Avoiding Senioritis:
Student Perceptions of Engagement and Efficacy During Senior Project

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Abstract

The problem of senioritis can impact time on learning and may compromise a student’s successful transition from high school to college or career. Researchers contend that students tend to be more motivated if they are given opportunities to engage in tasks that are relevant to their personal interests and goals. Senior project programs are designed to encourage independent and experiential learning by asking high school seniors to link their studies with a real-world application. This case study examines student perceptions of engagement and self-efficacy while participating in a senior project in a high school on the south shore of Boston, Massachusetts. The site was chosen because the high school had just completed its first senior capstone project at the time of the study. Students, teachers, and school administrators were asked to offer insights and opinions on their perceptions of student engagement and efficacy during the senior project experience. Data were collected using surveys, focus groups, and interviews. The results of this study suggest that curriculum designs such as a senior project, which include components that engage students in their learning experiences, are effective in avoiding the early onset of senioritis and may contribute to seniors’ perceptions of self-efficacy in their future pursuits after high school.

*Key words*: engagement, efficacy, relevance, senior project
Chapter I: Introduction

Problem of Practice

It happens in high schools across the country. Sometime after the winter break, seniors begin to disengage from school. This phenomenon is often called senior slump or senioritis and it is as predictable as the seasons (Kirst & Venezia, 2004; Sizer, 2002). High school seniors planning to further their education have submitted college applications and eagerly await letters of acceptance. Students planning to enter the workforce find themselves wasting time in classes that appear to have no relevance for the future they face. For both groups, the second semester of senior year is considered more a time for socialization and mischief than it is a time for academic rigor (The College Board, 2011).

Researchers agree that schools need to do a better job of engaging students in relevant and rigorous learning experiences so that seniors graduate from high school equipped with the skills needed to be successful in the colleges and careers of the twenty-first century (Battistich et al., 1997; Botstein, 1997; Eccles et al., 1993; Greene et al., 2004; Henriksen et al., 2008; National Commission on the High School Senior Year, 2001; Sizer, 2002). Yet studies indicate that as students progress through secondary school, the amount and level of rigor actually decreases with each year of school (Eccles et. al, 1993). In addition, students often find the curriculum in high school to lack relevance and value as they progress through the grades (Viadero, 2010; Berliner, 2010; Sizer, 2002). Finally, the notion that senioritis is an acceptable part of a student’s senior year appears to contribute to the number of high school graduates who find themselves ill prepared for life after high school (Csikszentmihalyi & Schneider, 2000; Kirst & Venezia, 2004).

In an effort to combat senioritis some schools add incentives for second semester seniors such as exemption from final exams for maintaining an average of 90 or above in selected
courses. And although many state competency exams are administered at the end of the sophomore or junior year, the New York state assessment includes content from the senior year curriculum in an effort to keep students academically engaged up to the test. In Vermont and Maryland, lawmakers have called for colleges to admit students on a conditional basis contingent upon successful completion of academic work through the end of the senior year (National Conference of State Legislatures, 2005).

Colleges and universities have joined in the fight to reduce senioritis. For the past forty years Syracuse University has offered high school students the opportunity to enroll in college level courses. This program, called Project Advance, allows high school seniors to earn college credit while still enrolled in high school (http://www.supa.syr.edu). These programs, often called dual enrollment, are attempts to keep high school seniors motivated and engaged in their learning right up to graduation.

Some school districts combat senioritis by offering senior project programs. Commonly known as the Senior Project, capstone project, culminating project program, or senior exhibition, these curricula provide students the option to explore their interests and have control over the design and development of a project or activity. A senior project is an extended activity that includes independent research and experiential learning, and which culminates in a final presentation to an audience of stakeholders. Comprehensive senior project programs are supported by a senior seminar that frames the planning, implementation, and evaluation of the senior project (Sizer, 2002).

