ABSTRACT OF CAPSTONE

George L. Aulenbacher

The Graduate School
Morehead State University
April 8, 2016
EFFICACY OF THE SENIOR YEAR FOR ADVANCED STUDENTS:
THE IMPACT OF FIELD BASED LEARNING EXPERIENCES, INTERNSHIPS,
AND COLLEGE PARTNERSHIPS

Abstract of capstone

A capstone submitted in partial fulfillment of the
Requirements for the degree of Doctor of Education in the
College of Education
At Morehead State University

By

George L. Aulenbacher
Charleston, West Virginia

Committee Chair: Dr. Michael W. Kessinger, Associate Professor
Morehead, Kentucky
April 8, 2016

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ABSTRACT OF CAPSTONE

EFFICACY OF THE SENIOR YEAR FOR ADVANCED STUDENTS: THE IMPACT OF FIELD BASED LEARNING EXPERIENCES, INTERNSHIPS, AND COLLEGE PARTNERSHIPS

The purpose of this study was to seek input from a group of high achieving students on the efficacy of the senior year while using field based learning experiences, internships, and college partnerships as a means to provide alternative learning experiences. A student survey and students portfolio’s were used to investigate the impact of alternatives to the senior year. Questions were open and close ended which provided strong data from future implementations. The respondents indicated field based learning experiences were a great opportunity an intensive one day overview. Internships provided opportunities to apply knowledge and network. College partnerships provided flexibility in scheduling opportunities, college visits and access to university resources.

KEYWORDS: Efficacy, Senior Year, Field Based Learning Experiences, Internships, and College Partnerships
EFFICACY OF THE SENIOR YEAR FOR ADVANCED STUDENTS: THE IMPACT OF FIELD BASED LEARNING EXPERIENCES, INTERNSHIPS, AND COLLEGE PARTNERSHIPS

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<thead>
<tr>
<th>Name</th>
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<tbody>
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CAPSTONE

George L. Aulenbacher

The Graduate School
Morehead State University
April 8, 2016
Efficacy of the Senior Year for Advanced Students: The Impact of Field Based Learning Experiences, Internships, and College Partnerships

Capstone

A capstone submitted in partial fulfillment of the Requirements for the degree of Doctor of Education in the College of Education At Morehead State University

By

George L. Aulenbacher
Charleston, West Virginia

Committee Chair: Dr. Michael W. Kessinger, Associate Professor of Education
Morehead, Kentucky
April 8, 2016

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DEDICATION

To my wife, Traci, who has been with me since February 9, 1988. She has been my inspiration, my drive and my focus. She has made me realize that anything is possible.
ACKNOWLEDGEMENTS

The following quote by Steve Prefontaine is the way I try to live my life: “To Give Anything Less Than The Best Is To Sacrifice The Gift.”

To my wife, Traci, and our three children, Emma, Sam, and Tessa – thank you for being my inspiration to keep going. To my parents, George and Evalee, who have been loving and supportive parents.

To my committee who have been a significant part of my push to finish this journey. To Dr. Michael Kessinger for opening the door a little further each semester. To Dr. Carol Christian for support and direction in the beginning. My appreciation to Dr. Joyce Stubbs for agreeing to serve on my committee.

To Dr. Mickey Blackwell for the guidance since August of 1998 – thanks for the opportunities to learn as a teacher, assistant principal, and principal, the conversations at bus duty, ball games, and meetings, and friendship that will be lifelong!

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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>List of Tables</td>
<td>13</td>
</tr>
<tr>
<td>Chapter 1: Introduction</td>
<td>14</td>
</tr>
<tr>
<td>Statement of the Problem</td>
<td>17</td>
</tr>
<tr>
<td>Significance of the Capstone</td>
<td>18</td>
</tr>
<tr>
<td>Context of the Study</td>
<td>18</td>
</tr>
<tr>
<td>Background of the Capstone</td>
<td>20</td>
</tr>
<tr>
<td>Achievements</td>
<td>23</td>
</tr>
<tr>
<td>Summary</td>
<td>23</td>
</tr>
<tr>
<td>Guiding Question</td>
<td>24</td>
</tr>
<tr>
<td>Definition of Terms</td>
<td>24</td>
</tr>
<tr>
<td>Chapter 2: Review of Literature</td>
<td>26</td>
</tr>
<tr>
<td>Introduction</td>
<td>26</td>
</tr>
<tr>
<td>Field Based Learning Experiences</td>
<td>28</td>
</tr>
<tr>
<td>Internships</td>
<td>30</td>
</tr>
<tr>
<td>College Partnerships</td>
<td>35</td>
</tr>
<tr>
<td>Summary</td>
<td>41</td>
</tr>
<tr>
<td>Chapter 3: Methodology</td>
<td>43</td>
</tr>
<tr>
<td>Guiding Question</td>
<td>43</td>
</tr>
<tr>
<td>Context of the Capstone</td>
<td>43</td>
</tr>
<tr>
<td>Student Sample</td>
<td>46</td>
</tr>
</tbody>
</table>
Appendix A: WVU University Article ................................................................. 21
Appendix B: Smarter Balanced Assessment Scores 2014-15 ...................... 46
Appendix C: Survey Monkey ................................................................. 51
Appendix D: Survey Request Kanawha County Schools 2015 ................... 52
Appendix E: IRB Approval Form .............................................................. 52
Vita .............................................................................................................. 97
LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 1</td>
<td>West Virginia Family/Student Financial Information</td>
<td>38</td>
</tr>
<tr>
<td>Table 2</td>
<td>West Virginia Family Education</td>
<td>39</td>
</tr>
<tr>
<td>Table 3</td>
<td>West Virginia Average GPA and ACT Scores 2014</td>
<td>39</td>
</tr>
<tr>
<td>Table 4</td>
<td>GPA Distribution</td>
<td>40</td>
</tr>
<tr>
<td>Table 5</td>
<td>West Virginia Selected High School Curriculum</td>
<td>42</td>
</tr>
<tr>
<td>Table 6</td>
<td>George Washington High School Total Enrollment</td>
<td>45</td>
</tr>
<tr>
<td>Table 7</td>
<td>Enrollment Composition George Washington High School</td>
<td>46</td>
</tr>
<tr>
<td>Table 8</td>
<td>Four Year and Five Year Graduation Rates</td>
<td>48</td>
</tr>
<tr>
<td>Table 9</td>
<td>Demographic Information Gender, Race, and SES</td>
<td>54</td>
</tr>
<tr>
<td>Table 10</td>
<td>Field Based Learning Experiences Survey Questions</td>
<td>56</td>
</tr>
<tr>
<td>Table 11</td>
<td>Internship Survey Questions</td>
<td>58</td>
</tr>
<tr>
<td>Table 12</td>
<td>What types of internship are you interested in?</td>
<td>58</td>
</tr>
<tr>
<td>Table 13</td>
<td>College Partnership Survey Questions</td>
<td>60</td>
</tr>
<tr>
<td>Table 14</td>
<td>What type of post-secondary education do you plan on attending?</td>
<td>61</td>
</tr>
<tr>
<td>Table 15</td>
<td>College Credits</td>
<td>61</td>
</tr>
<tr>
<td>Table 16</td>
<td>Of the three experiences, rank in order their relevance to you</td>
<td>64</td>
</tr>
</tbody>
</table>
Chapter 1

Introduction

Educators continue to actively explore curriculum offerings, school effectiveness, and the quality of the high school experience in order to make learning more effective, meaningful, and rigorous. According to Schulten (2013), many students across the nation enter their senior year of high school with the required number of credits for graduation already completed. With numerous school obligations and activities, as well as students having other personal obligations such as employment, social activities, and other commitments, all too often the senior student schedule is laden with meaningless courses and little rigor that perpetuate the phenomenon commonly referred as the senior year slump or senioritis (Kirst & Venezia, 2004; Sizer, 2002). Questioning the effectiveness of requiring students to stay in high school for four years, Schulten suggests that the senior year be filled with alternatives such as internships, work experiences, early graduations, or college courses.

Schools need to enhance the engagement of students in relevant and rigorous learning experiences in order for seniors to graduate from high school equipped with the skills needed to be successful in the colleges and careers of the 21st century (Battistict, 1997; Bolstein, 1997; Eccles, Midgley & Wigfield, 1993; Green, Miller & Crowson, 2004, National Commission on the High School Senior Year, 2001; Sizer, 2002).
The College Board indicated the second semester of the final year of high school evolves into a year focused more on socialization and mischief than the pursuit of academic rigor (The College Board, 2011). The senior year becomes a year of easy coursework and too much down time (Cavanah, 2012). For high achieving and advanced students, the problem is further exacerbated by mandated state policy on “seat time” for students to be physical present in school and completion of required credits in order to graduate (Cavanah, 2012). As a result, advanced students remain in school with more irrelevant experiences, routine schedules, and mundane student course loads.

Asch (2010) calls for secondary schools to offer more apprenticeships and programs that assist in developing real world skills, enabling non-college bound students to be more successful following graduation. Leon Botstein (1997) states, “The traditional high school is an out-of-date strategy and system. In terms of curriculum, high schools remain in a useless middle ground that helps neither fast nor slow learners” (p. 44). Botstein continues “our schools fail to compete for the attention of our young people, who mature earlier and are given adult freedom sooner than they did a century ago” (p. 44).

The National Commission on the High School Senior Year (2001) final report called for alternatives to the traditional senior year and encouraged schools to develop projects, internships, and college level-courses in an effort to ensure that the high school diploma represents more than “simply recognition of seat time accumulated” (p. 16). Innovative learning opportunities that develop critical thinking and problem
solving skills are recognized as tools for success in the 21st century (Perkins, 1995). Students will need to know how to transfer skills and knowledge in to real world applications in order to develop cognitive skills (McTighe & Wiggins, 2012). These skills will enable understanding and critical thinking, which will lead to “economic productivity and competiveness in the world dependent on workers who are skillful thinkers and learners” (Perkins, 1995 p. 33).

Csikszentmihalyi & Schneider (2000) conclude,

We may not know what jobs will be available to young people ten years from now: We do not know what knowledge they require to ensure they will have a productive, lifelong career. But to what extent that teenagers have had the experiences that demand discipline, require the skillful use of the mind and body and give them a sense of responsibility and involvement with useful goals, we might expect the youth of today to be ready to face the challenges of tomorrow. (p. 19)

Educators need to understand the challenging and changing school environment. Students are not just competing with classmates in the same school or state but rather competing with students nationally and globally. With the advances in technology, the world market is changing and how schools prepare students must change with it.

Schools have an opportunity to redesign and rethink the senior year of high school particularly for advanced students. Student engagement has been linked to high academic performance (Connor, 2009; Greene et al., 2004; Marks, 2004; Sousa,
Furthermore, engagement is found to improve performance for excelling students as well as diverse populations (Marks, 2004). Some literature on the high school senior year also suggests that there is a direct correlation between the levels of engagement and college or career readiness (Jensen, 2005).

