Bureau, the average wage for jobs offered within Fayette County is 20% lower than the national average (\$49,289), indicating that these jobs do not generally require college-educated employees. Conversely, the median household income of residents of Fayette county, most of whom work outside the county, is more than 150% higher than the national median ((Market Street Services 2014, 31), indicating that the skills and education levels needed for these jobs is significantly higher than in Fayette County. These statistics support the premise that an abundance of Fayette residents, many of whom are college-educated, are obtaining higher paying employment outside of the

county, leaving the Fayette employers to either look in surrounding counties for staff or hiring within the county and training to their needs.

Reviewing additional data acquired from the U.S. Census Bureau, Table 4 illustrates the largest sectors of employment in which Fayette County residents work, compared against the county’s largest economic sectors. Several mismatches are evident, some of which are prominent. The primary areas of mismatch are focused in the transportation and warehousing sectors (where resident employment is high and county needs are minimal) and in the sectors of wholesale, retail and food services (where surplus jobs exist in the county and residential employment lags).

Table 4. Location of County Resident Employment v. County Employment

<i>Employment Sector</i>	<i>Resident Employment by Sector</i>	<i>County Employment by Sector</i>	<i>Percentage Point Difference</i>
<i>Agriculture, Forestry, Fishing and Hunting</i>	0%	0%	0
<i>Mining, Quarrying, and Oil and Gas Extraction</i>	0%	0%	0
<i>Utilities</i>	1%	0%	1
<i>Construction</i>	5%	7%	(2)
<i>Manufacturing</i>	10%	6%	4
<i>Wholesale Trade</i>	2%	6%	(4)
<i>Retail Trade</i>	12%	15%	(3)
<i>Transportation and Warehousing</i>	13%	4%	9
<i>Information</i>	2%	1%	1
<i>Finance and Insurance</i>	3%	3%	0
<i>Real Estate and Rental Leasing</i>	2%	1%	1
<i>Professional, Scientific, and Technical Services</i>	9%	5%	4
<i>Management of Companies and Enterprises</i>	0%	1%	(1)
<i>Admin & Support/Waste Management Services</i>	3%	4%	(1)
<i>Healthcare and Social Assistance</i>	13%	14%	(1)
<i>Accommodation and Food Services</i>	6%	11%	(5)
<i>Other Services</i>	3%	7%	(4)

Source: U.S. Census Bureau

To further illustrate these mismatches, jobs in Manufacturing and Transportation and Warehousing represent 22% of the resident county workforce but only 10% of local County needs while the sectors of Wholesale, Retail and Services, represent 39% of

County needs and only 23% of resident employment. It should be noted that a large portion of the resident employment in Fayette County results from aviation employment outside of the county, with many of those jobs being pilot and flight attendant which quite often require advanced education. This situation particularly affects the sector of transportation and warehousing where the biggest “surplus” of skills exist in the county. On the flip side, the largest deficiency of employment in the county revolves around the service and retail/wholesale. Not only are these the fastest growing sectors in the local economy, but they also require significantly less university degrees.

Finally, as a more qualitative measure, the local county businesses were surveyed for their perception regarding skill set match between the county residents and their employment needs. According to the Fayette Visioning Initiative survey, less than one-third of the Fayette business respondents either “agreed” or “strongly agreed” that it is easy to find skilled workers locally. When prompted to identify the skills hardest to hire, the responses included, automotive technicians, computer programmers, licensed clinicians, graphic designers, welders, fabricators, electricians, and registered nurses. Each of these skills require some post-secondary training while most do not require a 4-year degree.

General Employment Skills (Work Ethic Skills)

As indicated in the Methodology chapter, for this study, *general employment skills* are identified by nine distinct characteristics. These are: cooperation, attendance, teamwork, attitude, productivity, character, communication, respect, and appearance. Each of the soft skill characteristics were defined in the survey as:

Attendance – Reports to work, arrives early/on-time, and notifies supervisor in advance of planned absences.

Character – Displays loyalty, honesty, trustworthiness, dependability, reliability, initiative, self-discipline, and self-responsibility.

Teamwork – Respects the rights of others, respects confidentiality, is a team worker, is cooperative, is assertive, displays a customer service attitude, seeks opportunities for continued learning, and demonstrated mannerly behavior.

Productivity – Follows safety practices, conserves materials, keeps work area neat and clean, follows directions and procedures, and completes tasks.

Attitude – Demonstrates a positive attitude, appears self-confident, and has realistic expectations of self.

Communication – Displays appropriate nonverbal (eye contact, body language) and oral (listening, telephone etiquette, grammar) skills.

Appearance – Displays appropriate dress, grooming, hygiene and etiquette.

Cooperation – Displays leadership skills, appropriately handles criticism, conflicts and complaints, demonstrates problem-solving capability, maintains appropriate relationships with supervisors and peers, and follows the chain of command.

Data was collected via the aforementioned Fayette County Employer Needs Assessment survey. The data is used to identify the relative importance of each of these skills as well as the respondents' assessment of the availability of these characteristics in past candidate pools. Data was accumulated for each of the 78 business respondents. Each respondent selected the importance of the various characteristics by choosing from the following scale of importance: Not at All (1), Neutral (2), Moderate (3), Important

(4), and Essential (5). Total point value for each “soft skill” characteristic was determined by multiplying the importance value by the number of times it appeared in the responses. The characteristic accumulating the highest total point value is deemed to be the most important characteristic with each subsequent characteristic being less important. Additionally, the respondents also noted whether each of these characteristics was apparent in their current workforce as well as recent candidates for employment.

From this data, Dr. Anthony Chow, Ph.D., developed a deficiency index (DI) in order to determine which characteristics were most important and most deficient in past employee pools. The index is calculated by multiplying the frequency of responses that denoted specific skills as “Essential” by the number of times they were considered “Deficient.” In addition, the percentage of respondents who marked each skill as deficient, regardless of importance, was also determined and reported. The resulting outcome of the data analysis is provided in the Table 5.

Table 5. Fayette County General Employment Skills Scoring

<i>Importance Ranking</i>	<i>Skill</i>	<i>Total Points</i>	<i>Deficiency Index (DI)</i>	<i>% Deficient</i>
1	Attendance	334	2900	15.2%
1	Teamwork	324	2800	15.9%
3	Character	334	2170	10.8%
4	Communication	315	1600	16.1%
5	Attitude	301	1575	10.8%
6	Appearance	296	1050	14.8%
7	Productivity	298	765	5.1%
8	Cooperation	107	330	16.4%

Source: Seamless Education Associates

While the deficiency index is useful in assessing relative impact of the deficient characteristic when compared to other soft skill characteristics, it does little in the way of

establishing a mismatch of skill needs. The “% deficient” results, which represent the percentage of respondents who assess their staff as being deficient in this particular skill, is more useful and provides significant insight into employees’ capabilities. While nearly all the respondents reported some deficiency in these general employment skills, 15% of the workforce being deficient hardly represents a significant mismatch in general employment skills.

Generic Skills

The third and final skills under examination for potential mismatch in Fayette County are referred to as *generic skills*. These are skills that are necessary in business and industry but are more general in nature. The key generic skills identified by the business respondents are Listening, Oral Communication, Reading, Basic Math, Writing, and Manual Dexterity. Many of these skills are established and developed in the secondary schools’ academic curriculum (e.g., Reading, Writing and Basic Math) while others may be acquired outside of the academic curriculum (e.g., Manual Dexterity, Listening and Oral Communication).

The same survey given by Seamless Education Associates, Inc., asked the 78 local Fayette business respondents to identify and rank their most important employee generics skills and then to note if such skills were considered deficient in their particular workforce. The results of this survey are provided in Table 6. The numbers in each column denotes frequency in which the specific generic skill was noted under each category of relative importance, while the Deficient % represents the percentage of those respondents who found that their workforce lacked these particular skills.

Table 6. Fayette County Generic Skills Deficiency

<i>Generic Skill</i>	<i>No Need</i>	<i>Not Important</i>	<i>Moderately Important</i>	<i>Important</i>	<i>Vital</i>	<i>Deficient</i>
<i>Listening</i>	0	0	1	26	80	12.1%
<i>Oral Communication</i>	0	0	2	32	73	11.2%
<i>Writing</i>	0	6	18	37	45	10.2%
<i>Reading</i>	0	1	3	39	64	3.7%
<i>Basic Math</i>	0	2	18	39	48	3.7%
<i>Manual Dexterity</i>	3	10	18	23	53	1.9%

Source: Seamless Education Associates

Listening, Oral Communication and Writing were found to be the most deficient generic skills among the workforce, while manual dexterity was the least deficient.