One remedy for senioritis may be to provide relevant and rigorous learning opportunities that engage high school seniors during a time when disengagement from school generally develops. Senior projects are designed to allow high school seniors an independent learning
experience, usually in an area of personal interest. Most senior project topics are linked to the individual student’s intended plan post high school and are often chosen to enhance an academic or vocational pursuit. Research indicates that students who are interested in their learning and find it relevant to their personal goals tend to be more engaged (Blumenfeld et al., 2006; Christensen et al., 2008; Greene et al., 2004; Jensen, 2005; Newman, 1992; Sousa, 2006). Therefore, the purpose of this study is to examine student perceptions of self-engagement while participating in senior project programs and to consider how these programs may inform curriculum and instructional practices in public high schools.

Significance of the Problem

Senioritis is a condition so common that the final report of the National Commission on the High School Senior Year devotes a section on how to prevent its inevitable arrival (National Commission on the High School Senior Year, 2001). The senior slump is considered to be attributable to the poor academic performance of many college freshmen. Studies find that slacking off during senior year results in a more difficult transition into college because students lose valuable time on learning (Kirst & Venezia, 2004). This may contribute to the fact that, “40 percent of all students who start college need some form of academic remediation” (Wagner, 2008, p. 54).

For the one-third of high school students who intend to enter the workforce after graduation, the high school senior year has little to offer. Due to educational reform, public schools’ efforts to reach state and federal accountability standards have resulted in a narrowing of the curriculum and the elimination of a diverse course selection for the non-college bound (Rosenbusch, 2005). Chris Myers Asch, a teacher of history at the University of the District of Columbia and the coordinator of their National Center for Urban Education calls for high schools
to offer more apprenticeships and programs that help to develop real-world skills enabling the non-college bound student to be more successful after graduation (Asch, 2010). Leon Botstein (1997) states, “The traditional high school is an out-of-date strategy and system. In terms of its curriculum, it remains in a useless middle ground that helps neither fast nor slow learners” (Botstein, 1997, p. 44).

Little has changed in the structure and curricula of most public high schools in at least the last ten years. Botstein (1997) 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” (Botstein, p.44). Indeed, more than ten years later, the 2009 High School Survey of Student Engagement (http://www.indiana.edu) found that less than half of students attend school because of an interest in what they learn and that among those who have considered dropping out, half said that it was because they didn’t like school (Viadero, 2010). “Forty-seven percent of the dropouts in one study left school because the classes were uninteresting to them” (Berliner, 2010, p. 136). The impact of high school dropouts on the economy is significant. The United States spends over $200 billion a year on lost wages, taxes, social services, and crime due to the consequences of not completing high school (Darling-Hammond, 2010). It seems likely that schools must find ways to create more meaningful and relevant curricula in order to better engage high school students and keep them in school.

Seniors, as leaders of the high school student body, set the climate for the rest of the school. Senioritis is, as Sizer (2002) calls it “inflammation of the senior” (p. 137). She says seniors who suffer from this condition should be removed from the environment as they “have lost their purpose, their sense of working order” (p. 137). High schools that offer alternatives to the traditional senior year may engage students throughout their high school tenure while
providing them with meaningful learning opportunities that build a bridge between high school and the postsecondary world. The High School Survey of Student Engagement found that 82% of students welcomed more chances to be creative in their learning experiences (Viadero, 2010).

In its 2001 final report, the National Commission on the High School Senior Year 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 represent 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). To avoid the pitfalls of senioritis, a focus on curricular programs that offer relevant and engaging learning opportunities may be beneficial to both the college and work bound student by providing an opportunity for high school seniors to pursue something of personal interest and significance. Students need to know how to transfer their knowledge to real-world applications in order to develop cognitive skills (Wiggins & McTighe, 2012). These transfer skills enable deep understanding and critical thinking. “[E]conomic productivity and competitiveness in the world depend on workers who are skillful thinkers and learners” (Perkins, 1995).

Csikszentmihalyi and 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 the extent that teenagers have had the experiences that demand discipline, require the skillful use of 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)
It is the position of this study that the components of a senior project program offer a learning experience that is engaging and relevant for students in their senior year of high school. Programs such as a senior project may reduce student ennui and increase student productivity in college and the workplace making a positive impact on local and global economies through a more skillful and knowledgeable workforce.