A major predictor of future college success is the level of rigor in students’ high school curriculum (ACT, 2005; ACT 2007; Adelman, 1999). There are many ways to increase the rigor; revamping of the curriculum, raising the graduation requirements, looking at state mandated assessments, and providing college/work related experiences while in high school. As schools address the gaps of diverse populations, they can no longer ignore the needs of advanced students. This capstone therefore, elected to examine three alternatives to the typical senior schedule to increase rigor, relevance, and engagement the senior year for advanced students using field based learning experiences, internships, and partnerships.

Statement of the Problem

The purpose of this capstone is to investigate and analyze the impact of field based learning experiences, internships, and college partnerships on the efficacy of the senior year of high school for advanced students. The senior year of high school, particularly for advanced students is wasted on meaningless tasks that hinder college and career readiness (Cavanah, 2012). For many high school seniors, 12th grade is of minimal value in preparing them for postgraduate opportunities of the 21st century. Advanced high school seniors would be better served to engage in inquiry based
learning with real world application of knowledge through field based learning experiences, internships, and college partnerships (Wagner, 2008).

**Significance of the Capstone**

George Washington High School (GWHS) is a secondary school serving 9-12 grade students, located in Charleston, West Virginia. The following findings and results can impact how GWHS provides authentic, real world experiences to students particularly advanced students who have an interest in a variety of course offering which include Advanced Placement, dual credit, and college courses. The immediate impact will provide students at GWHS the opportunity to experience the work place, provide college courses within the school building at a lower cost and provide internships. Ultimately, the capstone will provide a roadmap for schools across Kanawha County, West Virginia and nationally to evaluate students at all levels while using current curriculum offerings alongside field based learning experiences, internships, and college partnerships that can be used as a means to enhance preparation of students who are college and career ready.

**Context of the Study**

Kanawha County School district is located in Charleston, West Virginia with approximately 250,000 residents. Our economy is supported by a variety of industries such as chemical, industrial, and manufacturing. The size of the county is approximately 105 square miles with a mixed terrain of mountains and river valley. Currently, Kanawha County Schools serves about 28,000 students from a variety of ethnic backgrounds and economic situations. There are 52 elementary, 11 middle,
eight high schools and three career and technical schools. There is one alternative school that serves both middle and high school students.

George Washington High School (GWHS) is located within the city limits of Charleston, West Virginia. The area is known as “South Hills” which has an affluent reputation. The school has one middle school feeder and there are eight elementary schools that feed that middle school. All of the schools achieve standardized tests scores and average yearly progress (AYP). George Washington High School has a 9-12 grade configuration with a nine class periods per day. Each class is 45 minutes with a five-minute transition. Because of schedule and course offering, students have the ability to have off periods during the school day. Off periods are designed to allow students the opportunity collaborate and study during the day.

Currently, there are approximately 1,100 students who attend the school. The Caucasian population represents 95% percent of the total population. Twenty percent of the student population would qualifies for free/reduced lunches. The special education population is approximately 10%. Newsweek (2015) rated George Washington High School as the 419th best high school in the United States and the number one high school in West Virginia.

There are 55 professional staff and 20 service personnel. All of the professional staff holds a bachelor’s degree and 50% of the staff holds a master’s degree. According to our Kanawha County Schools staff information, which outlines certification and seniority dates there is a balance of both veteran and new professional employees. Over the last five years there has been little turnover other
than retirements. Although, during the 2014-15 school four professional employees moved out of state for other employment opportunities.

George Washington High School offers a variety of courses and follows the West Virginia required curriculum for all subjects. GWHS offers 19 Advanced Placement (AP) classes each year. GWHS has also added four additional dual credit courses and 13 college courses, which goes well beyond the required state curriculum offerings.

In the spring of 2015, GWHS partnered with West Virginia State University in a one plus three partnership where GWHS junior and senior students could earn college credit at a discounted rate of $75.00 per three-credit hour course. During the 2013-14 school year GWHS partnered with our second Career, Technical Educator Center, Ben Franklin offered additional career technical education tracks and added Power and Energy (technical class) during the day for the 2015-2016 school years at George Washington High School.

Overall, GWHS ranks in the top 1% in West Virginia in Reading Language Arts and mathematics. On the 2014-15 Smarter Balanced Assessment results, GWHS scores were twice the state average (ZoomWV, 2016). Also, the school has been rated the number one AAA (large school: 900+ students) high school athletic program in West Virginia and received the Gazette Excellence in Sports Award (GEISA) Trophy (Charleston Gazette, 2013).

**Background of the Capstone**
After a review of high school senior transcripts during the 2011-12 school year, it was evident that a number of seniors had achieved enough credits by the end of their junior year to graduate, but our county system required students to take 12th grade English, math and science. There are some exceptions, but rarely do students take advantage of early graduations. In the past five years there has only been three students who have chose early graduation. Two of them went on and enrolled in a four year university and one chose to join the military. As part of the request for early graduation, students must seek and gain approval from our county superintendent.

The growth of college courses offered at GWHS have increased over the last two years with partnerships with West Virginia State University, Bridge Valley Community College, and West Virginia University. In order to address the problem of “senioritis” GWHS created the Patriot University program in 2012-2013. Patriot University provided the initial framework to implement this capstone project that included field based learning experiences, internships, and college partnerships. In November of 2012, Dr. Garbutt, Dean of the Honors College at West Virginia University said, “When high achieving students are academically challenged in high school, they are more likely to succeed when they reach a university, especially in the STEM (science, technology, engineering and math) fields” (wvutoday.edu, p. 10) (Appendix A).

In the beginning stages our, advanced students would apply to be part of the “Patriot University”. After the application process students would then be interviewed for acceptance. The process involved a certain course focus, behavior component and
schedule flexibility. The initiative was implemented in the spring of 2013 with a number of students who applied and were accepted. Patriot University lost its steam with a switch in professional staff and is no longer an option for our students.

Field based learning experiences. Still field based learning experiences, internships and college partnerships continued to grow. In the beginning, field based learning experiences were an opportunity for instructors to take students to a variety of sites. These site trips or field trips, allowed teachers to expand classroom content with experience. Sites included a strip mine, Toyota Manufacturing, Dow Chemical, Bridge Valley Community College, West Virginia University Engineering College, Ace White Water Adventure, and New River Gorge Bridge Tours. These site visits were established at the request of students and instructor input. The opportunities allowed students to see and apply classroom knowledge. Also, trained professional were on hand to ask and answer questions.

Internships. The second piece of high school reform implementation was the internships. Internships opportunities were established through field based learning experiences visits, community partnerships, and parental connections. Once a business or industry agreed to participate in the internship process they were added to an internship list. Internships sites were a connection between the Engineering 101, physics, chemistry, and AP Calculus classes. Curriculum offerings created a common connection between GWHS and the student and internship experiences.

Students were then provided with a list of internship sites that included 5 public agencies and 4 private companies. The Department of Environmental
Protection fit for our students who had completed AP Biology or AP Environmental Science. Department of Highways provided a learning experience for our AP Physics students. West Virginia Air National Guard, R.C. Rogers Corporation, Walker Machinery, Coal River Energy, and Eastern American Energy were great sites for the students who were enrolled or competed an engineering course or who were interested in advanced math courses.

Students then registered for either a one, two, or three-hour Internship 189 credit course through West Virginia University. Students then committed to 15, 30, or 45 clock hours to the internship experience. Students could choose any intern site based on interest area that included industrial, civil, mechanical, environmental, chemical, petroleum, electrical and computer engineering.

**College partnership.** College partnerships continued to increase as well. The first partnership occurred with West Virginia University Engineering College. This partnership allowed students to take Engineering 100, 101, and 102 if they met the math requirement or could be completed as a high school elective. This partnership happened as a result of a number of our students who enroll and attend WVU each year.

The partnerships provided opportunities to visit a college campus, take tours, and talk with professors. Additional college partnerships blossomed after our administrative team began to reach out to our area universities in an attempt to maximize the resources of Marshall University, University of Charleston, West Virginia State University, and West Virginia Tech. The partnerships allowed
additional college course offerings, academic competitions, and site visits. College partnerships increased our student advising opportunities. Opportunities included career awareness, small group counseling, courses guidance, and academic planning. These experiences provided students with valuable and meaningful learning opportunities outside of the high school classroom.

**George Washington High School Achievements**

According to a number of sources, (ACT, 2015; Smarter Balanced, 2015; College Board, 2015; Newsweek, 2015, WVDE, 2015) George Washington High School had been recognized as one of the top achieving high schools in West Virginia over the last decade. GWHS has had a high population of advanced students when 13.45% of the senior classes were recognized as National Merit semi-finalist in 2013. The college going rate is approximately 97% of the senior class. Advanced placement numbers have increased 3% each of the last three years with approximately 73% of the students scoring a three or higher on the Advanced Placement exam with approximately 350 sitting for exams. Senior transcripts indicate 49.8% of the graduating class earned enough credits to graduate by the end of the first semester of their senior year. These data sets create a sense of urgency to address the needs of high functioning students. School leaders recognized the need to develop an initiative to address efficacy of the senior year for advanced students.

**Summary**

In response to the senior year dilemma, this capstone project created and implemented an initiative to immerse advanced students with an expressed interest in
a wide variety of careers with a preliminary focus on engineering with the option for expansion in later years while moving into more field based learning experiences, internships, and college partnerships. These three areas were selected with the goal of increasing student rigor, engagement, and relevance.

**Guiding Question**

This study will address the following guiding question:

*How have field based learning experiences, internships, and college partnerships impacted student perceptions on the level of rigor, engagement, and relevance during the senior year of high school?*

**Definition of Terms**

**College Partnerships**- Relationship between individuals or groups that is characterized by mutual cooperation and responsibility, as for the achievement of a specified goal.

**College and Career Readiness**- “Students exit high school prepared for success in a wide range of high-quality postsecondary opportunities. Specifically, college and career readiness refers to the knowledge, skills, and dispositions needed to be successful in postsecondary education and/or training that lead to employment.”

(West Virginia Department of Education, 2015 p. 1)

**Dual Credit**- High school students usually juniors and seniors enroll in a college course that allows them to earn both high school and college credit. Dual credit courses are routinely much cheaper than college courses.
Field Based Learning Experiences- Learning by doing, working outside of the common area and focusing more on a specific task. i.e.- working (shadowing) with a qualified engineer in a specific field of study.

Internships- A supervised learning experience in which students apply their prior knowledge to develop new skills in a professional setting, working with industry in an engineering area of interest.

STEM- An initiative provides support for the following academic areas, which are Science, Technology, Engineering and Mathematics
Chapter 2

Review of Literature

This chapter contains the description and delineation of literature that served as the basis of support for the action research plan implemented at George Washington High School from 2013 to 2015. The review of literature includes an exploration and summary of the following three areas for the capstone project: (1) field based learning experiences, (2) internships, and (3) college partnerships.