Similar to the general employment skills analysis, the above data illustrates that “generic skills” certainly contain some room for improvement, however when 88% of the current workforce exhibit the most vital skills, there appears to be little referendum for dramatic changes in workforce preparation on this count alone.

Hypothesis 2 – Parental and Student Support Findings

Hypothesis 2: Parents and students in Fayette County support a more balanced education between academic and vocational curricula.

Null Hypothesis 2 (H₀): Parents are satisfied with the current balance of education between academic and vocational curricula.

Fayette County currently operates a CTAE program within its boundaries, which consists of six separate pathways: Marketing, Business, Family and Consumer Science, Healthcare Science, Technology and Engineering, and Technical and Service Occupations. Not all pathways are available at each of the five high schools in the county. Table 7 illustrates the available pathways and the high schools in which they are housed.

Table 7. Available CTAE Pathways in Fayette County

<i>Program/Pathway</i>	<i>High School(s)</i>
<i>Marketing</i>	Sandy Creek High School Whitewater High School
<i>Business</i>	Fayette County High School McIntosh High School Sandy Creek High School Starr's Mill High School Whitewater High School
<i>Family and Consumer Science</i>	Starr's Mill High School Whitewater High School
<i>Healthcare Science</i>	McIntosh High School Sandy Creek High School Starr's Mill High School Whitewater High School
<i>Technology and Engineering</i>	McIntosh High School
<i>Technical and Service Occupations</i>	Fayette County High School McIntosh High School Sandy Creek High School

Source: www.fayettetctae.org

In most cases, if a student is not in a school district that includes his/her preferred pathway, that student must petition for a complete school transfer and obtain their own transportation from their home to the new school. In selected cases a student has been allowed to remain in their district high school and leave for a class period or two at another county high school but these case are rare and once again, transportation is not provided by the county. In an attempt to develop a long-term strategy in Fayette County, a Fayette Visioning Initiative was undertaken which included determining the level of residential satisfaction with the current state. This initiative was commissioned by county leaders and involved collecting data on several strategic issues. Among those issues queried were two survey questions associated with residents' satisfaction with the public

education provided in the county. These particular questions are germane to this study and are delineated below.

- 1) In your opinion, what is Fayette's greatest strength?
- 2) What kind of learning activities would you like to see added or expanded?

Both of these questions were open-ended and allowed multiple responses were worded with the phrase "choose all that apply." The significance of this line of questioning is discussed further as the survey results are presented.

According to Kathy Young, Chief Operating Officer and Principal of Market Street Services, Inc., her company was commissioned to create and execute a survey questionnaire for the purpose of assisting the county leaders in developing a long-term visioning initiative for the county. With the help of the county Visioning Steering Committee, comprised of 38 influential community members, Market Street Services, Inc. produced a questionnaire and made it available to all Fayette County residents via the Fayette Visioning webpage. Participation was restricted to Fayette residents but open to all ages, genders and ethnicities between December 2 and December 31, 2013 and received 1,478 responses. This number represents a response rate of 1.36% of Fayette County's population. Eighty-one percent of those respondents were between the ages of 25 and 64. White respondents were slightly over represented (76.6% of the survey versus 66.8% of the county population) while Fayetteville residents accounted for 32.3% of the survey while only representing 14.9% of the county population. Most significantly under represented were the unincorporated county residents (20.2% of the survey versus 45.6% of the county population). A good portion of the cause of this under-representation is probably a function of the survey vehicle (webpage) and the relative lack of internet

service in rural, unincorporated areas. There are some ramifications of the representation inequities which are discussed later in this dissertation. Importantly, however, more than three-fourths of those surveyed responded to the question regarding Fayette County's greatest strength, while more than half of those surveyed responded to the question regarding educational opportunities since these questions are poignant to this analysis. A more complete breakdown of respondent demographics can be found in Appendix A.

What is Fayette's Greatest Strength?

Among the respondents ($n = 1,123$) to this question, more than 90% of the respondents listed the Fayette County School System as one of the top two greatest strengths in the county. Other strengths offered by the responses included public safety, the county's proximity to Atlanta, the public use of golf cart paths, the proximity of the county to the Hartsfield-Jackson International airport, quality of life, and available shopping. Conspicuously missing from the respondents list of county strengths was "employment." Several anecdotal comments from the survey question included, "In my opinion, Fayette County's greatest strength is its school system" and "Best public education system in the state of Georgia," further accentuate the residents' perception of the county's school system. While this particular question does not directly impact the benefits or disadvantages of adding a CCA to the county schools system, it does serve as a strong indicator of both the importance of a quality school system to county residents as well as parental satisfaction with the current school system as a whole. As a result, no attempt was made to determine sampling error for this question.

What Expanded Learning Opportunities Would Parents Prefer?

More directly related to this research was the question Fayette County residents were asked regarding the types of learning activities they would like to see added or expanded in the county. From the survey sample size, 760 ($n = 760$) parents responded to this particular question. As indicated earlier, respondents were allowed to select more than one from the list of learning activities, creating a Multiple Response Categorical Variable survey. The individual responses were recorded and tabulated, and are presented in Figure 6. The response frequencies illustrated in this table indicate that nearly two-thirds of the parents who responded, desire the addition or expansion of “hands-on” learning, in a non-traditional setting. This type of learning is more weighted towards vocational-type education and therefore indicates that the majority of parents may not be completely satisfied with the current balance of academic and vocational education in the county, and may in fact prefer the balance to move more towards a vocational direction.

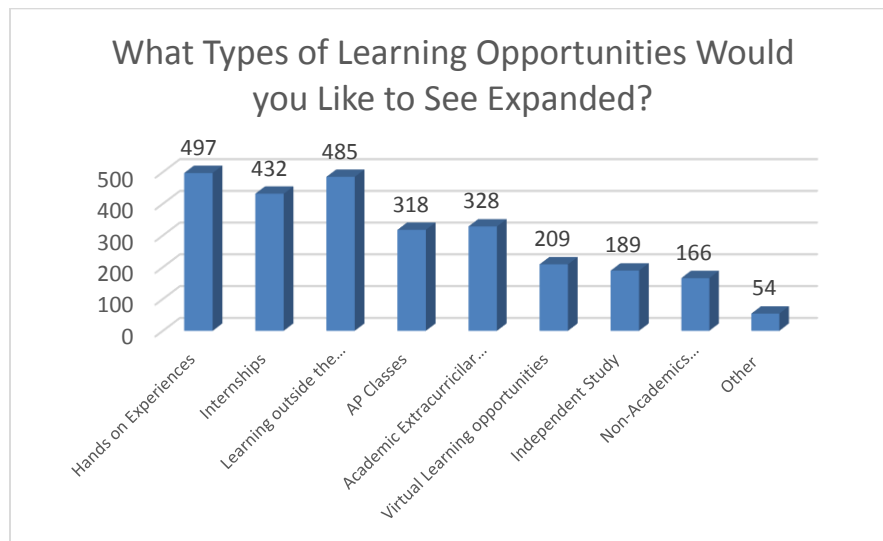


Figure 6. Parental Desire for Expanded Educational Opportunity

Source: Market Street Services, Inc.

Test for Significance: Chi Square Analysis

In order to assess the possibility that the differences indicated in the data are not simply the result of random testing error, the data surrounding future learning opportunities was first collated into three distinct categories: Academic direction (A), Vocational direction (V) , and Other direction (O). Table 8 illustrates the classification outcomes resulting from this categorization. The basis for this categorization is fairly straight forward. Those available responses that are associated with traditional academic routes were assigned to the Academic (A) category. Those available responses that are associated with nontraditional learning opportunities were assigned to the Vocational (V) category. The remaining available responses were assigned to the Other (O) category. Second, because there are an uneven number of questions within each category, the mean (m) for each category was used to assess sampling error instead of the actual frequencies themselves. The means and standard deviations of the frequencies in each category are also included in Table 8. Finally, since several of the available responses included options that could apply to both the Vocational (V) and Academic (A) categories simultaneously, or were wholly unrelated to the choice of vocational or academic direction, the Other (O) category was omitted from the test for significance. Omitting them from this test is not intended to lessen the value of these options, but since this analysis is studying the preference between vocational or academic opportunities, including category (O) would complicate the assessment with no added value. The remaining data points in Categories V and A were then used to assess potential sampling error and significance.