Intellectual Goals

This study examines students’ perceptions of their level of engagement. Therefore the first intellectual goal is to understand how participation in a senior project affects student perceptions of self-engagement in school and their motivation to learn during senior year. Qualitative inquiry helps reveal how participants experience a phenomena and how they make meaning out of their participation in the phenomena (Maxwell, 2005). In this case, high school seniors are asked to report on their perception of how engaged and motivated they feel during their participation in a senior project. The goal is to understand the relationship between senior project and student engagement.

The second intellectual goal considers how participation in senior projects results in student perceptions of self-efficacy as it relates to pursuing future goals. Maxwell (2005) describes this aspect of qualitative research as “developing causal explanations” (Maxwell, 2005, p. 23). In this way, the intellectual goal is to understand whether participation in a senior project causes students to feel more confident about their ability to be successful in their life after high school. If senior projects positively impact student perceptions of self-efficacy, then comparable learning activities may be beneficial for other high school students as well.
Practical Goal

One practical goal of this study is to examine the impact of participation in a senior project on students’ perceptions of student engagement and self-efficacy (Maxwell, 2005). The objective of this goal is to determine whether senior project may alleviate the problem known as senioritis and in so doing, affect student perceptions of their ability to be successful in the future. The concept linked to this goal can be found in the research that says student engagement leads to motivation, which leads to deeper learning that results in academic achievement which increases feelings of self-efficacy, which leads to a higher degree of attainment in reaching personal goals (Bandura, 1993; Blumenfeld et al., 2006; Brofenbrenner, 1997; Csikszentmihalyi, 1990; Dweck, 2006; Margolis & McCabe, 2006).

A second practical goal is to find a way for high schools to engage their students through their senior year and reduce the issues associated with senioritis (Sizer, 2002).

Research Questions

The research questions consider the impact of participation in a senior project on students’ perceptions of engagement and self-efficacy. The research questions are:

1. Why and how did the administrators and teachers of one high school decide to pursue a senior project?

2. How do students, teachers, and school administrators perceive students’ pursuit of senior projects as impacting seniors’ engagement and motivation in school during their senior year?

3. How do students, teachers, and school administrators perceive students’ engagement in senior projects contributing to their self-efficacy in pursuit of meaningful vocations or further education?
Document Organization

This document includes the theoretical frameworks through which this study analyzes this problem of practice, a literature review that examines what the research reveals about topics related to the research study, including senior projects, student engagement and motivation, curriculum design, and issues related to self-efficacy. In addition, the research design, which includes the research questions, methodology, validity and reliability, and limitations of the study, followed by a report of the research findings and concluding with a discussion of those findings are included.

Theoretical Framework

The problem of practice is considered in context of engagement theory (Bronfenbrenner, 1977; Fredericks, Blumenfeld & Paris, 2004; Kuh, 2007) and self-efficacy theory (Bandura, 1993; Dweck, 2006; Margolis & McCabe, 2006). The link between learning, engagement, and motivation informs the problem of practice by considering how engagement impacts student learning and consequently the opportunities for students after high school. Self-efficacy studies suggest a strong connection exists between levels of efficacy and cognitive development, motivation, and engagement (Bandura, 1993; Betz, 2004; Maier & Curtain, 2005; Margolis & McCabe, 2006). Higher self-efficacy is linked to improved student performance, which in turn raises levels of efficacy (Dweck, 2006; Margolis & McCabe, 2004). These two theoretical lenses focus this study on the relationships between student engagement, learning, motivation, and feelings of efficacy in the context of senior project participation.

Engagement Theory. Engagement theory examines the relationship between student engagement and the learning process. Research indicates that there exists a positive correlation between student engagement and student learning (Boykin & Noguera, 2011; Bronfenbrenner,
Students in engaging classrooms outperform their peers on assessments “by an average of almost 30 percentile points” (Marzano, 2007, p. 98). Furthermore, brain imaging methods report heightened brain activity in subjects who are deeply concentrating on a task (Jensen, 2005). Elevated brain activity in the prefrontal and posterior lobes indicates higher-level thinking, often referred to as critical thinking (Jensen, 2005). Critical thinking skills, such as the ability to problem solve, are considered essential to success in the twenty-first century (Trilling & Fadel, 2009). Therefore, evidence suggests that increasing opportunities that engage students in school may improve student learning.