Today’s high schools must examine and rethink the senior year experience for all students. For this practitioner’s project, a group of advanced students, defined as those students who have completed required high school credits, maintained a strong high school academic schedule that included honors, Advanced Placement and college/dual credit courses. A different plan of action was needed to keep them energized and engaged while continuing to implement field based learning experiences, internships and college partnerships as additional learning opportunities while still maintaining the high school experience.

The research on field based learning experiences provides an avenue for the revised senior year learning activities. Field based learning experiences may be a simple, one-day, on-site visit or multiple experiences over a number of days. They are very specific in their purpose with a quick glance at an area or job. An effective field based learning experience has the potential to generate future internship opportunities.
In addition, another area for consideration is internships and how it promotes rigor, relevance, and engagement. Littke (2004) defines internships as “real work integrated into the everyday world of school” (p. 24). The internship serves as a unique opportunity for the student to put learning into practice. Burnsed (2010) outlined the importance of internships at the higher education level and the impact internships have had on future employment opportunities. In 2000, more than 1.2 million people received bachelor’s degrees in the United States. In 2010, the number is expected to rise 30 percent to more than 1.6 million, according to estimates by the National Center for Education Statistics (Burnsed, 2010).

The question that is being asked by these large number of college graduates is: What is it that we need to do or offer that will competitively separate us from our peers? The answer is internships. University officials and employers almost universally maintain the effective impact of an internship, whether a single experience or of a series of opportunities upon future employment. Internships can set students apart from his or her peers before graduation, an integral part to finding meaningful employment in today’s seemingly impenetrable job market. More than ever, both colleges and high schools across the county are encouraging students of all majors to participate in internships, and several colleges have even added them as part of their graduation requirements (Burnsed, 2010). The traditional high school can adopt internship programs that mirror universities across the country. Thus, high schools can access already established internships and provide high school students
additional exposure before they enroll in an already overcrowded university experience.

College partnerships allow high school students to plan differently. They provide additional opportunities for dual credit or college courses that may not be offered at the county level. They also allow the students to plan differently when choosing Advanced Placement (AP) courses while still in high school. In addition to the courses, college partnerships could offer students the opportunity to visit research facilities, tour campus programs, have access to college instructors, and “experience” college at a different level. The research on college partnerships, often evident through dual credit or college courses offered during the senior year, is invaluable to propagate higher order thinking and learning (McMannon, 2000).

Field Based Learning Experiences

The school field trip (field based learning experience) has had a long history in American public education. For decades schools have encouraged to visit a variety of institutions that include, businesses, industry, art, history, and science experiences (Greene, Kisida, & Bowen, 2014). A field based learning experience is typically a one day specific educational event but may cover multiple days. These experiences are purposeful in their approach and providing an intensive yet relevant learning experience for all students involved.

A study by Cooper, Hutson and Talbert (2011) in Texas described high school science courses that required students to link the content they are learning with future jobs or training. It is called an “essential knowledge” component similar in structure
to a traditional school sponsored field trip. The study detailed 37 seniors in a small rural Texas high school. The researchers were trying to link at-risk behaviors with school field based learning experiences or essential knowledge. The researchers concluded that there is a direct correlation between the curriculum that is being taught with programs and opportunities (Cooper et al., 2011).

Other researchers suggested that an additional study should examine field based learning experiences as effective pedagogy in some rural high schools (Casey, Courage, & Diette, 2012). Weingarten (2012) wrote, “field based learning experiences provide a window to the real world that they don’t get in the classroom, and they can help students understand real-world applications of seemingly abstract topics in math and science” (p. 1). For example, engineers may use formulas taught in Algebra II, calculus, and chemistry classes to illustrate knowledge gained (Koebler, 2011).

Field based learning experiences provide students with a window to real world that they do not get in the classroom. Field based learning experiences provide students with better foundation to apply classroom knowledge and application in an environment outside of the school (Koebler, 2011). Learning outside of the classroom is useful because it demonstrates the applications of classroom learning in the real world, engages students by using authentic tasks and or tools, and teaches them skills that may not be learning at school (Alfred, Charner, Johnson, & Watts, 2013). They are also important moments in learning where students have the opportunity to encounter and explore in an authentic setting and supported by the National Science
Teacher Association (1999). The potential outcomes from field based learning experiences include engagement and interest in a specific area (Kisiel, 2005), affective gains such as more positive feelings towards a topic (Nadelson & Jordan, 2012), and experiences that can be useful long after the visit (Salmi, 2003).

The research on field based learning experiences encouraged the schools to allow students the opportunity. The simple exposure for all students at all levels increases the likelihood of additional learning. Field based learning experiences are an opportunity for students who may not ever have the opportunity to see and experiences something different from the classroom. The field based learning experiences are nothing more than the field trip for high school students to assist with future internships and possible college partnerships.

Internships

Merritt (2008) thoroughly outlined the process of student internships. The author primarily focused on pre-college internships programs especially for the high school student population. Research has shown that experiential-education (internships) have a positive impact on student participants (Merritt, 2008). The two factors that could predict personal growth are opportunities to act autonomously and to develop collegial relationships with adults (Conrad & Hedin, 1981). Experiential learning, such as internships, affects the social, and intellectual development of secondary-school students (Conrad & Hedin, 1981).

The history of student internships or cooperative learning originated in the United States in the early 1900’s (Driscoll, 2006). The initiative created a learning
experience that exposed students to a variety of work experiences. These internships were a result of the need for training of the workforce. Also during the early 19th century, Europe used voluntary apprenticeships for youths who were seeking training for different work experiences to assist with skill area development (Olson, 1993; Snell, 1996). During this time, school systems around the United States combined or replaced internships programs with career academies (Snell, 1996). These academies were developed to provide a clear path for the workforce. Marczely (1982) described an internship program within a Connecticut high school as four different career interest areas where students spent up to four weeks with a supervisor of a job site.

The application for internships can vary from high school to high school and from college to college. High schools tend to focus on internships that are practical in approach while focusing on curriculum need (Littke, 2004). Because of the liability issues that are associated with internship programs, high schools usually assign advisors or teachers to oversee the program and placement of students. If left unadvised, students typically find fewer and less focused internships. Ultimately, internship programs can connect students to after school employment and eventual employment as adults (Haimsom & Bellotti, 2001).

An advantage of an internship is the on-site experience. These experiences allow the students to view the implementation of the learned material. Students see information being put in place and used to solve problems. Internships use learned knowledge and apply it to real world issues. Eighty percent of college-bound student have yet to declare a major according to Dr. Fritz Group (2005) who is the founder of
Mymajors.com. He noted that 50% of those who are in college will change their mind concerning major declaration (Group, 2005). The internship can strengthen academic experience and can build student confidence. The internship could assist with college planning and help students’ transition from high school to college and the future workforce (D’Andrea, 2005).

Cavanah (2012) indicated that some states are decreasing the seat time requirements for graduation which would allow the students additional opportunities to pursue other academic interests such as field based learning experiences, internships, and/or college courses. Currently, there are a number of states who have already made the necessary adjustments to accommodate those students who are moving through high school at the appropriate rate and will graduate on time (Cavanah, 2012). Credits earned and grade level promotion are important ways for schools to look at ways to modify schedules and provide additional learning opportunities for their students. These opportunities for flexible scheduling, and less restrictive seat times provide students with “other” opportunities such as field based learning experiences, internships, and college partnerships.

Asch (2010) calls for high schools to offer more internships as well as programs that assist in the development of career skills for non-college bound students for them be successful following graduation. An internship allows the student to move beyond the confines of the traditional high school schedule and make the real world learning relevant. The internship provides the bridge between academics and work. Dreis and Rehage (2008) contend that senior projects,
community service, and internships assist in the development of leadership skills, independence, and work skills.

Instruction during the internship is an integral part of program success. The direct instruction by a degree or certified worker provides a direct connection between the school and the work environment. Intern projects include a range of practical, sound, and authentic educational experiences that simulate work as well as independent activities (Hendrie, 2004; Littke, 2004). Internships can build a relationship between schools and on site professionals that allow both parties to grow professionally by allowing businesses to build relationships with students and creating connections for future employment.

In many schools, student internship usually takes place during the junior and senior year of high school. It is very important that internships occur in areas in which students have an interest. Students’ individual qualities can be used as a basis to select them for internships (Hirsch, 1974).

Internships can be paid or unpaid based on the time requirement or area being observed. An interesting fact about internships is the willingness for college bound students to predominately agree to take unpaid internships, whereas apprentice students typically take paid internships (Haimson & Bellotti, 2001; Marczely, 1982; Stasz & Brewer, 1998). Theoretically, college students are looking for actual “real world” learning experiences to help build the resume whereas the paid internship or apprentice student is looking to fulfill a hourly or certification requirement (Hendrie, 2004; Littke, 2004)
Student learning that is fostered by internships is experiential in nature and based on the student/mentor relationship. This type of learning is based on active participation with the sponsoring organization and completing enriching, relevant tasks in which experience is central (Webb, Metha, & Jordan, 1992). The idea is that internships will provide an experience that is reflective of actual work experiences world in an actual work environment. The internship combines individual learning while being supported by guidance, help, and support from mentors or other interns. The learning within the internship places an emphasis on problem solving and active workplace interactions.

The educational outcomes are endless with internship programs for high school students. They have the opportunity to develop new, practical, and workplace skills. Students have the opportunity to experience first-hand job values and expectations. They can build interpersonal relationships, communication, and organizational skills while improving organization. They may have the opportunity to learn to work independently, conduct research, and technical writing skills within a group setting. Internships play an important role in keeping students in school while preventing them from dropping out (Cavanaugh, 2004; Littke, 2004; Toch, 2003). Most importantly internships assist students in the planning for their futures and helps in transitioning them to post high school life at college and for future workforce (D’Andrea, 2005; Greifner, 2007; Littke, 2004).
College Partnerships

Literature also suggest ‘senioritis’, a tendency to lessen one’s school-based work output and diminishing focus tends to lead to student disengagement from school during the second semester of their senior year (Connor, 2009; Dreis & Rehage, 2008; Henriksen, 2008; Kirst & Venezia, 2004; Kuh, 2007; Lord, 2001; Sizer, 2002). Research suggests that students lose interest in school and become bored with their studies. This lack of focus can manifest and lead to performance struggles during the freshman year of college. Lord (2001) writes that colleges and states must share some of the responsibility for ignoring early college entrance acceptance procedures and implying that the second semester of the senior year is not relative to academic performance and state standardized testing results (Lord, 2001).

The college partnership allows students the opportunity to experience a college course while still attending high school. The college partnership also allows the students to pay a reduced rate for tuition thus reducing future college expenses. The cost savings eliminates future expenses and opens the door for students to participate in other university experiences such as traveling abroad or taking addition courses.