Table 8. Frequency Outcomes and Categorical Means

<i>Category*</i>	<i>Response</i>	<i>Frequency</i>	<i>Category Frequency Mean</i>	<i>Category Frequency Std. Dev.</i>
V	Hands On Experience	497		
V	Internships	432	471	34.8
V	Learning Outside the Classroom	485		
A	More AP Classes	318	325	7.5
A	Academic Extra Curricular Activities	328		
O	Virtual Learning	209		
O	Independent Study	189	154	69.3
O	Non-Academic Extra Curricular Activities	166		
O	Other	54		

* (V) - Vocational, (A) - Academic, and (O) - Other

To begin the significance assessment, a null hypothesis was created. Recall that

Hypothesis 2 states:

Parents and students in Fayette County support a more balanced education between academic and vocational curricula.

The null hypothesis (H_0) then, assumes that no difference actually exists between those parents desiring more vocational learning and those parents desiring more academic learning, and can be stated as follows:

Parents are satisfied with the current balance of education between academic and vocational curricula.

Or in mathematical terms:

$$H_0: \%V - \%A = 0$$

In essence, the null hypothesis assumes that, while the data indicates that parents of Fayette County in the random sample do desire a more balanced education between academic and vocational curricula (471 v. 325, or 59.3% v. 40.7%), this difference in the data is merely the result of random sampling error.

Testing the validity of the null hypothesis involves two distinct computations: 1) the *one way chi-square test* (or otherwise known as the *goodness of fit chi-square test*) and, since this data was obtained using a multiple response survey instrument, 2) a *first order Roa-Scott chi-square correction*. This correction is required to consider and include the effects associated with Multiple Response Variable solutions, and is widely accepted as an appropriate correction to for chi-square tests which require independent responses. Utilizing the frequencies for each of response variables, the modified chi-square analysis produced the following results:

$$\chi^2_{\text{corr}} = 836.2$$

$$df = 8$$

$$p < .0001$$

$$\chi^2_{\text{crit}} = 15.51$$

Since χ^2_{corr} is far greater than χ^2_{crit} and $p < .0001$, the probability that the null hypothesis is extremely remote. Therefore, it is highly unlikely that the differences established in the random sample are attributable to sampling error and thus significant.

Hypothesis 3 – Student Cost Findings

Hypothesis 3: Overall cost per student subsequent to incorporating a CCA in Fayette

County would be equal to or less than the current cost per student under the current traditional concept.

Null Hypothesis 3 (H₀): Varying the education concept in Fayette County by incorporating a CCA would result in a discernable cost per student increase.

When assessing any large venture, no analysis would be complete without considering any associated cost implications. School system budgets, historically thin even in strong economies, have been stretched beyond their capabilities in recent years. As a result, school boards are keenly aware of the financial, economic and political hardships that arise from large expansion projects. The Fayette County Board of Education recognizes this condition and is understandably reticent to act should costs become significantly higher as a result of structural changes. Creating a College and Career Academy would most certainly be considered a salient structural change.

In order to best assess the financial impact of a CCA in Fayette County, several important aspects must be understood. The first among these is the metric from which to compare “before” and “after” status. *Cost per student* is most frequently recognized as the principle measure from which county educational systems are compared and as such will be the primary measure for this analysis.

Cost per student data was collected from the GaDOE for the 27 counties that currently operate a CCA, for academic years 2006 -2012. Of these 27 counties, eight began operation after 2013 and four more have had a CCA in operation longer than the study period, thereby eliminating them from the analysis. As a result, fifteen counties (n = 15) were included in this analysis. It should be noted that the data collected by the GaDOE represents an average for all grades K-12. Actual individual school data is not tabulated by the state or the counties. According to Mark Whitlock, Chief Executive Officer of the Coweta Central Education Center, this situation makes it much more

difficult to fully understand and analyze costs on a school-by-school basis. As a result, the K-12 cost per student will be utilized as a proxy for actual cost impact of adding a CCA at the high school level.

This data was utilized in two distinct manners. The first part of the analysis determines the impact of adding a CCA to the county on student cost, within each county. Average costs pre and post are provided in table 9. It should be noted as well that the averages were normalized for inflation, by assuming a 2% cost of living adjustment, so that these numbers better represent comparative costs.

The data indicates very clearly, that among the counties that added a CCA, all experienced a reduction in cost per student following the opening of the Academy. The cost reductions ranged from 0.4% to as much as nearly 15%, with three of the counties experience double –digit reduction.

It is quite possible however, that this cost reduction is not purely indicative of the impact of opening a College and Career Academy. To gain a better understanding of the scenario, a second analysis (trend analysis) is performed using the same data, to compare cost trends between counties incorporating CCAs and those without. Average costs for the counties incorporating CCAs, Fayette County and the State of Georgia as a whole are plotted, and a linear regression trend line is developed for each.

Table 9. Pre- and Post-CCA Cost per Student Averages- Escalated at 2% per year (2006-2014)

County	Average Cost per Student				
	Prior to CCA (M)	Std. Dev Prior to CCA (S)	Post CCA (M)	Std. Dev Post CCA (S)	% Better/ (worse)
Baldwin	\$ 9,705	\$ 538	\$ 8,264	\$ 354	14.8%
Carroll	\$ 9,246	\$ 622	\$ 8,509	\$ 204	8.0%
Clarke	\$ 12,184	\$ 717	\$ 11,543	\$ 613	5.3%
Decatur	\$ 9,215	\$ 551	\$ 8,426	\$ 198	8.6%
Douglas	\$ 8,888	\$ 721	\$ 8,617	\$ 134	3.0%
Floyd	\$ 10,092	\$ 1043	\$ 10,047	\$ 330	0.4%
Glynn	\$ 10,762	\$ 538	\$ 9,884	\$ 576	8.2%
Gordon	\$ 9,440	\$ 472	\$ 8,243	\$ 235	12.7%
Houston	\$ 9,701	\$ 461	\$ 8,915	\$ 51	8.1%
Lamar	\$ 9,382	\$ 420	\$ 8,623	\$ 340	8.1%
Laurens	\$ 8,324	\$ 435	\$ 7,530	\$ 148	9.5%
Liberty	\$ 9,405	\$ 510	\$ 9,146	\$ 162	2.8%
Newton	\$ 8,872	\$ 499	\$ 7,934	\$ 54	10.6%
Toombs	\$ 9,493	\$ 694	\$ 8,847	\$ 383	6.8%
Warren	\$ 11,105	\$ 987	\$ 10,562	\$ 351	4.9%
AVERAGE	\$ 9,721		\$ 9,006		7.4%

Source: GaDOE

Figure 7 represents the outcome of the trend analysis. From this chart, it is clear that a decreasing cost trend has been occurring throughout the vast majority of the state, irrespective of the existence or addition of a CCA. Several reasons for this situation exist. First, nearly 50% of funding comes from countywide property taxes. The economic downturn which began in 2008 significantly depressed housing prices, not only in Georgia, but nationwide. With no other revenue streams to offset this lost revenue, serious cutbacks and cost reductions were imposed by each county. Second, it has been widely reported that class size has been growing throughout the state. While total costs may have remained constant, the “per student” cost is reduced as total cost remains fixed

and the number of students increases. This is an industry standard unit cost reduction process that is used heavily in business but has some significant unintended consequences when applied to a classroom, namely an increased student/teacher ratio with its potential negative effect on student academic performance.

What matters most to this analysis however is not necessarily the direction of cost per student outcomes per se, but more so their relative trends when compared to the state cost trends. The trend line associated with the entire state ($y = -170.39x + 351732$) reveals that overall, the state has experienced a cost per student reduction at a greater rate than either Fayette County ($y = -146.73x + 304075$) or the counties operating CCAs ($y = -136.48x + 283552$). More importantly, of the three entities, the counties operating CCAs experienced the lowest rate of unit cost reduction, indicating a relative cost “increase”. It should be noted that all three lines had similar dispersion around their *mean*, with standard deviations of \$439 for CCA counties, \$613 for Fayette County, and \$586 for the remaining counties, all on similar bases. Table 10 illustrates these results.