Fredericks, Blumenfeld, and Paris (2004) state that engagement impacts student affect, behavior, and cognition, in other words, “[w]hat students feel, do, and think” (Connor, 2009, p. 9). Newman (1992) states that in order for students to be engaged, their learning must be active and they must feel a sense of commitment to what they are learning. Examples of active learning include inquiry-based activities such as project-based learning where students are presented with a real-life problem and work in collaborative groups to create solutions to the problem. Project-based learning activities allow students to engage in issues that are relevant to them such as protecting the environment or addressing a need in their local community.

Engagement involves deep concentration (Littky, 2004; Newman, 1992). Csikszentmihalyi (1990) called this deep concentration flow and he found that during this state students became fully engaged in the activity regardless of any external motivation. “The individual functions at his or her fullest capacity, and the experience itself becomes its own reward” (Shernoff et al., 2003). Students who participate in activities for sustained periods of
time with a level of deep concentration do so because they are motivated by the activity (Sousa, 2006). Thus motivation and engagement are necessary companions.

There are two types of motivation, intrinsic and extrinsic. Intrinsic motivation is connected to one’s values and beliefs and extrinsic motivation is related to an external reward or punishment (Sousa, 2006). Csikszentmihalyi (1990) found that experiencing the state of flow was intrinsically rewarding and therefore students in this state became motivated to repeat the activity. Whereas schools often structure expectations for student behavior on external rewards, such as grades or special recognitions, intrinsic motivation is more desirable because it derives from individual values and interests (Sousa, 2006; Wigfield & Eccles, 2002). Students are motivated to engage in activities in which they have a choice and in activities that have relevance to their lives (Jensen, 2005).

Silver and Perini (2010) state “engagement means commitment” (Silver & Perini, 2010, p.322). The authors contend that choice, creativity, and personal relevance are three of the eight qualities necessary to develop student engagement. Senior projects are designed so that students have a choice to study and participate in an area of interest and relevance to them. The goal of senior projects is to have students learn in a context that is personalized, authentic, and connected to the real-world (Littky, 2004). By offering a senior project, schools have the opportunity to keep students motivated during the period of time when senioritis usually takes hold. And as the research suggests, a motivated student is a student who is engaged in their learning (Littky, 2004; Shernoff et al., 2003; Sizer, 2002). A more motivated student retains knowledge and develops skills to apply learning to new and unexpected situations. This is the goal of a K-12 education (Darling-Hammond, 2010; Perkins, 1995; Wagner, 2008).
**Self-Efficacy Theory.** Bandura (1997) established the term social cognitive theory, which recognizes the influence of social and environmental factors on the learning process. He links an individual’s perception of competence in dealing with their environment as an indicator of their self-efficacy in the world. Senior projects require social interaction with the broader community of a school and afford students the opportunity to work with other adults. Studies have found that this type of interaction can have a positive impact on student levels of efficacy (Chang et al., 2010).

“The concept of self-efficacy refers to one’s beliefs in one’s capabilities to successfully engage in a specific area of behavior” (Betz, 2004, p. 340). Margolis and McCabe (2004), Dweck (2006) and others find that there exists a correlation between student perceptions of their ability to learn and their actual performance in school. Students who believe they can learn demonstrate higher levels of motivation and engagement in school because they sense a degree of control over the outcome of their efforts. Dweck (2006) calls this a growth mindset and she finds that children with a growth mindset are willing to take risks and challenge themselves. “It’s about becoming smarter” as opposed to viewing intelligence as something that is fixed, something that some have and others don’t have (Dweck, 2006, p. 17). The relationship between effort, motivation, engagement and achievement informs this study by examining the interplay of these constructs within the framework of the senior project.