A joint study by the West Virginia Higher Education Policy Commission (WVHEPC) and the West Virginia Council for Community and Technical College System outlined the class of 2014 High School Senior Opinion Survey. The survey divided the information into five different areas that include academic preparedness, sources of college information, financial aid awareness, collegiate plans, and college
decisions (WVHEPC, 2014). These five areas each lend merit to the need for high school reform. It is estimated for every 100 9th graders in West Virginia, only 43 of them will enroll in college (NCHEMS, 2009). West Virginia’s college going rate still lags behind the nation average of 67% with an improving, but still low 62% (SREB, 2011). Indeed, West Virginia is making improvements, but we must maintain a stronger and more diversified high school experience for all students. Not only are schools falling behind but also the workforce is lacking the necessary “skills” to meet the projected 20,000 jobs needed by the 2018 (Carte, 2015).

The following information in the tables outlines the importance for increased college partnerships at the high school level. Everything from family income, education level, GPA (Grade Point Average), and ACT (American College Test) scores are factors for students to potentially enroll in a two- or four-year college. Two important factors in the development of high school program modification are socio economic status, and level of education of family members. Table 1 outlines West Virginia family/student financial information as reported by the West Virginia Higher Education Policy (2014).
Table 1

*West Virginia Family/Student Financial Information*

<table>
<thead>
<tr>
<th>Family Income</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>$30,000 or Less</td>
<td>32.9%</td>
</tr>
<tr>
<td>$30,001 to 60,000</td>
<td>31.4%</td>
</tr>
<tr>
<td>$60,001 to $100,000</td>
<td>24.0%</td>
</tr>
<tr>
<td>$100,001 or more</td>
<td>11.6%</td>
</tr>
</tbody>
</table>

Free and Reduced Priced Lunch Eligibility

<table>
<thead>
<tr>
<th>Eligibility</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Eligible</td>
<td>48.9%</td>
</tr>
<tr>
<td>Eligible</td>
<td>51.1%</td>
</tr>
</tbody>
</table>


According to the U. S. Census and the WVDOE the median household income for West Virginia was approximately $39,550 and 51.1% of the students qualify for free and/or reduced lunches. These numbers illustrate the need for an increase focus for high school learning alternatives. With high poverty rates reflected by free and reduced percentages, schools must effectively assist at-risk students with educational decisions.

Table 2 indicates 34.1% percent of all students in West Virginia will be first generation college students. The table also details that 43.2% of fathers of West Virginia students identify their level of education as high school or less. The 54.6% of the mothers reported that they attained a high school diploma or less. Both these figures are alarming considering the experiences needed for students to be successful in today’s job market may be limited by parental employment and educational experience.
Table 2:

*West Virginia Family Education*

<table>
<thead>
<tr>
<th>First Generation Status</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Not First Generation</td>
<td>65.9%</td>
</tr>
<tr>
<td>First Generation Student</td>
<td>34.1%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Father’s Level of Education</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>High School or Less</td>
<td>43.2%</td>
</tr>
<tr>
<td>Some College</td>
<td>30.9%</td>
</tr>
<tr>
<td>Bachelors or Above</td>
<td>25.9%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mother’s Level of Education</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>High School or Less</td>
<td>54.6%</td>
</tr>
<tr>
<td>Some College</td>
<td>23.7%</td>
</tr>
<tr>
<td>Bachelors or Above</td>
<td>21.7%</td>
</tr>
</tbody>
</table>


West Virginia students must continue to be challenged in the classroom in order to meet necessary college challenges including admission and acceptance. The cost of tuition, room, board, and the ability to meet workload expectations can be overwhelming for a first generation college student.

Table 3

*West Virginia Average GPA and ACT score 2014*

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>GPA</td>
<td>3.30</td>
</tr>
<tr>
<td>ACT</td>
<td>21.22</td>
</tr>
</tbody>
</table>

As reform takes place in the high school, academic preparedness becomes an important indicator of college-going and college success. Students who exhibit higher GPAs and ACT scores tend to have higher enrollment and college completion rate than those who have lower GPAs or ACT scores (Chenworth & Galliher, 2004). As one author stated, “a rigorous high school curriculum better prepares students for the transition from high school to college curriculum” (Adelman, 1999, p. 23).

Table 4

<table>
<thead>
<tr>
<th>GPA Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School GPA</td>
</tr>
<tr>
<td>1.00 – 1.99</td>
</tr>
<tr>
<td>2.00 – 2.99</td>
</tr>
<tr>
<td>3.00 – 3.99</td>
</tr>
<tr>
<td>4.00 +</td>
</tr>
</tbody>
</table>


Both tables 3 and 4 provide valuable data when applied to high school reform concepts. The idea that 84.7% of our students who enroll in college earn between a 2.0 and 4.0 GPA is outstanding but the question still needs to be asked what must we do to improve the high school experience. The average GPA of 3.30 is above the required GPA for the Promise Scholarship. The average of 21.22 ACT score falls short of the West Virginia Promise Scholarship requirements which requires a 22 ACT composite score, and a 20 minimum in English, math, reading and science (CFWV, 2016).
Table 5 is the high school class selection, highest level of math and number of AP courses taken. These data provide a glimpse into of student potential and the need for better college partnerships. The percentages indicate 87.3% percent of students in West Virginia are either on the Professional or Skilled Pathway with over 62.7% identifying Professional as their choice. In 2014, West Virginia seniors identified Algebra I through Calculus as their choice of math course offerings. Algebra II was the highest percentage with 36.5% of the 2014 class completing it. West Virginia Department of Education (WVDE) does require all students to take four consecutive years of math during high school for graduation. Finally, the number of AP exams taken is low compared to the rest of the United States. The WVDE does require AP course offering but schools do lack the necessary qualified teachers. Less than 9.5% of seniors have taken five or more AP courses during high school.
Table 5

*West Virginia Selected High School Curriculum*

<table>
<thead>
<tr>
<th>Selected High School Curriculum</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Unsure</td>
<td>12.7%</td>
</tr>
<tr>
<td>Skilled Pathway</td>
<td>24.6%</td>
</tr>
<tr>
<td>Professional Pathway</td>
<td>62.7%</td>
</tr>
</tbody>
</table>

Highest Level of Math

<table>
<thead>
<tr>
<th>Highest Level of Math</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than Algebra</td>
<td>0.4%</td>
</tr>
<tr>
<td>Algebra I</td>
<td>1.8%</td>
</tr>
<tr>
<td>Geometry</td>
<td>7.8%</td>
</tr>
<tr>
<td>Algebra II</td>
<td>36.5%</td>
</tr>
<tr>
<td>Trigonometry</td>
<td>24.5%</td>
</tr>
<tr>
<td>Pre-Calculus</td>
<td>16.8%</td>
</tr>
<tr>
<td>Calculus or Above</td>
<td>12.2%</td>
</tr>
</tbody>
</table>

Number of AP Classes Taken

<table>
<thead>
<tr>
<th>Number of AP Classes Taken</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>53.8%</td>
</tr>
<tr>
<td>1</td>
<td>15.5%</td>
</tr>
<tr>
<td>2</td>
<td>10.2%</td>
</tr>
<tr>
<td>3</td>
<td>5.6%</td>
</tr>
<tr>
<td>4</td>
<td>5.4%</td>
</tr>
<tr>
<td>5 or more</td>
<td>9.5%</td>
</tr>
</tbody>
</table>


**Summary**

In summary, the literature related to field based learning experiences, internships, and college partnerships support the need for alternatives to the current learning opportunities commonly offered to high school seniors. High schools must
provide a comprehensive and coordinated program that combines effective field based learning experiences, internships and college partnerships aspects to the schools current offerings and enhanced learning opportunities for their students.
Chapter 3

Methodology

Asch (2010) calls for secondary schools to offer more internships and programs that assist in developing real world skills and enabling students to become more successful following graduation which prompted the development of field based learning experiences, internships, and college partnerships as an integral piece for seniors at George Washington High School (GWHS). This chapter describes the guiding question, context of the capstone, research design, instrumentation, procedures, and summary based on data from George Washington High School and the senior year learning experience.

Guiding Question

The purpose of this study was to investigate the efficacy of the senior year of high school for high achieving students using field based learning experiences, internships, and college partnerships as the means to effectively evaluate the senior year and to make the necessary changes to make it meaningful. This study examined the impact of field based learning experiences, internships, and college partnerships on a number of seniors at George Washington High School.

Context of the Capstone

The study was conducted at George Washington High School (GWHS). As of September 2016, GWHS had an enrollment of approximately 1,100 students in grades 9-12. Table 6 presents the enrollment summary of trend data over the last six years.
The school enrollment data ranges from a high enrollment of 1,138 students during the 2008-09 school year to a low enrollment of 1,096 during the 2009-10 school year.

Table 6

*George Washington High School Total Enrollment*

<table>
<thead>
<tr>
<th>Year</th>
<th>Enrollment Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007-08</td>
<td>1117</td>
</tr>
<tr>
<td>2008-09</td>
<td>1138</td>
</tr>
<tr>
<td>2009-10</td>
<td>1096</td>
</tr>
<tr>
<td>2010-11</td>
<td>1115</td>
</tr>
<tr>
<td>2011-12</td>
<td>1108</td>
</tr>
<tr>
<td>2012-13</td>
<td>1106</td>
</tr>
<tr>
<td>2013-14</td>
<td>1088</td>
</tr>
<tr>
<td>2014-15</td>
<td>1100</td>
</tr>
</tbody>
</table>

Source: ZoomWV 2016

Table 7 provides the number of students enrolled at GWHS as of the second month report for the 2015-16 school years. The enrollment composition of the 1,098 students who are currently enrolled at George Washington High School includes 907 identified as white, 85 are Black, 12 are Hispanic, 80 are Asian, 238 as low SES and 65 are identified as special education. There are 556 females and 542 males enrolled at George Washington High School. These enrollment numbers provide an accurate representation of the student population who attend GWHS.
The 2016, Smarter Balanced assessment results rate GWHS in the top 5% highest achieving high schools in West Virginia (ZoomWV, 2016). The assessment scores for GWHS (2014-15) doubled the state standard in both English/Language Arts and Math. GWHS scored at the 68th percentile in grade 9, 10, and 11 combined which is 35% higher than the state average in ELA and at the 40th percentile in Math all three grades combined which is 20% higher than the state average (Appendix B).

George Washington High School graduation rate continued to increase over the last six years. Many attribute the increase to the perception of Advanced Placement and college options, as well as the continued focus on graduation rates for all students. Table 8 provides trend data for four year and five year graduation rates from 2008-09 through the 2014-15 school years.