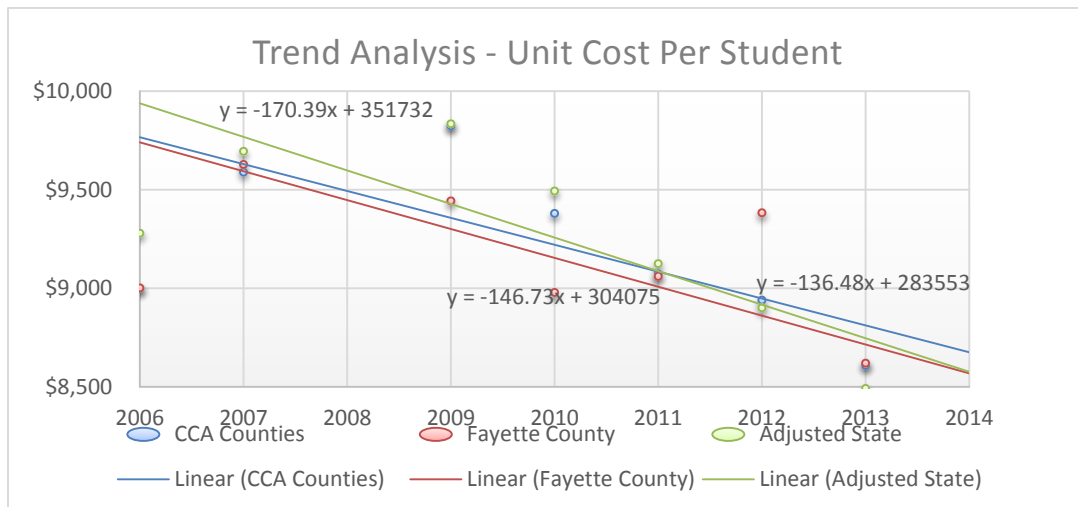


Figure 7. Student Cost Trends

Source: GaDOE

Table 10. Mean Cost per Student Comparison

	<i>Mean</i>	<i>Standard Deviation</i>
<i>Fayette County</i>	\$9,154	\$613
<i>CCA Counties</i>	\$9,974	\$439
<i>Remaining State counties</i>	\$9,257	\$586

The data from this analysis provides mixed results regarding the impact on cost of implementing a College and Career Academy into county educational systems.

Supporting the hypothesis, the data clearly illustrates that counties incorporating CCAs have experienced a significant cost reduction after implementation. The decreasing cost trends across the state however produce an alternative position. Counties operating a CCA have, over time, experienced a lower cost reduction than the state as an entity, calling into question the validity of the earlier support. It is quite possible that the limitations of the data (K-12) are “masking” the true cost impact. These limitations are discussed in further detail later in the dissertation.

Hypothesis 4 – Academic Performance Improvement Findings

Hypothesis 4: Student academic success in Fayette County will be appreciably improved following the introduction of a College and Career Academy.

Null Hypothesis 4 (H₀): Following introduction of a College and Career Academy in Fayette County, students will be no more successful than under the current traditional educational concept.

The final hypothesis associated with the *Policy Research Question* involves the assumption that incorporating a College Career Academy into Fayette County will appreciably improve student academic performance. In order to assess this hypothesis, three separate methodologies are utilized, each assessing two widely-accepted academic performance measures.

The first methodology focuses only on counties currently operating a College and Career Academy. The analysis compares the average SAT performance and average Graduation Rate among participating counties, prior to engaging in, and following operation of a CCA.

The second approach compares the performance of all counties operating a College and Career Academy against the performance of the remaining counties not operating a CCA. The same metrics, Graduation Rate and SAT scores, are used in this comparison.

Finally, each of those first two groups, CCA operating counties and non-CCA operating counties, are compared to Fayette County performance and potential improvement was gauged.

SAT Performance

SAT scores were accumulated by county from 2006-2013 for the 27 counties which currently operate a College and Career Academy. Of these counties, nine began operations after the 2013 data was reported and two other counties failed to report SAT data prior to initiating CCA operations. As a result, data from the remaining counties (n = 16) are consolidated by year and segmented into two categories: pre-CCA and post-

CCA. The data is averaged for each category and a consolidated average is determined for both. Table 11 illustrates the findings.

Table 11. Average SAT Score Pre- and Post-CCA

<i>County</i>	<i>Average SAT/ACT Pre CCA</i>	<i>Average SAT/ACT Post CCA</i>	<i>Points Better/ (Worse)</i>	<i>% Better/ (Worse)</i>
<i>Baldwin</i>	1325	1260	-65	-4.9%
<i>Carroll</i>	1457	1384	-73	-5.0%
<i>Clarke</i>	1393	1320	-73	-5.3%
<i>Decatur</i>	1355	1314	-41	-3.0%
<i>Douglas</i>	1359	1345	-15	-1.1%
<i>Floyd</i>	1549	1512	-37	-2.4%
<i>Glynn</i>	1479	1417	-62	-4.2%
<i>Gordon</i>	1375	1343	-33	-2.4%
<i>Houston</i>	1486	1445	-41	-2.8%
<i>Lamar</i>	1318	1282	-36	-2.7%
<i>Laurens</i>	1365	1329	-36	-2.6%
<i>Liberty</i>	1370	1366	-4	-0.3%
<i>Newton</i>	1369	1308	-61	-4.4%
<i>Rockdale</i>	1456	1370	-86	-5.9%
<i>Toombs</i>	1435	1392	-43	-3.0%
<i>Whitfield</i>	1515	1432	-83	-5.5%
<i>Average</i>	1413	1364	-49	-3.48%

Source: GaDOE

The data variation for both pre and post operation was similar, with the standard deviations ranging from 0-46 points ($m = 23$) for the pre operation data, and ranging from 0-34 points ($m = 19$) for the post operation data, representing 1.4% and 1.6%, respectively. From the chart, several key results are apparent. First, of the 16 counties assessed, none experienced higher SAT scores after incorporating a CCA into their school system. Second, on average, the consolidated group performance was nearly 3.5% worse in the year(s) following implementation.

Reviewing the data from pre- and post-CCA is insufficient alone, when assessing the potential impact of operating a CCA on student performance. It is quite possible that

other variables play a greater role in the SAT performance which may be overshadowed by this analysis. In order to better isolate the impact of CCA alone, a comparison of SAT trends between the non-CCA counties and the CCA counties aids in determining if any significant difference and in SAT performance exists that can be attributed to operating a CCA, or if it merely represents a state-wide trend.

Figure 8 illustrates the SAT scores throughout the state from 2006 -2013. It should be noted that the majority of CCAs began operation after 2010.

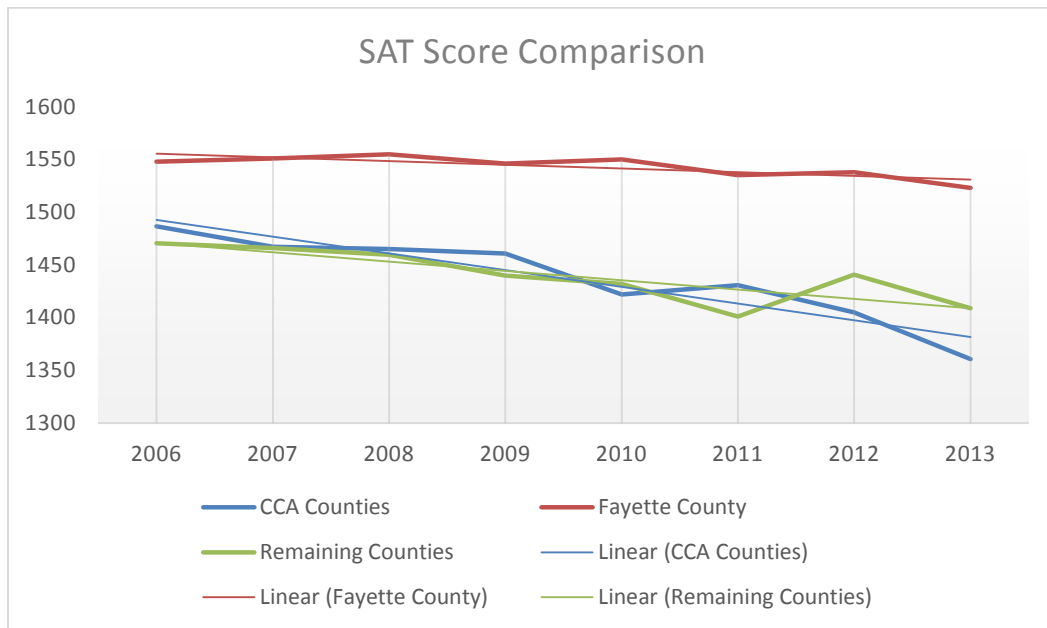


Figure 8. SAT Score Trends

Source: GaDOE

Fayette County consistently outperforms the average of other counties without CCAs as well as the average of all the counties that currently operate CCAs. In fact Fayette County SAT performance annually places in the top three counties in the state of Georgia and surpassed the national average by over 30 points. Interestingly, all three categories (Fayette, CCA and non-CCA counties) have witnessed a decline in scores over

the past decade. This is likely due to the impact that the HOPE scholarship has had in persuading many students who previously did not consider college as a potential avenue thereby expanding the volume of students taking the test. According to the National Center for Educational Statistics (<http://nces.ed.gov/>) only three other states in the nation have a higher percentage of graduates who have taken the exam.