Goddard, Hoy and Hoy (2004) state “perceived collective efficacy is a potent way of characterizing school culture” (Goddard, Hoy & Hoy, 2004, p. 6). High school seniors are considered leaders of the school and therefore set the tone for others (Sizer, 2002). Programs and curricula that enhance students’ feelings of instrumentality and efficacy may positively impact the high school culture. Greene et al. (2004) says that motivation is influenced to “the extent to
which students perceive current task performance as instrumental to achieving personally valued future goals, or more simply, perceived instrumentality” (Greene et al., 2004, p. 464). A senior project that aligns student learning with topics of value and relevance to the student supports the research that links engagement, motivation, and efficacy.

The apparent symbiotic relationship between engagement, motivation, cognitive development, and perceptions of self-efficacy inform this study (Carberry, Lee & Ohland, 2010; Maier & Curtain, 2005; Margolis & McCabe, 2006). The researcher asks whether a senior project program may improve student learning and increase students’ perceived opportunities to be successful in the future.

**Summary.** In summary, engagement theory frames the problem of senioritis by providing insight into the relationship between student engagement and learning. Self-efficacy theory connects with engagement by establishing a mindset through which students may increase their level of engagement thereby enhancing the learning process. Engagement and efficacy act upon each other, as success in one increases the likelihood of success in the other. There is a positive correlation between student hopeful attitudes toward the future and feelings of academic efficacy (Kenny et al., 2010). The components of senior project programs appear to include many of the elements that are found to impact student engagement, such as relevance, independence and personal interest and in so doing, impact their feelings of efficacy toward their future.

**Chapter II: Literature Review**

This study investigates innovative programs that keep seniors engaged during the second half of their senior year of high school and examines the implications these models have on curriculum and instructional practices in public high schools. Therefore this review of the
literature is focused on the following areas of senioritis: engagement, curricula, efficacy and senior project. These topics are considered as they relate to the constructs of both engagement theory and self-efficacy theory.

**Senioritis**

The literature on senioritis states that students tend to disengage from school during the second semester of their senior year (Connor, 2009; Dreis & Rehage, 2008; Lord, 2001; Henriksen, 2008; Krist & Venezia, 2004; Kuh, 2007; Sizer, 2002). Research indicates that students lose interest in their studies and become bored with school. This disengagement has consequences manifested in the lack of preparedness that students often exhibit during the freshmen year of college. A narrow curriculum, which focuses on those content areas associated with competency determination exams, is also suggested as one of the causes for student disengagement (Asch, 2010; Rosenbusch, 2005; Wraga, 2009). This impacts both the college and the non-college bound student.

Researchers speculate on the reasons for student disengagement during the senior year. Kirst and Venezia (2004) blame the lack of student engagement during senior year on the educational reform act. The authors conclude that standards-based educational reform, which includes competency determination tests administered as early as the tenth grade, has “written off the senior year” (Kirst & Venezia, 2004, p. 302). Sizer (2002) supports this theory stating that once college applications are mailed, senioritis begins to set in as seniors conclude that their records have been sent and what remains for high school doesn’t count. Lord (2001) concurs and states that colleges hold some of the blame for senior disengagement because, “[b]y admitting students on the basis of their junior-year grades, colleges send the message that senior year doesn’t really count” (Lord, 2001, p. 44).
Kuh (2007) states that senior year is a wasted year and finds that student engagement declines. In fact, many researchers agree that student engagement and motivation decline as students advance through high school (Connor, 2009; Kirst & Venezia, 2004; Kuh, 2007; Sizer, 2002). Dreis and Rehage (2008) refer to the final year of high school as a “vast wasteland” where seniors are either disengaged or struggling to remEDIATE deficits before moving on to post-high school pursuits (Dreis & Rehage, 2007, p. 34). In “Senior Year Experience,” Henriksen (2008) and associates report their research on concerns arising from the traditional senior year. They find it “lacks rigor, fails to provide students with clear pathways to work and postsecondary education, and does not prepare students for a successful transition from high school to postsecondary experiences” (Henriksen, Stichter, Stone, & Wagoner, 2008, p. 58).