Table 7

<table>
<thead>
<tr>
<th>Identity</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>1098</td>
<td>100%</td>
</tr>
<tr>
<td>White</td>
<td>907</td>
<td>82.6%</td>
</tr>
<tr>
<td>Black</td>
<td>85</td>
<td>.075%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>12</td>
<td>.01%</td>
</tr>
<tr>
<td>Asian</td>
<td>80</td>
<td>.072%</td>
</tr>
<tr>
<td>Low SES</td>
<td>238</td>
<td>21%</td>
</tr>
<tr>
<td>Special Education</td>
<td>65</td>
<td>.059%</td>
</tr>
<tr>
<td>Female</td>
<td>556</td>
<td>50.6%</td>
</tr>
<tr>
<td>Male</td>
<td>542</td>
<td>49.3%</td>
</tr>
</tbody>
</table>

Source: ZoomWV 2016
Table 8

*GWHS Four Year and Five Year Graduation Rates*

<table>
<thead>
<tr>
<th>School Year</th>
<th>4 Year</th>
<th>5 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008-09</td>
<td>75.4%</td>
<td>N/A</td>
</tr>
<tr>
<td>2009-10</td>
<td>82.6%</td>
<td>82.0%</td>
</tr>
<tr>
<td>2010-11</td>
<td>83.9%</td>
<td>87.4%</td>
</tr>
<tr>
<td>2011-12</td>
<td>83.0%</td>
<td>85.0%</td>
</tr>
<tr>
<td>2012-13</td>
<td>83.5%</td>
<td>87.4%</td>
</tr>
<tr>
<td>2013-14</td>
<td>91.7%</td>
<td>87.9%</td>
</tr>
<tr>
<td>2014-15</td>
<td>91.6%</td>
<td>91.7%</td>
</tr>
</tbody>
</table>

Source: ZoomWV

**Student Sample**

The sample of 32 students who participated in this project were seniors. The students who participated were enrolled in the Engineering courses through West Virginia University. All 32 students were in the top 20% of their graduating class. Student gender demographics for the group were 16 female and 16 male students, an interesting fact based on the number of females who are currently engineers nationally. An article titled “Engineering Still Needs More Women” stated that only 14% of the current engineering field contains women which is a much higher number than the 5.8% of 1980 (ASME, 2012).

In addition to the engineering courses, six of the students completed a college credit course called Internship 189. These students completed a 15-, 30-, or 45-hour internship with a portfolio as a final product. Students had the ability to choose a
number of industry partners to participate as an intern. These experiences provided key insight into the future job requirements and allowed students to see the academic connection.

**Research Design**

A mixed method research design was used in this capstone. Within the survey itself, both qualitative and quantitative data were obtained to examine the outcomes of the survey. The survey contained both open and closed ended questions. The respondent had the ability to respond to comments when taking the survey. Student portfolios at the conclusion of the Internship 189 class were used to connect the curriculum in the classroom setting to the internship experiences. Obtaining student perceptions provided a better understanding of the field based learning experiences, internships and college partnerships.

**Instrumentation**

The survey has 19 specific questions about the student experience with field based learning experiences, internships, and college partnerships. Demographic information was requested in questions one through four to gain information about each student that included a request to participate, gender, ethnicity, and free or reduced lunch. Questions five through nine focused on field based learning experiences. Questions 10 through 13 collected information on internships. Questions 14 though 19 were specific and open-ended questions about college partnerships.
The survey was field tested at a local high school in Kanawha County. After 22 students reviewed a paper copy of the survey, they were asked to comment on the survey questions. A survey review and the comments indicated the reviewing students had little or no knowledge of the field based learning experiences, internships, and college partnerships. Comments from the students indicated they could understand survey questions and meaning. In addition, white or Caucasian students needed to be listed under ethnicity. Once finalized, informed consent was sent and mailed home for parental completion. Informed consent provided students with an opportunity to informed parents of the survey process and to provide an opportunity for survey explanation. Informed consent asked for parental permission and secured no student identification information other than gender and economic status.

A sample portfolio was given to GWHS as a guide from West Virginia University and their college internship class. Student portfolios collected information including time sheets, journals and evaluations on student perceptions of the experience. All of the information within the student portfolio was a replica of the college internship portfolio from West Virginia University. What students submitted in their portfolio provided a clearer connection to the field based learning experiences, internships, and college partnerships allowing the reader to better understand the connection between all three areas.
Procedures

Information on field based learning experiences, internships, and college partnerships are an important piece to the efficacy of the senior year of high school. Additionally, all three areas afforded seniors with experiences unlike no other senior in Kanawha County Schools. Furthermore, these practices provided the framework for the student survey.

Field based learning experiences. Field based learning experiences (FBLE) are an opportunity for students to familiarize themselves with a learning opportunity outside of the classroom. FBLE began with an informal whole group conversation with the teacher and principal. The teacher asked the students where they would like to visit, followed by request for contact information, and dates available. The teacher then assigned a group of students to a FBLE with the intent to set visit dates. FBLE can be a one-day or multiple day visits skimming the surface of a business or industry. Field based learning experiences included Toyota, Walker Machinery, American Electric Power (AEP), and Dow Chemical. They also visited a strip and underground mine where they participated in the detonation of explosives. They toured New River Bridge and the bridge walk and participated in zip lining with Ace Whitewater Adventure. All of the field based learning experiences were at the request of students and had an academic connection to enrolled course work.

Internships. Following the field based learning experiences students were then asked to contact the business and industries about the possibility of an internship. The teacher requested a list of internship opportunities from the FBLE. Not all field
based learning experiences yielded internship opportunities. Once an official internship list was established students were then assigned internships. It was the student’s responsibility to contact the internship sites through email or telephone. Internships included public and private companies involving WV Department of Highways, Coal River Energy, WV National Guard, R.C. Rogers Corporation, and Eastern American Energy. An internship is a deep dive into a specific area and provided students the opportunity to meet and “intern” with industry leaders gaining a better understanding of a specific job or industry skill. University credit is optional based on student demand and enrollment/completion of AP Calculus.

**College Partnerships.** The college partnership component permitted a teacher and counselor at George Washington High School to then contact universities about the availability of college courses and campus visits. Students toured West Virginia University Engineering College, Bridge Valley Community College, West Virginia State University, and University of Charleston. These visits included student forums on campus life, college majors and student activities. They also included financial aid and research opportunities.

**Student Survey**

Following the implementation of field based learning experience, internship, and college partnership an assessment piece was developed for capstone purposes. *SurveyMonkey* (Appendix C) was the online company that was chosen for the procedure based on the usefulness and data that would be provided at the conclusion of the survey. A request was made to Kanawha County Schools to allow the survey to
be given at George Washington High School (Appendix D). Once an explanation and
outline was given to our survey approval committee the process started. Once
approval was given in the spring of 2015, a brief handwritten survey was developed.
After conferencing with the doctoral team members, local educators, administrators
and a professor of education from West Virginia State University, some modifications
were made, IRB approval (Appendix E) was received in March of 2015.

During the spring of 2015, the survey was administered using Survey
Monkey. The data from Survey Monkey was exported to excel and was
disaggregated using excel. Students in the engineering course were asked by their
instructor to complete the survey in class or on their free time. The instructor
indicated that a number of students chose to complete the survey during class, some
chose to do so during their own time. Although the process was very long the results
revealed areas of need.

**Summary**

This capstone project used the survey as its main source of data along with
narrative data from student portfolios to examine the impact of field based learning
experiences, internships, and college partnerships upon high school seniors. In
chapter 4 an examination of the survey and students portfolio’s will determined
student perceptions on the senior year of high school.
Chapter 4

Findings

The intent of this study was to investigate the efficacy of the senior year of high school for high achieving students while using the impact of field based learning experiences, internships, and college partnerships as a means to improve the senior year capabilities. Results from this capstone will assist future course offerings and academic opportunities at George Washington High School for students. In addition, the capstone was developed to investigate different alternatives to the senior year experience and to determine alternative ways to prepare students for post-secondary experiences.

The research itself was a mixed method project using survey information and student portfolios to determine outcomes for high school development. Not only were the request administered using Survey Monkey to gain a understanding of the sample, but also student portfolios were used as a tool to analyze internship outcomes to create common themes among the participants.

Demographic Information

The results of the 19-question survey provided key responses for future decisions about the senior year experience. Item 1 of the survey was an informed consent, followed by three questions designed to gain demographic information about students (table 9). Of the 32 students responding to the survey, 16 identified themselves as male and 16 identified as female. For the 2015-16 school year, the
Student composition at George Washington High School was 49.4% males and 50.6% female.

Table 9

Demographic Information, Gender, Race and SES

<table>
<thead>
<tr>
<th>Gender</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>16</td>
<td>50.00%</td>
</tr>
<tr>
<td>Male</td>
<td>16</td>
<td>50.00%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Race</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>African–American</td>
<td>2</td>
<td>6.25%</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>7</td>
<td>21.88%</td>
</tr>
<tr>
<td>Latino or Hispanic</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Native American or Aleut</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Caucasian (Other)</td>
<td>23</td>
<td>71.88%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Free or Reduced Lunch Eligibility</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>2</td>
<td>6.25%</td>
</tr>
<tr>
<td>No</td>
<td>30</td>
<td>93.75%</td>
</tr>
</tbody>
</table>

The results provide an accurate representation of the student make up at George Washington High School. The number of students who identified themselves as African American or non-Hispanic represents 6.25% students well above the 0.072% of the total African American students attending GWHS. The percentage of Asian students (21.88%) was well above the total Asian population. “Other” is listed on the survey, but represents the Caucasian students which is below the total school average.
The economic status of the 32 students who participated in the survey indicated that 93.75% of the students did not qualify for free or reduced lunches. These results indicate that the SES of these students differs from some of the students 19.55% who attend George Washington High School. The percent is much lower for the total school population of students who qualify for free and/or reduced lunches at George Washington High School.

Field Based Learning Experiences

Table 10 contains the five survey items related to field based learning experiences. According to the response to question five, 90.63% of the students would prefer more field based learning experiences with only 9.38% would prefer to not participate. These results indicate a meaningful, one-day experience is very important to for high achieving students. An overwhelming number of students supported the field based learning experiences as part of the classroom and school experience.
Table 10

*Field Based Learning Experiences Survey Questions*

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q5: As a student would you like more field based learning experiences?</td>
<td>29 (90.63%)</td>
<td>3 (9.38%)</td>
</tr>
<tr>
<td>Q6: Relevance-Was the field based experience relevant to your course work?</td>
<td>32 (100.00%)</td>
<td>0 (0.00%)</td>
</tr>
<tr>
<td>Q7: Was the field based experience a rigorous practice?</td>
<td>10 (43.38%)</td>
<td>13 (56.62%)*</td>
</tr>
<tr>
<td>Q8: Engagement – Was the field based experience engaging?</td>
<td>18 (78.26%)</td>
<td>5 (21.74%)*</td>
</tr>
<tr>
<td>Q9: Did the field based experience support your interest in a STEM (Science, Technology, Engineering and Math) career?</td>
<td>18 (78.26%)</td>
<td>5 (21.74%)*</td>
</tr>
</tbody>
</table>

* Nine students did not respond on these three questions

The result to question 6 was the only question with 100% of the students answer “yes”. Students believed the field based learning experience was relevant to the course work they had taken while attending George Washington High School.