A linear regression analysis was performed on all three curves. Fayette County data produced a trend line that was only slightly downward sloping ($y = -3.5238x + 1559.1$), while the CCA counties and non-CCA counties exhibited a steeper decent ($y = -15.87x + 1508.6$ and $y = -8.8186x + 1479.4$, respectively). Interestingly, the decline in SAT scores for the CCA operating counties was more pronounced than in those counties without a CCA. This finding is consistent with the negative impact illustrated in the pre/post implementation data previously presented.

Given the fact that Fayette County SAT scores already rank among the highest in the state, making improvements that much more difficult (law of diminishing returns), and given the comparatively lower performance trend associated with the counties incorporating CCAs, there is little in these numbers that suggests an appreciable improvement in SAT scores is on the horizon as a result of opening a CCA.

Graduation Rate

SAT scores are only one means of measuring performance. Several of the counties utilizing CCAs cite improved graduation rates since implementation. In Georgia, graduation of high schools students is a priority. Among the states, Georgia has traditionally placed in the bottom quartile for graduation rate since the metric has been in use. Because this metric is such a priority, it was selected as the second criteria for

determining academic performance improvement. Similar to the previous methodology, this analysis focuses on two approaches: 1) comparing CCA counties graduation rate, pre and post operation; and 2) comparing trends with both the remainder of the state's counties, as well as Fayette County alone.

Graduation rates were accumulated by county from 2003-2012 for the 27 counties which currently operate a CCA. Of these counties, eight have been in operation after the study period reported (2012) and two others did not report graduation numbers prior to initiating operations. Data from the remaining counties (n = 17) is consolidated by year and segmented into two categories: pre-CCA and post-CCA. The data was averaged for each category and a consolidated average is determined for both. Table 12 illustrates the results of these findings.

Table 12. Average Graduation Rate Pre- and Post CCA

<i>County</i>	<i>Grad Rate Pre CCA</i>	<i>Grad Rate Post CCA</i>	<i>% Pts Better/ (Worse)</i>
<i>Baldwin</i>	60.77%	64.80%	4.03
<i>Carroll</i>	70.94%	72.30%	1.36
<i>Clarke</i>	59.54%	69.80%	10.26
<i>Decatur</i>	69.98%	71.80%	1.82
<i>Douglas</i>	70.57%	73.70%	3.13
<i>Floyd</i>	74.87%	79.05%	4.18
<i>Glynn</i>	61.88%	74.15%	12.27
<i>Gordon</i>	69.76%	83.65%	13.89
<i>Houston</i>	78.63%	75.87%	-2.76
<i>Lamar</i>	70.00%	77.20%	7.20
<i>Laurens</i>	70.53%	78.60%	8.07
<i>Liberty</i>	72.03%	72.30%	0.27
<i>Newton</i>	73.43%	71.30%	-2.13
<i>Rockdale</i>	78.37%	76.87%	-1.50
<i>Toombs</i>	67.38%	69.70%	2.32
<i>Warren</i>	72.52%	81.30%	8.78
<i>Whitfield</i>	56.55%	71.75%	15.20
<i>Average</i>	69.28%	74.36%	5.08

Source: GaDOE

Unlike the results of SAT scores, where none of the counties experienced a rise in scores, 14 of the 17 counties (82%) operating a CCA witnessed an improvement in graduation rate, four of those enjoying double-digit increases. For the study group the aggregate average improvement over the decade amounted to slightly over five percentage points. In a state where improved graduation rates is a priority, this improvement is significant. To further support the findings, the variability of both sets of data (pre and post) were similar with the pre-CCA rates posting a standard deviation of 6.16% and the post-CCA rates posting a standard deviation of 4.65%.

Again, it is important to better understand the isolated impact of the CCA on the overall graduation rate. In order to gain a better sense of correlation, the graduation rate data for counties operating a College and Career Academy is compared to the remaining counties as well as with Fayette County itself. The results of this comparison are depicted in Figure 9.

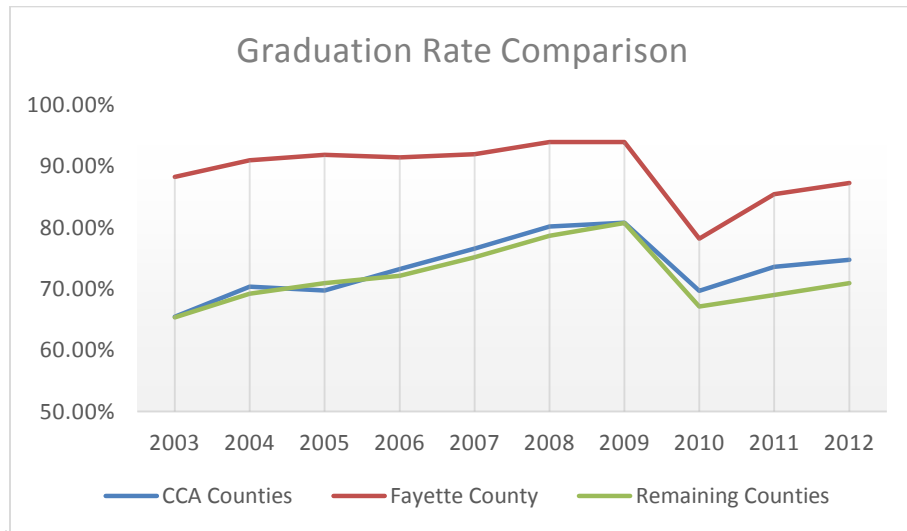


Figure 9. Graduation Rate Trend Comparison

Source: GaDOE

Several important points need to be addressed in this figure. First, the figure illustrates a dramatic drop-off in graduation rates from 2009 to 2010 for all three study groups. This drop-off resulted from a significant change in graduation rate calculation in order to better compare rates from state-to-state. Essentially, prior to 2009, Georgia's statewide graduation rates were inflated due to a computation difference. Following 2009, the new computation was used. Coincidentally it occurred in the same timeframe that many of the state's 27 CCAs were beginning to come on-line. This coincidence was fortuitous as it allows a more accurate representation of graduation rates in the key study period. Second, because of this computation adjustment, it is inappropriate to use the same trend line comparison used for SAT scores. Instead, the analysis focuses on the 2 years following the computation adjustment.

From Figure 10 it is clear that the counties incorporating a CCA experienced a greater improvement in graduation rate than did the counties without a CCA. During that 2-year span the graduation rose at a rate of 2.5 percentage points per year while the rest of the state experienced a rise of only 1.9 percentage points per year. This finding is consistent with the anecdotal sentiment regarding student engagement and its effect on student retention. Since each percentage point in graduation rate represents between 500 and 600 potential graduates each year throughout the state, this difference carries significance, especially in light of the priority Georgia is placing on high school graduation.

As was the case with SAT scores, once again Fayette County graduation rate far outpaces the state as a whole. With a current graduation rate nearing 90% (87.3%) the

law of diminishing returns suggests that it will be more difficult to gain points at their level than at the state-wide level.

Chapter 5 – DISCUSSION reviews these results and discusses ramifications emanating from the findings, culminating by answering the policy objective research question.

Chapter V

DISCUSSION

The intent of this policy objective research is to determine if creating and developing a College and Career Academy in Fayette County is both an *effective* and *efficient* form of education to augment the existing educational structure in the county. Appropriate research data was analyzed and results and findings were presented in Chapter 4. This chapter focuses the policy research/dissertation on some of the key implications of these findings along with identifying and discussing potential solutions to any nagging issues or unanticipated collateral issues. And, as there are often data related issues in many research studies, any limiting variables that were unearthed, are presented and discussed as well.

In conjunction with the above findings, researchers often identify adjacent issues that can evoke additional questions and further avenues of study. Any such uncovered opportunities are described in this chapter, as well any other reflections the researcher noted during this project.

Finally, this chapter closes with a Conclusion and Recommendation section which summarizes the outcomes produced by this policy objective study and, among other things, restates the hypotheses and re-emphasize the results, either validating or invalidating the assumed outcomes.