In a school in Delaware, Menzer and Hempel (2009) attempted to understand the reasons why some seniors gave up during their senior year when they appear to be so close to graduation. The study organized students who failed to graduate into four categories; one of these categories is called “the lackadaisical.” According to the authors, students put into the lackadaisical group were those who had disengaged from their studies because the school had little relevance to their particular interests or future plans. These are the students identified as exhibiting senioritis.

Student disengagement as the by-product of an irrelevant and meaningless curriculum can leave students with gaps in their learning and in their preparation for the future (Kirst & Venezia, 2004; Sizer, 2002). The 2001 report from the National Commission on the High School Senior Year states that schools should do a better job of integrating their senior year curriculum so students can see the connection between the subjects they study. This connectivity “can convert senioritis into a preparation for life in the 21st century” (National Commission of
Dreis and Rehage (2008), Sizer (2002) and others agree that high school seniors are capable, dynamic, and eager to express themselves and therefore are ready to put into practice the skills and knowledge they have acquired in school. As a result, the authors advocate for programs in the senior year that are student-directed, that involve interaction with adults and that extend beyond the classroom. However, not all research agrees that alternative programs are the best way to treat senioritis.

Chmelynski (2004) and Connor (2009) call for programs that challenge students in traditional academic endeavors such as extensive research papers and more academically demanding senior classes. Not all students in their senior year of high school, however, are invested in continuing an academic track beyond graduation. Therefore Sizer (2002) suggests that in order to address the problem of senior disengagement among all students, “new academic programs must be planned…that [are] appropriate and challenging” (Sizer, 2002, p. 214). It appears evident that student disengagement may be a by-product of the traditional curricular choices that are available in the senior year of high school. A senior project program offers relevant and engaging options to the senior year curriculum.

If the problem of senioritis is identified as a disengagement from school, then an examination of the nature of student engagement and its relationship to learning may inform the problem of practice.

**Student Engagement**

Student engagement has been linked to high academic performance in numerous studies (Marks, 2000; Connor, 2009; Jensen, 2005; Sousa, 2006; Greene et al., 2004). Furthermore,
engagement is found to improve performance regardless of the diversity of student populations (Marks, 2000). A review of the literature on the high school senior year also suggests a correlation exists between levels of student engagement and career or college readiness. Data gathered from the Bridge Project, a national research study that looked at how well high schools prepare students for the academic challenges of college, reveal that seniors who slack off their senior year often find themselves unprepared for the college challenge (Kirst & Venezia, 2004).

In his text, *Teaching with the brain in mind*, Jensen (2005) provides concrete evidence, through brain imaging techniques, that there is an increase in neural activity in brains that are involved in a task deemed to be more engaging (Jensen, 2005). While the author contends, “engagement is not a requirement for all learning” he states that the engaged brain “brings more to the table” because “engagement activates more of the pleasure structures in the brain” and therefore the brain is more receptive to learning (Jensen, 2005, p. 35). An engaging curriculum appears to improve student learning.

However engagement alone is not enough. Students may be engaged in an activity because it is interesting and entertaining but for an activity to impact learning, it must elicit a level of intrinsic motivation. Blumenfeld, Kempler and Krajcik (2006) state that for learning to happen, that is for an increase in skills and knowledge to occur, students must engage on a cognitive level. “Cognitive engagement mediates the ways in which values and needs relate to learning and achievement” (Blumenfeld, Kempler & Krajcik, 2006, p. 477). The authors conclude, “Motivation sets the stage for cognitive engagement” (Blumenfeld, Kempler & Krajcik, 2006, p. 476).

Christensen, Horn and Johnson (2008), Greene et al. (2004), and Sousa (2006) are among the researchers who concur that motivation must be present in order for engagement and learning
to be successful. “Unless students are motivated, they will reject the rigor of any learning task and abandon it before achieving success” (Christensen, Horn & Johnson, 2008, p. 7). Greene et al. (2004) state, “One of the critical influences on students’ choice of cognitive strategies is their motivation to learn” (Greene, et al., 2004, p. 463). Students become motivated when they are able to connect their learning to something of personal relevance and value.