Responses survey question 7 provided support for field based learning experiences. Ten students found the experience to be beneficial and relevant to the course work. Thirteen students indicated the field based experience not be relevant and nine students chose not to answer question 7 which could indicate a lack of understanding or a clear definition of relevant.

In response to question 7 on rigor and whether the field based experience a rigorous practice, of the 32 students only 10 students or 43.38% replied with “yes”
which indicates that “rigorous” needed to be defined differently. Thirteen students or 56.62% replied with “no”.

Only 23 students answered question 8 about engagement. Eighteen or 78.26% of the student believed the field based learning experience was engaging and only five students or 21.74% of the respondents believed the experience was not. Nine students opted not to answer the question.

Question 9 continued the same trend as the previous two questions with only 23 of the 32 students responding to the question. The responses to the question about whether the field based learning experience supported the student’s interest in STEM (Science, Technology, Engineering and Math) career indicated that 18 (78.26%) of the students agreed that the field based experiences supported the interest in STEM careers while five student (21.74%) responded that there was a lack of support for their interest. Nine students opted not to answer the question.

Internships

Question 10, asked the students if they were presented with an internship opportunity during the school day would you chose to do so (Table 11)? Twenty-one or 65.63% of the students replied with a “yes” and 11 or 34.34% replied with a “no”.
Almost 66% of the students were in favor of an internship during the school day. Approximately 34% answered no to the internship question. There could have been a number of different factors that led to the student answers. Factors that may have included the responses included class schedule, work, or after school activities.

Question 11 continued to ask the students about internships and listed five different types. Students were asked to choose from the different choices. A total of 30 students responded to the question with 2 choosing not to respond (See Table 12).

Students had the option to pick more than one answer here. The survey had no limit the amount of choices a student could make. Engineering had the highest
percentage of students who were interested in an internship area with 56.67% or 17 students interested in that area. Education was the lowest area of interest for an internship opportunity with only 16.67%. Students were interested in two specific area, which were engineering and medical internships.

Question 12 and Question 13 both asked the survey participants to provide their perceptions of the field based learning experience using an open response format. Twenty-eight of the 32 students who started the survey skipped questions 12 and 13 with one student opting out. Of those who did answer the two questions, they responded with these following responses.

- Make sure the companies that are participating are STEM based
- It was fun
- It was very important
- Helped
- Very Helpful

These responses indicate the field based learning experiences were beneficial for the students. Students described the experiences are “helpful” and “important”.

**College Partnerships**

Question 14 provided information on the student’s plans following graduation (See Table 13). Thirty or 93.76% of the students plan on attending post-secondary education after graduation. These percentages are a little higher then my students
graduate and go on to college with approximately 91% of the graduating class attending either a two- or four-year college after graduation. The responses mirror the GWHS students who graduate and go on to enroll in post secondary education. Of the 2015 graduating class, 235 out of 265 went on to attend some form of post-secondary education. The percentages are approximately 2% higher than the current senior total college going rate for GWHS.

Table 13

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q14: Do you plan on attending post secondary education?</td>
<td>30 (93.75%)</td>
<td>2 (6.25%)</td>
</tr>
</tbody>
</table>

Question 15 asked students to provide the type of post secondary they plan on attending. Students were given four choices on the survey. Only one student chose the technical track. None of the students chose a two-year degree as option, 10 students indicated a four-year track, and surprisingly 18 students chose a master’s degree as their degree level. Many of the students are planning beyond the bachelor degree, that was an interesting piece of data. Table 14 contains the responses provided by the students who participated in the survey.
Table 14

*What type of post-secondary education do you plan on attending?*

<table>
<thead>
<tr>
<th>Post-secondary Education</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical</td>
<td>1 (3.45%)</td>
</tr>
<tr>
<td>2 Year</td>
<td>0 (0.00%)</td>
</tr>
<tr>
<td>4 Year</td>
<td>10 (34.48%)</td>
</tr>
<tr>
<td>Master’s Degree</td>
<td>18 (62.07%)</td>
</tr>
</tbody>
</table>

The results indicate the students who participated in the survey have their future educational goals set. Surprisingly, 62.07% chose a master’s degree as an option post high school. The two-year option not being selected by any of the students was a bit surprising based on the number of students who go in to post-secondary education.

Question 16 asked the students if they earned college credit while in high school (Table 14). Twenty-eight of the 32 students responded to this question with a “yes”. The results were expected based on what was offered at our school. Six students or 21.43% earned dual credit while 22 students or 78.57% have earned AP credit during high school.

Table 15

*College Credits*

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>Dual Credit</th>
<th>AP Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q16: Have you earned college credit while in high school?</td>
<td>6 (21.43%)</td>
<td>22 (78.57%)</td>
</tr>
</tbody>
</table>
The results reflected the attention for Advanced Placement courses at George Washington High School. In the fall of 2015, we entered into a partnership with West Virginia State University and we increased our college offerings. Currently, George Washington High School has 13 college courses available during the school day. The AP numbers remain strong and George Washington High School continues to offer 19 AP courses within the building.

**Open-ended Questions**

Questions 17 and 18 asked the students to “describe the impact the college partnership/dual credit experiences had on your senior year with regard to relevance, rigor and engagement” and to “describe the value of the college partnerships/dual credit experiences towards advancing your interest in a STEM (Science, Technology, Engineering, Math) career”. The students responded with the following open-ended responses. The responses supported the need for additional educational options. Students reinforced the need for college courses, assistance with college planning, and exposure.

- They helped with college
- Prepared me for college
- AP classes provided a more rigorous and engaging workload
- Helped me with the majors I wanted to consider
- It was engaging, relevant and rigorous
- Very valuable
• The college partnerships and dual credit experiences were very relevant, quite rigorous and extremely engaging
• It allowed me to see what types of engineering exist

Question 18 provided a glimpse into the options available to the students who participated in either the field based learning experience, internship and college partnership. Some of the students shared in one or two of the experiences.

• Influenced my major
• AP classes helped me to understand the future possibilities in various scientific fields
• Helped
• College partnerships and dual credit experiences are valuable when advancing my interest in a STEM career
• It’s very important because more jobs are depending on this type of knowledge
• Very valuable
• I didn’t know the differences in the types of engineering
• The partnership was definitely important in helping me towards my career
• College partnerships and dual credit experiences is very important when advancing my interest in a STEM career

The final question requested that the students rank their three experiences; field based experiences, internships and college partnerships, rank in order the
relevance to you. Table 15 contains the responses to item 19, which asked, “Of the three experiences; field based experiences, internships and college partnerships, rank in order their relevance to you (1 being the most relevant). * If you did not participate in the internship you have two experiences.”

Table 16

Of the three experiences, rank in order their relevance to you.

<table>
<thead>
<tr>
<th></th>
<th>First</th>
<th>Second</th>
<th>Third</th>
<th>N/A</th>
<th>Total</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field based</td>
<td>13 (52.00%)</td>
<td>6 (24.00%)</td>
<td>3 (12.00%)</td>
<td>3 (12.00%)</td>
<td>25</td>
<td>2.45</td>
</tr>
<tr>
<td>learning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>experiences</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internships</td>
<td>4 (16.00%)</td>
<td>8 (32.00%)</td>
<td>1 (4.00%)</td>
<td>12 (48.00%)</td>
<td>25</td>
<td>2.23</td>
</tr>
<tr>
<td>College</td>
<td>6 (22.22%)</td>
<td>7 (25.93%)</td>
<td>8 (29.63%)</td>
<td>6 (22.22%)</td>
<td>27</td>
<td>1.90</td>
</tr>
<tr>
<td>Partnerships</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The results show that a majority of the students ranked the field-based learning experiences higher than internships and college partnerships. A number of factors may have influenced the results but ultimately the students preferred the field based experiences.

Student Portfolios

In addition to the survey, the capstone included student portfolios from the Internships 189 college credit course as part of the mixed method research. In the spring of 2014, GWHS partnered with West Virginia University to offer the course Internship 189 for college credit. Students had the option to enroll in a one-, two-, or three-hour course at a reduced price and complete a 30-, 45-, or 90-hour internship in
the spring semester. Students were given the option to select from a list of local engineering based companies for the completion of the internship. These partners included:

- Department of Highways
- Coal River Coal Group
- Eastern American Energy Corporation
- Walker Machinery
- Department of Environmental Protection
- Pritchard Mining

The internship was a three-step process for completion. Each time a student attended the site had to complete a daily journal. At the conclusion of the internship they had a site supervisor complete a professional field experience survey consisting of 12 questions with a ranking system from 1 (poor) to 5 (excellent), an internship report, and site listed. Students were also asked to keep a timesheet as well. One of the most important pieces of information was the journaling aspect of the internships. Students were asked to write about internships site background, internship selection, experiences, responsibilities knowledge gained, challenges faced, relationship to high school courses, lessons learned and conclusion. These eight areas provided a valuable and rich learning experience.
The following themes were evident when reading the student portfolio entries. Students presented the following three themes including challenges faced, relation to high school courses and lessons learned within their student portfolios.

**Challenges faced.** One student said, “I had the challenge of having almost no prior knowledge about engine hydraulics or mechanical engineering. This meant that they would have to teach me the most basic principles before I could even begin to understand how these things work.” Another “challenge of mine was that I wasn’t very good at reading topographic maps which are an essential part of coal mining.” Another student wrote about the amount of information shared with her. She wrote, “It was sometime frustrating on their end (internship) too because they had to stop to explain things and that experience came with more background knowledge.”

“The challenge of having no prior knowledge about engines, hydraulics, or mechanical engineering meant they (Walker Machinery) would have to teach me all of the basics before I could even begin to understand how engines work,” said one student. Another said, “Being at Walker Machinery I learned how diesel engines work. Also I learned a lot about hydraulics, which was a big challenge, based on my lack of experience.”

A student wrote, “Being at the Department of Highways, I learned that geotechnical engineers analyze the ground and determine how stable the ground is for traffic.” A challenge faced at the Department of Environmental Protection and Coal River Energy were “the number of different jobs at each location and the number of different job responsibilities.” “A major task was to pick a few jobs descriptions and
intern with those employees. Another challenge was the ability to retain and understand the amount of information that was being given during the internship.”

“Being a high school intern was a little frustrating because of my own level of knowledge. Sometimes I felt overwhelmed by the engineers and their discussions said one student.”

Another student wrote about an invaluable experience that was a tour to the sewage plant with the Department of Environmental Protection (DEP). “I got to see how sewage traveled through the city of Dunbar and how chemicals and water pressure changed it.” “They also took me into the lab to see the “bugs” within the sewage which was a valuable experience!” “I was able to see first hand what a drill rig looked like and the “conditions” in which petroleum engineers work. I thought engineers worked in an office and never went to the work site.”

There are a number of themes evident in the challenges faced sections of the portfolio section. First, the students felt uncomfortable with conversations, prior knowledge and workload. After a few days, the internship became a little easier and meaningful.