Overview of the Significant Findings

In order to reach a conclusion regarding the value of a College and Career Academy in Fayette County, it was necessary to view the opportunity from four separate, but inter-related perspectives. Policy decisions such as these require county administrators, primarily the LEAs, to assess the option from the viewpoint of need, cost, benefits and risk. Chapter 4 produced findings in all four quadrants focusing on employer needs, parental satisfaction, cost implications, and performance benefits. These findings are discussed in order.

Employer Needs and Reconciliation

Local Fayette employers were queried to determine if a “skills gap” existed in the county, via an “Employer Needs Assessment” survey in 2013. The survey indicated that employers have skills needs in three distinct categories: 1) occupational specific skills; 2) general employment skills; and 3) generic skills. As the results indicate, employers are unquestionably experiencing a technical occupational specific skills gap in their employment needs, particularly in their future growth projections. The lack of these skills inherent in the existing workforce, coupled with the limited training ground in the current CTAE program, indicates quite clearly that if the county intends to address this real need, additional vocational/technical training opportunities are necessary.

The same outcome however, cannot be inferred regarding the essential general employment and generic skills. In both of these cases, the survey indicated that employers have experienced some level of deficiency regarding these particular skills but in neither case did the need represent more than 15% of the workforce. Certainly employers would hope for that number to closer to zero, but 85% of employees

exhibiting these essential “non-technical” skills seems hardly a moratorium for dramatic change. The results then, indicate only a partial skills gap in Fayette County, that being in occupational specific skills.

Considering the importance of economic growth in communities, employer technical skills needs should not be ignored or undervalued. An available and prepared workforce often fuels the economic engine that provides the community with the financial wherewithal to establish many of the programs often consistent with higher standards of living. This is no less true in Fayette County. However, in order for the employer needs to be met, it is essential that potential workforce candidates and their principle advisors (in this case parents or guardians) also value those skills as necessary and important. Unfortunately for the employers in the county, the data reveals that Fayette County residents’ do not hold the same employment focus. Two separate study findings are key indicators into the residents’ mindset regarding their employment concentration: 1) the high percentage of Fayette County residents who work outside the county; and 2) the higher value placed on a 4-year college education than that of the county’s biggest employers.

The first indicator suggests that a large majority of residents of Fayette County choose to accept employment in jobs outside of their own county primarily because the residents of Fayette County are generally better educated than is needed by county employers and that results in higher paying options outside of the county. The findings further suggest that not only are residents unwilling to fill local lower-paying job positions, but as parents, they are also directing their children away from those

opportunities, and instead guiding them towards a 4-year college track, compounding and fostering this condition.

Fayette County represents a rather unique situation, in this regard. According to the data presented in the previous chapter, nearly 60% of Fayette County residents are employed outside the county. The single largest sector skewing the employment is Atlanta-Hartsfield Jackson International Airport (HJAIA). Fayette County is populated by a large number of residents who work for the airport, the airlines or other aviation related companies which are located in and around HJAIA in Fulton County. Peachtree City, one of the largest cities in Fayette County, was originally founded by airline employees and still maintains an unusually high percentage of households where one or more family members work at the airport. In addition, the results of this study find that household incomes in Fayette County are significantly higher than the average salaries offered by Fayette County employers and as a result income expectations are generally higher. With higher income expectations, it is likely that many of the residents in Fayette County are not as interested in employment in local businesses and industry. Even the recent relocation of Pinewood Studios into Fayette County, which represents a significant employment opportunity, is unlikely to dramatically alter this situation. The majority of full-time jobs openings at Pinewood Studios involve service technicians, carpenters, electricians and other technical positions. While these are strong employment opportunities with reasonable incomes, the core of those jobs do not meet the average income of Fayette County residents, and as a result it is more likely that those particular positions would be more attractive to surrounding county residents, whose income expectations are slightly lower than those in Fayette County.

Broadening this disparity between residents and employers is the difference between educational backgrounds of residents, and educational needs of employers. While Fayette County boasts a strong emphasis on higher education and advanced degrees, with nearly 75% of all county residents having some level of college education, local employers report that nearly two-thirds of all jobs in the county only need a high school diploma, or less. Bachelor degrees and possible “white color” employment is clearly at the forefront of Fayette County residents’ thought processes, which does not match well with employers’ needs in the county. This condition has significant ramifications regarding the sizeable investment necessary to establish a CCA in the county.

The results of this study demonstrate that Fayette County employers categorically recognize the need for additional vocational education for county residents, and are concerned that the lack of technical skills training in the county can become growth limiting. They strongly support technical/vocational expansion in secondary education within the county, regardless of the delivery method. Not so clear, however is the desire among county residents to accommodate the employer needs. In fact, residential focus on higher education indicates otherwise. To help clarify this possible enigma, parental satisfaction with the county’s current education was assessed, with an expanded discussion to follow.

Parental Satisfaction

To better evaluate of the need for more vocational education opportunities in Fayette County, and thus a CCA, it is necessary to understand the position of the key constituent in this assessment: county parents and guardians.

Parents/guardians were surveyed by the county in 2013. Several survey questions involved education in the county, with one question specifically focusing on parental desire for expanded learning opportunities. Parents were allowed to select as many options as they deemed appropriate. From the resulting raw data, this study tabulated and categorized each option selected by the parents as either academic or vocational opportunities to assess whether parents were interested in swinging the pendulum further to the academic side or if they preferred a better balance between vocational and academic opportunities. The results indicate that parents/guardians embrace a very strong interest in expanding non-traditional learning opportunities including “hands on” learning, as well as internships and other learning opportunities outside of the classroom. In fact, nearly 60% of those surveyed supported expanding vocational-type education, while only 40% supported expanding traditional classroom academic learning opportunities such as expanded AP classes. These findings support the premise that countywide, the residents would be more satisfied with a better balance between vocational and academic studies, which is the principle benefit of a College and Career Academy.

Responses from another survey question regarding the current strengths of the county, present a caution, however. Those responses illustrate strong evidence that parents in Fayette County are very satisfied with their current education system, as nearly 90% of all parents indicated that education rated at or near the top of the county’s strengths. This is an important outcome because as is the case with any significant change, risk is inherent. Draconian changes to a highly acclaimed system, such as the

establishing and operating a College and Career Academy, could very well result in unintended consequences that could ultimately do more harm than good.

As a result, this study has found that parents in Fayette County desire increased availability of vocational courses but not necessarily at the expense of their prized school system. This will require the administration to carefully address the expansion issue.

Cost Impact (Efficiency)

Among the many components that a county administration must consider when viewing potential changes to their public programs are the cost implications associated with those changes. Considering the establishment of a College and Career Academy in Fayette County is no exception. One of the more oft expressed concerns over a College and Career Academy is that the added costs resulting from resource redundancy would far outweigh the benefits of the program and in fact, divert funding from existing and otherwise successful programs.

This study reviewed cost-per-student, a readily accessible and recognized measure of educational costs, and compared the average cost prior to introducing a College and Career Academy into their system, against the average cost per student following CCA introduction. The data indicated that there was no measurable increase in costs to counties after implementing a College and Career Academy. However, while these results may fuel optimism regarding educational efficiency associated with CCAs in Georgia, a deeper trend analysis revealed that Georgia counties not operating a CCA experienced a sharper decline in costs over the same period. This outcome reveals that that counties operating a CCA in Georgia have experienced a relative cost increase compared with those counties without a CCA. This finding is consistent with national

studies which indicate that there is an additional cost per student in the range of \$500-\$700 per student, to operate a career academy. Applying this cost increase to Fayette County, even at the lower estimate of \$500 per student, could result in costing the county an additional \$2-5 million per year, should it choose to incorporate a CCA within its school system. Notwithstanding the relatively strong financial situation in the county, this amount of annual investment is troublesome at the very least. For administrators to be willing to increase their annual budget, especially by this amount, they would naturally expect more in return. In education, that return is usually in the form of overall student and school performance.

Improved Academic Performance

Among the more important reasons that an administration would consider adding a CCA to their educational system is the potential for significant academic performance improvement among their high school students. Even if the costs were to increase, a county would still consider “investing” in a CCA to gain higher student success. This study has already illustrated that an increase in cost is likely, but it has yet to discuss the potential for academic performance improvement beyond presenting the pertinent data.