If engagement is contingent upon motivation, then what is the nature of those activities that increase student motivation? Schools have traditionally used grades, awards, and other incentives in an attempt to motivate students to work hard and stay engaged. However these are external motivators and hold little value to students who are in the final year of high school and who are looking at the next phase of their lives (Sousa, 2006). “It’s no secret that learning best occurs when the learner is intrinsically motivated” (Sousa, 2006, pp. 65-66). Therefore educators must find ways to increase their students’ motivation to learn.

Researchers have determined that learning activities containing active and reflective opportunities, and those that allow students to have a choice in what and how they learn, result in high levels of intrinsic motivation (Jensen, 2005; Newman, 1992; Sousa, 2006). In addition, research indicates that learning opportunities that connect to real-world experiences, ones that hold a high level of relevance to the students and to their values, produce a more motivated and engaged learner (Csikszentmihalyi & Schneider, 2000; Jensen, 2005; Sousa, 2006). The components of a senior project contain student choice, relevance, and real-world connections and therefore may improve levels of engagement and motivation in high school seniors (Littky, 2004; Sizer, 2002).
Engaging Curricula

A further examination of the types of curricula and innovative programs schools use to engage and motivate students is worth consideration in relationship to the topic of this study. There appear to be some common elements in the learning opportunities that engage and motivate students. These elements include active learning, relevance, and creativity (Brown, 2006; Connor, 2009; Csikszentmihalyi & Schneider, 2000; Darling-Hammond, 2010; Jensen, 2005; Littky, 2004; Sousa, 2006; Sizer, 2002; Wraga, 2009).

Lave and Wenger (2009) state, “all theories of learning are based on fundamental assumptions about the person, the world, and their relations” (Lave & Wenger, 2009, p. 47). This interplay between the learner, what they value, and how they participate in the learning process is reflected in the works of Darling-Hammond (2010), Schiro (2008), Shernoff et al. (2003) and others. Often termed authentic pedagogy (Darling-Hammond, 2010) and project-based learning (Marham, 2011), learning experiences that involve “meaningful inquiry to solve real life problems that extend beyond the classroom” are found to engage students in more meaningful and lasting ways (Shernoff et al., 2003, p. 158-159). It is “curriculum, instruction, and assessment that requires students to apply their learning in real-world contexts” (Darling-Hammond, 2010, p. 239).

The type of active learning described here is consistent with the components found in a senior project curriculum. As Littky (2004) states, this type of learning experience requires “[g]etting outside your own environment to make learning real” (Littky, 2004, p.82) and as Schiro (2008) says this type of learning opportunity “enables learners to understand and adapt to their world” because they can construct meaning from hands-on experiences (Schiro, 2008, p.
Evidence suggests that establishing meaning to content is essential in order to create lifelong learners (Beane, 1997; Berliner, 2010; Brown, 2006; Drake, 2007; Wraga, 2009).

Csikszentmihalyi and Schneider (2000) reveal that schools can foster greater student engagement by promoting more opportunities for students to connect their learning with their future goals. The authors demonstrate that it is essential for adolescents and the adults who teach them to create a shared sense of purpose and that the traditional structure of school is not only boring to many adolescents but it does not foster the ingenuity and creativity needed in the twenty-first century. The authors make recommendations on how to engage students in their learning thereby producing lifelong learners and productive citizens. These recommendations include increasing the amount of creativity and flexibility in the school curriculum, providing more opportunities for students to extend their learning beyond the classroom walls, and encouraging students to investigate a variety of career paths. One way to accomplish these recommendations is through a senior project model. Sizer (2002) concurs stating “the senior project and the resulting exhibition can transform the experience of the senior spring. The senior project should be interdisciplinary, to reinforce the idea that the boundaries that seem so fixed during high school are going to be much more fluid later on” (Sizer, 2002, p. 217).