**Relation to high school courses.** In relation to high school courses the Department of Highways relates to physics because bridges are designed so that they move based on the force of traffic from the middle outward. A lesson learned by the same student said, “I have learned more than I could ever have hoped to learn in the classroom about what engineers actually do.”
In relation to high school courses she wrote “calculus assisted with my work on net worth and insurance for Department of Environmental Protection.” A lesson learned was that “Engineers work!” She said, “Doing these internships taught me that people do not sit back and relax while other people do the work for them. It’s hard, demanding and sometimes dangerous but it taught me what I need to do in other to be successful.” How the physics learned helped bridge the gap with the civil engineers in general conversation. Also he stated, “The engineers use math equations to figure out dimensions and quantities of materials. The physics of hydraulics are an example of using incompressible liquid to do work. The physics of force being applied throughout these machines are both connections between school and work.”

At the department of highways “We learned the chemistry behind the paint compounds for road surfaces to make them last longer. The same chemistry I learned in my high school class.” A student stated, “During the internship, I learned the chemistry behind the measuring of the sulfur within the coal.” “Also, we used a system to separate the coal which was an example of centripetal force.” “The chemistry and physics were learned in the classroom and applied in the workplace.” “Having AP Calculus in my background helped a lot with the reading charts and graphs. Also, AP Chemistry helped with the conversations with trained engineers.”

“At the DEP internship, I used a lot of math and chemistry. I completed Calculus BC, so I had a solid mathematical foundation.” All of the students made great connections between the curriculum at George Washington High School and the
internship site. Most of the students wrote about math, chemistry and physics in their journals.

**Lessons learned.** One student wrote about professionalism, “Although the professionalism in the work place is much different than the professionalism in the classroom, it is definitely a skill that needs to be acquired by every student”. He also wrote about how perceptions play an important role in the workplace. One student wrote, “This is my best experience out of all of my internships. It gave me insight into my future career and it showed me that this is the field that I want to study”. They also wrote, “I learned more than I could ever have learned in the classroom. I made numerous connections within people already working in the field. The contacts allowed me to have additional internships with people who are connected with Walker Machinery” and “The most important lesson was the fact that I know now what kind of engineer I want to be.” “Doing these internships taught me that engineers WORK.” They also added, “I learned that there are a number of engineers out there that I had no idea about.” “I understand better what engineers do on a daily basis.” “I want a job where I can come home with a smile on my face so it is imperative that I choose an engineering major that makes me happy and allows me to grow personally and professionally.” “This internship program was an unique opportunity and I am blessed to have come through it,” said one student.

“Over the course of the internship, I was exposed to a number of elements of engineering; from reading plans to figuring out the finances, I got the whole spectrum,” said a student. “The person who did the hiring at the company provided
the single most important piece of information I learned. He said, ‘all engineers need to know how to read engineering plans’. ” “I learned that when he interviewed new engineers, he would give them an engineering plan, those who could read it would get hired, those who could not, would not be hired.”

Clearly, the students had a better feel for the type of engineering they were interested in after the completion of the internship. The student learned the professional connection side of business and industry. There were some overall general themes that were evident throughout all of the internships portfolios. The students made connections between their course work and real world learning experiences. The students had a better understanding of work expectations and a clearer path to achieve those goals and finally the students understood what professionals do on a daily basis.
Chapter 5

Conclusions, Actions, and Implications

Introduction

The purpose of this capstone was to seek the perspective from high achieving 12th grade students on their senior year and how to provide learning opportunities through field based learning experiences, internships, and college partnerships as a means to make the senior year worthwhile. The data from the survey were discussed in the previous chapter. Implications for practice and recommendations for further research will be discussed in this chapter.

Summary and Discussion

One of the issues with the study is sample size. Approximately 50 students were asked to participate in the original survey, but only 32 students chose to take the survey and all 32 had the opportunity to participate in the internship. These 32 students only represented about three percent of the total school population. Although these numbers are small, they do provide a brief glimpse into additional learning experience at George Washington High School.

The purpose of this study was to assess the level of engagement of student at George Washington High School. The overriding theme was to address the question listed below. This capstone addressed the following guiding question:

*How have field based learning experiences, internships, and college partnerships impacted student perceptions on the level of rigor, engagement, and relevance during the senior year of high school?*
There were 32 students who ultimately completed the survey. Sixteen of them were female and 16 were male. It was a very interesting piece of information because of the focus on engineering and the number of females who are represented in that particular field. “In the U.S., about 18 percent to 20 percent of engineering students are now women, an improvement over the abysmal numbers of 25 years ago,” says Joanne McGrath Cohon, (2008) an associate professor in the Department of Science, Technology, and Society at the University of Virginia, where 31% of undergraduate engineering students are female.

A comparison of school and survey data with respect to the ethnicity of the respondents indicated a variation in percentages between the survey participants and 2015-16 school enrollment number. The percentages of the students who identified as African American or Hispanic were much lower than the school average. Those students who identified as Asian/Pacific Islander were 21.88%, which was 8.26 higher than the school average of 13.72%. Twenty-three students or 71.88% of the students identified as Caucasian, which is approximately 10.8% lower than the school percentage of 82.6% of the total population. The economic status of the respondents identified only 6.25% of the students as receiving free and reduced lunch. Our school free and reduced lunch numbers are 19.55% for the 2015-16 school year. The students who participated in the survey were significantly smaller in percentages.

Interpretations

Field based learning experiences. Table 10 considered field based learning experiences at a variety of different levels. These included opportunities for more
experiences, was the experiences relevant to course work, and was the experience rigorous, relevant, and engaging. There was overwhelming support for additional field based learning experiences. One could conclude that the opportunity to have more was a factor in the 90.63% in favor. The fact the students can relate their course work to the learning experience supports the need for additional learning experiences. The question verified what educators hear all the time from students “when am I going to use this?” Students concluded the experience was rigorous. The data indicated the students supported and enjoyed the field based learning experience and what it provided.

**Internship.** Tables 11 and 12 focused on the internship portion of the survey. Of the 32 survey participants 65.63% or 21 students were in favor of an internship opportunity during the school day. Currently, George Washington High School supports a flexible schedule allowing students to have “off” periods for studying or additional course work. All of the 32 students who took the survey had at least three off periods in their schedule. The question about the type of internship had some interesting responses. Students had the ability to pick more than one area of interest. The engineering and medical were at the top of the percentages with business coming in at only 23.33% or seven students interested.

**College partnerships.** All of the students had some level of college course work. Most of the student had numerous AP college courses. All of the students made the connection between their high school curriculum and college partnerships. Eighteen of the students survey planned on a master’s degree of higher. An effective
college partnership allows students the opportunity to take advanced courses as well as college visits, research opportunities, and advising.

**Implications for Action**

The results from this study provide important insight to assist the decision making process for high achieving seniors when it comes to field based learning experiences, internships, and college partnerships. Based on this capstone it is important for high school administrators, counselors, and teachers to take a hard look at the efficacy of the senior year and begin to develop ways to keep the students engaged in the learning and growing process. All students could benefit from the following recommendations:

1. Staff development and training is needed so teachers can better advise students in class selection in all grades and for all subject content areas.

2. Guidelines need to be develop by schools to provide students with the opportunity to have different learning experiences and opportunities to take a variety of courses including Advanced Placement, college and dual credit offerings.

3. Field based learning experiences need to be part of the high school experience in order to give students a quick exposure to a new learning experience.

4. Partnerships are to be created with local colleges and universities to provide additional college courses.
5. Partnerships need to be established with colleges and universities allowing students the opportunity to do research, shadow a course or participate in a college class.

6. Partnerships need to be established with local businesses to enhance the internships for students in 11th and 12th grade.

7. College and career awareness needs to be a part of all high school grades. Students need to be made aware of the opportunities available.

Next Steps

In the spring of 2015 GWHS received the first of two STEM grants. The first grant was a three-year $30,000 Educational Alliance grant. The second grant was also for three years and was an approximate $250,000 grant from the West Virginia Department of Education. Both grants will assist in the exposure to STEM studies. A school based STEM leadership team has aligned our current curriculum offerings under the STEM umbrella with the intention to use grant monies for professional development under STEM. The leadership has developed a three-year plan to provide an intensive freshman focus followed by three years of STEM career paths where students follow a fluid path to a certificate, associate or bachelor seeking students with internships in the senior year.

The freshman year will be an integral piece of the program alignment. All freshmen will be assigned a defined STEM class during second period. Embedded within the defined STEM course will be simulated workplace and technology credit. Also embedded within the course will be a “speaker professional series” and
numerous field based learning opportunities. Ultimately creating a high school experience unlike no other.

**Recommendations**

As an educational leader in the school, it would be well served for us to analyze our high school experience through the implementation of field based learning experiences, internships, and college partnerships as ways to keep students engaged in their senior year. Doing so will provide students with meaningful opportunities which will assist them in future college and career decisions. There are additional opportunities for research that are related to this capstone project.

1. A multi-school study could be replicated by the high schools within the county as well as the state and possibly a national study.
2. With a few modifications to the survey, a middle school or career and technical school could replicate the study.
3. A study of administrator and teachers perceptions of the senior year effectiveness and learning opportunities could be developed to learn more about the challenges of making the senior year of high school more meaningful.
4. An inclusive study (grades 9 through 12) could be developed to gauge interest at the middle school level, as well as at the elementary level regarding the role of field based experiences, internships, and some level of college partnerships.
Reflections

There are memories of sitting in a room with a number of different students and professors from Kentucky being interviewed to be part of a new and innovative doctoral cohort at Morehead State University where all students would complete capstone. The appealing part of the long journey was the opportunity to complete a practitioner’s approach to the research. The capstone offered a new and innovative way to express interest in school improvement outside of the typical “sit and get” doctoral experience.

After a number of classes, focusing my thoughts and numerous Morehead campus visits, it became evident that there was a need to analyze George Washington High School and the senior class. A number of our second semester seniors began to display a lack of classroom focus and school responsibility. After a number of conversations with teachers, counselors, students and then, Program Coordinator, Dr. Carol Christian, my capstone developed into the “efficacy of the senior year for high achieving students and the impact of field based learning experiences, internships and college partnerships on engagement, relevance and rigor”.

After a transitional stage with classes and writing, Dr. Kessinger came aboard to assist with the final stages, but as the journey continued to evolve, so did the experiences. The thought to change, to rethink, to quit, to sacrifice, to ask, to evaluate, to analyze, and to push were all a reality. The processes to manage family and balance work were part of my reality. The procedure to edit, re-edit, and to re-edit
again, seemed to have no limits but with a little patience the process started to take shape.

The proposal committee approved the capstone, the IRB was completed and approved, the county approval for the project was received, and the writing began. The chapters were approved, the literature review was finished, the survey was given, the portfolios were read, and finally the writing process came together.

At the conclusion of the capstone, it was revealed that seniors need meaningful alternatives to the typical classroom environment. It was necessary to continue to look at learning options for all students, not just the high achieving. To lead a school that evolves with time that makes every student college and career ready was the goal.