Two different measures were utilized by this study to assess academic performance both prior to and following implementation of CCAs in over 20 different counties. The results were by no means conclusive. SAT scores actually declined after implementation of a CCA and declined at a steeper rate than counties which did not employ a CCA. Graduation rate performance was more encouraging. The average graduation rate improvement in counties employing CCAs was over 5 percentage points. This finding is once again consistent with national studies which reported that graduation

rates rose, and drop-out rates declined, subsequent to the introduction of career academies. Applying the average gains to Fayette County graduation rate would improve their rate to over 92%. It is highly unlikely, however that all of the 5% point gains were due to the CCA, considering that counties without CCAs also experienced a 2% point improvement over the same study period. In addition, the law of diminishing returns dictates that the closer to 100% a measure gets, the harder it is to experience gains. Taking these two issues into account, the gains in graduation rate that Fayette County should expect from adding a CCA are more likely in the 1-2 percentage point realm. Still, with approximately 2,000 seniors every year in Fayette County high schools, this represents 20-40 additional graduates per year. Certainly for those particular students, a CCA appears to be a wise investment, but system-wide, it may not necessarily be an efficient use of limited funds.

Discussion Summary

The intent of this policy study was to determine the value of developing and implementing a CCA, similar to the Coweta County CEC, in neighboring Fayette County, in the near future.

The analysis involved four separate measures of success encompassing the general areas under consideration by most LEAs: cost, need, expected benefits and potential risks. Each of these decision components were researched, analyzed and discussed in detail.

The overall findings were mixed. In the case of need, it is clear that the local employers forecast a strong requirement for additional vocational education in their pool of potential employees. Residents of the county, however, viewed this need quite

differently. While the parents of county students displayed an appetite for some additional educational opportunities outside of the traditional classroom approach, it was equally clear that they also considered status quo to be more than acceptable. In fact, the vast majority of residents view status quo in the county educational system to be among the biggest strengths within the county. Additionally, residents overwhelmingly consider a 4-year college degree to be the minimum level of education that would be considered satisfactory for their children and employment in non-vocational jobs to be the norm. Essentially there is a considerable mismatch between employer needs within the county and parental desires. This situation is problematic for county administrators, as developing a College and Career Academy could divert funds and attention away from already successful programs.

Determining the cost impact of incorporating a CCA in Fayette County is a bit more problematic and requires both forecasting and extrapolation. Since a CCA does not currently exist in Fayette County, forecasting the future cost implications relies heavily on national research findings along with extrapolated results from other Georgia counties throughout the state, which currently operate CCAs. To most casual observers, it would seem natural to assume that creating a separate school, with separate resources and transportation would result in a fairly significant increase in cost-per-student. The results of this study indicate that this assumption, while valid, may be somewhat overstated.

Each of the counties in the state incorporating a CCA were studied and none observed a measureable cost-per-student increase after implementing a CCA. They all in fact, witnessed declining average costs. A broader study of the remaining counties in the state revealed however, that cost-per-student decreases were experienced statewide

during the same period, and at a steeper rate in those counties not operating a CCA, indicating a relative cost increase for CCA counties. The trend line analysis performed in this study indicates that in 2014, counties operating a CCA experienced a \$200 per student additional cost when compared with the non-CCA counties. The trend lines also revealed that this gap has been widening, with no indications that the gap disparity will slow in the near future. The \$200 raw differential actually underestimates the true cost differential because the available data considers the average cost in all grades (k-12), and CCAs only impact the high school costs (grades 9-12). A simple pro rata computation reveals that the average K-12 per student cost difference of \$200, actually equates to a \$650 increase in per student cost attributable to the high school years and thus can be ascribed, at least in part, to the existence of a CCA. These results support nationwide findings regarding career academies and are consistent with other similar expense studies.

Notwithstanding parental satisfaction with the status quo in the Fayette County education system, it is by no means perfect and has its detractors. To be sure, the findings in this study support the perception that Fayette County excels in academic performance, rating highly in both SAT scores and graduation rate, and further emphasizes the importance of that standing among the residents. Detractors point out however, that not all students are succeeding equally well and that there is room for improvement, particularly for those students who feel disengaged. Is a CCA the most appropriate answer? Once again, this study found the outcomes to be mixed across the state. All counties incorporating a CCA experienced a decline in SAT after CCA implementation. In comparison, counties without a CCA also experienced an average decline (although some individual counties witnessed improvement), but at lesser rate.

Over the last 5 years, CCA counties in Georgia have been losing ground to non-CCA counties to point that in 2012, non-CCA county students averaged 25 points higher than their CCA counterparts. Viewing the SAT scoring trend over the last decade provides evidence that this gap is widening. These results support national findings that standardized test scores are not improved as a function of career academies.

Individually, Fayette County also experienced a decline during this period, however it was minimal relative to the other 158 counties, and still leaves the county among the top tier in the state. As a result, this study indicates that merely adding a CCA to the school system will not provide any appreciable improvement to Fayette County's SAT performance. In fact, the SAT findings in Georgia counties operating a CCA, coupled with the diminishing returns of an already high scoring county, dictate that it is more likely to have a negative overall effect, rather than a positive one. With county residents so fixated on 4-year college programs, this outcome represents a serious issue for residents.

SAT scores are only one of the two key measures of academic performance utilized in this policy research. The other revolves around graduation rate. Among several measures, the graduation rate of each county pointedly illustrates the school systems' ability to reach its students, teach them and retain them throughout their full term. While several variables can influence graduation rate, it has been expressed by many researchers that student engagement is a key contributor, and that CCAs provide another avenue to engage students who are otherwise less enamored with school. Additionally, high school graduation is a key criteria for future success in students' lives

and life-long earnings capability and thus is a significant measure of a school system's performance.

This policy study found that in the case of counties incorporating a CCA, graduation rates rose across the board on an average of 5 percentage points. This is a significant rise and can affect hundreds of potential graduates per year in these particular counties, and its value should therefore not be diminished or ignored. However, upon further investigation, the study found that graduation rates for non-CCA counties rose 4 percentage points during the same study time frame, significantly reducing the overall value potentially attributable to the CCA, to roughly 1 percentage point. Still, one percentage point represents nearly 150 graduating seniors statewide. Again, the results in Georgia are consistent with results of the impact on graduation rate for systems utilizing career academies across the nation, though not nearly as dramatic.

Unfortunately, the potential benefit to Fayette County is most likely less than one percentage point due to Fayette County's already strong graduation rate. All of the counties in Georgia utilizing a College and Career Academy produced graduates at a significantly lower rate than Fayette County (74% v. 87%), affording those counties more opportunity for improvement. Fayette County, with its already high graduation rate would most likely experience less improvement due to diminishing returns, resulting in less than 19 additional graduates per year in the county. Significant, of course to those 19, but hardly a referendum for dramatic changes, and reachable through other learning opportunities.

Policy Implications

Public school reform has been at the forefront of the social and political landscape for over 50 years. In the last decade or so, CCAs have entered the debate as alternative approaches to educating the youth in the state of Georgia and beyond. Currently, nearly 30 such schools are either operating in Georgia or have been recently chartered. Among them, the Georgia Central Education Center in Coweta County claims to be highly successful and as a result, is being touted as a model for other academies to replicate.

Policy Implications for Fayette County

Amid the ever changing educational landscape, Fayette County, GA has been considering introducing a Central Education Center-type CCA within the county's borders. The objective of this policy research was to assess the potential impact of, and barriers to, implementing a CCA – similar to the CEC - in Fayette County, GA, within the next several years.

As has been previously noted, this research policy study analyzed the potential impact of a CCA in Fayette County using four generally accepted criteria for administrative decision making in a public domain: community needs, resident need, cost, and student benefit. While several of these criteria exhibited slightly positive or neutral traits, specifically in the area of graduation rate and employer needs, this study found no significant or conclusive benefit should Fayette County decide to develop a CCA over the next several years. This is true specifically in light of the historical success of the county's school system and the limited CCA performance data available. To be sure, some individual students would benefit from the existence of a CCA within the

county' borders, but the benefits potentially gained from such a venture do not warrant the risk of such a dramatic departure from an already successful program.

Additionally, the cost of such a significant change to Fayette County's current education policy would introduce upwards of \$5 million to an already stressed education budget. For the 20 or so students that the CCA would retain in the school system, this equates to an investment of nearly \$250,000 per student, hardly an efficient use of funds. While the results of this study clearly indicate that county residents prefer adding to the current vocational curriculum, expanding the existing CTAE program affords the school system the opportunity to address this issue without these significant cost increases, in a much more efficient manner, while keeping true to their continuing success as an educational system. Will CTAE expansion reach all the students at risk in the county? Possibly not, but with more availability of differing technical/vocational pathways, a substantial number of the remaining high-risk students can be better engaged.