Finally, the EdD process has taught me to stay the course, to finish what was start, and to continue to embrace learning.

Summary

The findings summarize the survey into three basic areas which are field based learning experiences, internships, and college partnerships. Based on the perceptions of the 32 students who participated in this capstone, there is value in all three areas. In addition to the survey, the portfolio provided an insight into the connection between school and the workplace. Clearly, the efficacy of the senior year of high school is vital for all students and it is important for schools to continue to evolve educational systems that provide learning opportunities for all students that are rigorous, relevant and engaging. Ultimately, using field based learning experiences,
internships and college partnerships as a means to leverage the senior year into a practice that may finally prepare all students to be college and career ready.
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Appendices
Appendix A- WVU University Article

WVU Honors College, GW High launch partnership

In an effort to keep West Virginia’s best and brightest home for college and careers, West Virginia University and George Washington High School in Charleston are taking the first steps in a new program that will give high school students an early exposure to college coursework and the careers that have caught their interest.

George Washington High School’s new Patriot University Program, named after the high school’s mascot, is a collaborative program to instruct students in the areas of engineering, medicine, business and accounting and education.

Ryan Claycomb, an assistant dean in the Honors College who worked with the high school on the program.

“Making connections with high-achieving students in high schools makes it more likely that those students are going to come to WVU and that they are going to stay in the state long term,” Claycomb said. “This is good not just for the students of West Virginia, but it’s good for West Virginia.”

The program will help prepare the students for college courses in their fields with workshops and lessons taught in conjunction with University faculty and will give them an opportunity to meet and learn from professionals working in those fields.

The WVU Honors College is working with other university departments to offer the students in the program as many learning opportunities as possible.

(Source: www.WVU.edu)
Appendix B - Smarter Balanced Assessment Scores 2014-15

### ELA/Literacy

<table>
<thead>
<tr>
<th>Grade</th>
<th>Number of Students Tested</th>
<th>Percent Proficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>9th</td>
<td>207</td>
<td>63%</td>
</tr>
<tr>
<td>10th</td>
<td>207</td>
<td>74%</td>
</tr>
<tr>
<td>11th</td>
<td>217</td>
<td>67%</td>
</tr>
</tbody>
</table>

### Mathematics

<table>
<thead>
<tr>
<th>Grade</th>
<th>Number of Students Tested</th>
<th>Percent Proficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>9th</td>
<td>206</td>
<td>48%</td>
</tr>
<tr>
<td>10th</td>
<td>206</td>
<td>41%</td>
</tr>
<tr>
<td>11th</td>
<td>217</td>
<td>42%</td>
</tr>
</tbody>
</table>

Appendix C- Survey Monkey

GWHS Patriot University- Engineering

The purpose of this research project is to acquire information related to efficacy of the senior year of high school. This research is being conducted by a doctoral student at Morehead State University, Kentucky. You are invited to participate in this survey. Your participation in this research is voluntary. If you decide to participate in this research, you may withdraw at any time. If you decide not to participate in this study or you withdraw from participating at any time, you will not be penalized.

The procedure involves filling out an online survey that will take five to ten minutes. Your responses will be kept confidential and we do not collect identifying information such as your name, address, email address, or IP address. The survey questions will be about the senior year, classes and options.

1. If you do not wish to participate in the research study, please decline participation by clicking on the "disagree" button.
   - Agree
   - Disagree

2. What is your gender?
   - Female
   - Male

3. To which racial or ethnic group do you most identify?
   - African-American (non-Hispanic)
   - Asian/Pacific Islanders
   - Latino or Hispanic
   - Native American or Alaskan
   - Other

4. Do you receive free or reduced lunch?
   - Yes
   - No

GWHS Patriot University- Engineering
Field Based Experiences are a quick (one day) learning experience that allows students the opportunity to see something different than school (Ex. visit to BridgeValley, WVU Engineering school, West Virginia Tech, Patriot Mining, Walker Machinery, New River Bridge and/or Toyota).

5. As a student would you like more field based learning experiences?
   - Yes
   - No

GWHS Patriot University - Engineering

If you have participated in a field based experience please complete questions 6 -9.

6. Relevance - Was the field based experience relevant to your course work?
   - Yes
   - No

7. Rigorous - Was the field based experience a rigorous experience?
   - Yes
   - No

8. Engagement - Was the field base experience engaging?
   - Yes
   - No

9. Did the field based experience support your interest in a STEM (Science, Technology, Engineering, and Math) career?
   - Yes
   - No

GWHS Patriot University - Engineering
Internships are a 15, 30, 45 hour commitment outside of the school day where students will have the opportunity to participate in a hands on learning experience with a local engineering firm or company.

10. If presented with an internship opportunity during the school day would you do so?
   - Yes
   - No

11. What type of internships are you interested in?
   - Engineering
   - Medical
   - Education
   - Fine Arts - Theatre, Media
   - Business
   - Other (please specify)

If you completed an internship, please complete questions 12 and 13.

12. If you participated briefly describe your internship experience.

13. In considering a STEM career, describe the value of the internship experience toward advancing your interest in a STEM career.

GWHS Patriot University: Engineering

College Partnerships - Visited or participated in college visits or have enrolled or taken college classes
14. Do you plan on attending post secondary education?
   - Yes
   - No

15. What type of post secondary education do you plan on attending?
   - Vocational
   - 2 Year
   - 4 Year
   - MA - Master's Degree

16. Have you earned college credit while in high school?
   - dual credit
   - AP credit

17. Describe the impact the **college partnerships/dual credit experiences** had on your senior year with regard to relevance, rigor and engagement.

18. In considering a STEM career, describe the value of the **college partnerships/dual credit experience** toward advancing your interest in a STEM career.

19. Of the three experiences; field based experiences, internships and college partnerships, rank in order their relevance to you (1 being the most relevant). *If you did not participate in the internship you have 2 experiences to rank.*
   - Field Based Experiences
   - Internships
   - College Partnerships
   - N/A
   - N/A
   - N/A
Appendix D- Survey Request Kanawha County Schools 2015

February 27, 2015

Mr. George Aulenbacher
105 Lynn Street
South Charleston, WV 25303

Dear Mr. Aulenbacher,

I am pleased to inform you that your request to conduct research within Kanawha County Schools, for the project titled- “Efficacy within the Senior Year of High School”, has been approved. You may proceed with implementation of the project within the parameters and timelines set forth in your research application. We look forward to receiving a report of the findings and we wish you great success!

Sincerely,

[Signature]

Jane Duffy
Director of Counseling & Testing
Appendix E- IRB Approval Form

Institutional Review Board
Office of Research and Sponsored Programs
901 Ginger Hall
(606) 783-9370

MEMORANDUM

DATE: May 1, 2015
TO: George Aulnbacher, Michael Kessinger
FROM: Institutional Review Board (IRB)
c/o Office of Research and Sponsored Programs

SUBJECT: Exempt Protocol #15-04-110

On May 1, 2015 the IRB determined that your project entitled, Efficacy of the senior year for advanced students: The Impact of field based experiences, internships and college partnerships, meets the criteria to qualify as an exempt study.

In accordance with new procedures instituted by the IRB, and because your study is exempt, you are not required to submit Part H (Annual Continuing Review) or a Part H (Final Report). However, if any revisions are made to a project or if any unexpected risks arise during an investigation the principal investigator must submit Part H (Change of Status) to the IRB, fully explaining all changes or unexpected risks. It is your responsibility to notify the IRB prior to making any changes to the study. Please note that changes made to an exempt protocol may disqualify it from exempt status and may require an expedited or full-board review.

Your exempt protocol is approved for six years. At the end of six years the protocol will close and interaction with human subjects must cease. If you would like to continue your project, you must submit a new exemption application and have it approved before the project can continue.

If you have any questions, contact the Office of Research and Sponsored Programs at (606)-783-2010.

pc: IRB File
### Efficacy of the Senior Year

#### MSU Institutional Review Board for the Protection of Human Subjects in Research

**NOTIFICATION OF EXEMPT PROTOCOL REVIEW**

<table>
<thead>
<tr>
<th>Principal Investigator/Researcher:</th>
<th>George Aulenbacher, Michael Kessinger</th>
<th>Title: EdD student</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campus Address: 105 Lynn St Charleston, WV</td>
<td>Campus Phone: 304-413-5579</td>
<td>Department: Department of FGSE</td>
</tr>
</tbody>
</table>

#### Purpose:

- **Title of Project/Course:** Efficacy of the senior year for advanced students: The impact of field-based experiences, internships and college partnerships
- **Funding Source/Agency:** NA
- **Period of Project/Course:** From: 5/1/15 To: 4/30/21

**Protocol Review Number:** 15-04-110

- Initial Review **X** Continuing Review **__**

The human subject use protocol described above has been reviewed by the MSU Institutional Review Board for the Protection of Human Subjects in Research with the following results:

The IRB determined the project, as stated, is exempt based on federal regulation 46.101(b)(2). Federal regulations require that the IRB be notified if anything in the research changes, as additional review may be necessary.

- **Yes **No **Approved, may proceed as written
- **5/1/15** Approval Date

In accordance with new procedures instituted by the IRB, and because your study is exempt, you are not required to complete continuation or final review reports. However, it is your responsibility to notify the IRB prior to making any changes to the study. Please note that changes made to an exempt protocol may disqualify it from exempt status and may require an expedited or full-board review.

- **Yes **No **N/A **Regulatory requirements have been met for the waiver of documentation of consent
- **Yes **No **N/A **Regulatory requirements have been met for the waiver of informed consent
- **Yes **No **N/A **Criteria for use of children has been met

**SIGNED: [Signature]**

**Date:** 5/1/15

**Please refer to the protocol review number in any future references to this protocol. If any revisions are made to a project or if any unforeseen risks arise during an investigation, the principal investigator must submit Form H to the IRB, fully explaining all changes or unexpected risks.**

**PC:** Protocol File
VITA

George L. Aulenbacher

EDUCATION

December, 1997  Bachelor of Arts
West Virginia State University
Institute, West Virginia

May, 2001  Master of Arts
Marshall University Graduate College
Huntington, West Virginia

May, 2004  Master of Arts
Marshall University Graduate College
Huntington, West Virginia

Pending  Doctor of Education
Morehead State University
Morehead, Kentucky

PROFESSIONAL EXPERIENCES

2011 - Current  Principal
George Washington High School
Charleston, West Virginia

2010 - 2011  Transformation Specialist
Kanawha County Schools
Charleston, West Virginia

2004 - 2010  Principal
Stonewall Jackson Middle School
Charleston, West Virginia

2002 - 2004  Assistant Principal
Horace Mann Middle School
Charleston, West Virginia
1998 - 2002  Teacher
Sissonville Middle School
Sissonville, West Virginia

HONORS

2007  Milken Award Winner- Outstanding Educator
Milken Foundation
Los Angeles, California