Policy Implications for Georgia

It is also clear from the data that several CCAs have been successful around the state. Many of those counties are in rural surroundings with smaller schools and less focus on academic credentials than that of Fayette County. Coweta County is a prime example of their potential success. Fueled by the CEC, that county has not only been able to increase test scores, reduce dropout rate and increase graduation rate, but also has developed an employment base that is supporting the economic engine in Coweta and surrounding counties. Other counties around the state have also experienced similar benefits, particularly in graduation rate, which studies indicate has strong correlation to career earnings.

The principle implication of this study as it pertains to the overall state of Georgia is the need to view such opportunities on a county-by-county basis. Rural, suburban and urban demographics, as well as local economies, have wide ranging differences which carry a significant impact on the potential success of a College and Career Academy. Fayette County is rather unique in these elements and is more likely the exception in Georgia, rather than the rule. To apply the findings associated with Fayette County universally throughout the state would be a considerable mistake.

National Policy Implications

Nationally, career academies have been growing at a rapid rate. The vast majority of these academies are school-within-a-school programs that intermix academic curricula with vocational classes. As a result, the logistics associated with separate CCAs are minimized.

Given the unique demographics of Fayette County, GA, it would appear inappropriate to try to extrapolate the findings in this policy objective across the nation. Workforce needs vary greatly from region to region as do their necessary technical skills. In the Southwest, the need for agricultural workers far outweighs the need for college graduates. In Silicon Valley the reverse is true. In the upper Midwest, where manufacturing is still the basis for the local economy, it is quite likely that vocational/technical expertise is in great demand.

Similar to the Georgia, but even more so nationally, it is essential that educational opportunities such as CCAs, be individually assessed and customized to fit local needs. County Boards of Education have been assessing opportunities for nearly two centuries in

this country, with a track record of success and as a result should continue to lead this charge.

Limitations of the Study

Overall, the study results provide strong indications, yet it is important to note that this study also absorbed several limiting issues. These limitations generally revolved around the availability of data, the differences in county demographics as well as educational goals, and the general nature of forecasting past performance on future results.

For instance, it was pointed out that cost data among counties is only accumulated and tabulated on a K-12 basis. There is little, if any, data available for high school grades only, leaving the K-12 data as a flawed proxy for cost assessment. Even the Chief Executive Officer of the Georgia CEC, a program leader in CCAs in Georgia, expressed his frustration over the lack of discrete costs available.

In addition, the measure of graduation rates, one of the principle benefit areas in favor of CCAs, has undergone some dramatic changes in recent years to better align this metric with the majority of the remaining states. The impact of these measure changes on the overall results is not quite known, making comparisons difficult and open to critique.

Finally, the single biggest limitation of this study involves the rather unique demographics surrounding Fayette County. As has been pointed out, Fayette County represents an outlier when compared to the vast majority of counties in Georgia. It is not a metropolitan dominated county, although its residents primarily work in a metropolitan area (reaping the higher associated incomes). Unlike most counties with CCAs, it is not a rural or agrarian county, although land is abundant in Fayette County. Instead it more

suburban in nature with a high percentage of college graduates and expectations of more in the future. All this results in a county of college-educated, economically advantaged residents, with significant leverage over their own educational system, who have enjoyed school performance at a rate among the highest in the Georgia. This situation creates difficulty in projecting results from dissimilar counties onto Fayette County.

Recommendations for Further Research

Several opportunities for further research became apparent during this study. Among the more pertinent include a study on the impact of using industry leaders as uncertified teachers in the classrooms of CCAs. Because a charter contract often times provides this level of flexibility, many CCAs employ non-certified instructors. Given the recent educational reform focus on teacher quality, this particular structure represents an area of risk and should be studied further.

Another area of research opportunity that could provide strong impetus for engaging in CCA activity is in the area of “dual enrollment.” Several CCAs in the state have begun to incorporate a dual enrollment program with local colleges and universities in order to make the CCA more attractive to students and parents. Research on the success of these students after reaching college could also be a benefit to potential CCA initiatives.

Conclusion and Recommendation

This policy research/dissertation began by introducing the reader to the concept of career academies as a foundational component of modern educational reform in America. Significant research has been undertaken regarding the legitimacy of career academies and other reform movements in recent years, and several earlier studies were presented in

a literature review, as either support of, or opposition to, these movements. For the past 2 years, Fayette County, GA has been considering introducing a specific form of career academy known as a College and Career Academy into its already highly-regarded educational system. The policy objective dissertation presented here investigated the potential for a CCA as a positive supplement to student learning at the high school level in Fayette County, primarily as a replacement for the existing CTAE program. The basis of this policy objective dissertation was to answer the research question:

Would establishing College and Career Academy in Fayette County, similar to the CEC in Coweta County, be an *efficient* and *effective* form of education for its constituency?

Four separate and distinct hypothesis involving the key decision criteria of community needs, potential cost, and expected benefits, were studied and assessed to determine the outcome.

The research findings surrounding student performance determined that adding a College and Career Academy to Fayette County in the near term would provide an expansive vocational/technical curriculum, reaching far more of the county's high school students than the current CTAE program, which in turn, would result in a slightly incremental improvement in graduation rate in the county. In addition, the findings also demonstrated that local employer workforce needs would be better met should the county adopt a CCA. Parental desires were less optimistic. While many parents in the county are enticed by the thought of expanding "hands on" learning and vocational-type programs, a large portion simultaneously indicated their desire to expand traditional academic programs, as well. In a more telling finding, parents rate the current education system

extremely highly, bring into question their willingness to veer from an already successful path. As a result, this study finds that adding a College and Career Academy to Fayette County's educational system would be *mildly effective*, by aiding a small group to reach graduation.

Effectiveness is only part of the assessment that county administrators must make when assessing significant policy changes. The research question, and the ensuing study, also focused on efficiency as a decision criteria. Strong decision-making generally requires that in order to justify considerably changes in policy, any benefits gained must be worth the added cost. In this case, the study forecasted that adding a CCA to the Fayette County school system would increase the education budget upwards of \$5 million annually. For the relative few county students who would gain benefit from this investment, the additional cost associated with introducing and developing a CCA in Fayette County is determined to be an *inefficient* use of taxpayers' dollars.

As a result of this policy objective dissertation findings, it is recommended that Fayette County decline the current proposal to develop its own CCA and instead focus its efforts on gaining the benefits modifying and expanding the CTAE program already in existence. Specific areas of potential modification include expanding CTAE offerings/pathways, improving availability of those offering to all students, and providing access to a larger pool of student within the county using county transportation. This solution, though possibly not quite as effective as introducing a CCA, would be significantly more efficient and limit the risk of negatively impacting an already successful educational system.

Finally, it is important to note that the results of this policy study should not be viewed as a complete moratorium on CCAs nor should it act as a deterrent from other counties investigating its potential. Many counties within Georgia have experienced strong and measurable benefits from operating a CCA within their borders. Differing demographics, combined with the success of the current school system in Fayette County dictate a more measured approach for Fayette administrators at this time. Should those components experience significant change or deterioration over time, Fayette County would be well served to revisit this successful program.

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APPENDIX A:

Fayette Visioning Initiative Survey Demographics

Fayette Visioning Initiative Competitive Assessment Survey Demographics

Demographics were self-reported by the survey respondents and were anonymous.

FAYETTE COUNTY AND SURVEY DEMOGRAPHICS

	Fayette County	Survey
AGE		
0-17	24.3%	0.4%
18-24	8.3%	1.5%
25-44	20.1%	26.1%
45-64	32.8%	54.9%
65+	14.6%	17.1%
RACE/ETHNICITY		
White	66.8%	76.6%
Black	20.6%	13.0%
Hispanic	6.7%	1.4%
Native American	0.1%	0.5%
Asian or Pacific Islander	4.6%	1.2%
Other	1.2%	1.8%
Prefer not to Answer	N/A	5.7%
RESIDENCE		
Brooks	0.6%	2.1%
Fayetteville	14.9%	32.3%
Peachtree City	32.3%	36.7%
Tyrone	6.4%	7.5%
Woolsey	0.1%	1.2%
Unincorporated	45.6%	20.2%

Source: US Census Bureau and Fayette Visioning Initiative Community Survey

APPENDIX B:
Institutional Review Board Exemption