The literature suggests that one answer to the challenge of keeping seniors engaged and motivated during their last year of high school is to offer curricular opportunities that are designed to be active, relevant, and creative and that provide students a choice to pursue an area of study that may help them to make the transition from high school to college or work. Thus “[f]ostering greater engagement in schooling may be achieved not only through structuring activities but also through promoting their connection to students’ future goals”
When students become instrumental in working toward their future goals, they may develop feelings of self-efficacy.

**Self-Efficacy**

Curriculum, instruction and assessment practices that engage and motivate students to achieve deep levels of learning, contribute to the creation of a student population that has an increased chance for success in the future (Bandura, 1997; Connor, 2009; Goddard, Hoy & Hoy, 2004; Greene et al., 2004; Kenny et al., 2010; Miller, 2011). Connor (2009) states that engagement is a contributing factor to the quality of life among students and Kenny et al. (2010) finds that “feelings of academic efficacy” have a positive impact on student perceptions of success in the future (Kenny et al., 2010, p. 210). An engaging curriculum like a senior project, may impact levels of self-efficacy and increase students’ ability to reach their personal goals (Carberry, Lee & Ohland, 2010).

Bandura (1997) in Goddard, Hoy and Hoy (2004) states “all efficacy beliefs are future-oriented judgments about capabilities required to produce given attainments” (Goddard, Hoy & Hoy, 2004, p 3). In other words, high levels of efficacy aid students in reaching their goals. Miller (2011) defines self-efficacy as “beliefs in one’s capabilities to organize and execute the course of action required to produce given attainments” (Miller, 2011, p. 244). Thus a high level of self-efficacy not only helps students navigate their world but it also assists them when facing adversity and it gives them confidence in their ability to problem solve (Blumenfeld, Kempler & Krajcik, 2006; Greene et al., 2004; Miller, 2010).

Greene et al. (2004) state that the impact of motivation on cognitive development is supported by the degree to which the students view their instrumentality in selected activities (Greene et al., 2004). It appears that engagement with intrinsic motivation produces perceived
instrumentality, which fosters increased perceptions of self-efficacy. A senior project may motivate students to be more engaged in their learning because they have a choice in their topic of concentration.

Therefore a senior project, which offers students more choice and creativity in their academic pursuits, might give students a sense of control and purpose at a time in their lives when they are about to begin a more independent lifestyle. Blumenfeld, Kempler and Krajcik (2006) state, “[a]utonomy refers to perception of a sense of agency, which occurs when students have the opportunity for choices and for playing a significant role in directing their own activity” (Blumenfeld, Kempler & Krajcik, 2006, p. 477). This autonomy and control may increase student levels of motivation and engagement, leading to greater feelings of self-efficacy and the potential to be successful.

Senior Project

In its 2001 report, the National Commission on the High School Senior Year contends that seniors should have alternatives to the traditional high school program of studies and recommends that all seniors complete a capstone project, internship, or community service activity. Nancy Sizer (2002) in her book, *Crossing the stage: Redesigning senior year*, provides an alternative to the traditional senior year curriculum. Her goal is to gain a deep understanding of what high school seniors want and how to better serve their needs so they can become successful adults. She recommends that high schools provide a senior project to all seniors. Her text includes a comprehensive description of what a successful senior project should include. Components such as senior seminars, teacher collaboration, and community involvement are essential to ensuring the senior project maintains a level of rigor and accountability while
providing students with choice and flexibility that is deemed essential to fostering engagement and independence (Sizer, 2002).

Csikzentmihalyi and Schneider (2000) offer a look at the attitudes, behaviors, and expectations of teenagers as they contemplate making the transition from high school to the working world. The authors examine student attitudes toward work, success, and ways in which they perceive the value of their high school education as it pertains to their future. They determine that schools can foster greater student engagement by promoting more opportunities for students to connect their learning with their future goals (Csikzentmihalyi & Schneider, 2000). A senior project assists students in finding opportunities to experience first hand the realities of certain careers and the skills and pathways needed to be successful in a variety of fields.

Asch (2010) calls for high schools to offer more apprenticeships and programs that help to develop real-world skills enabling the non-college bound student to be more successful after graduation. A senior project requires that students move beyond the confines of the traditional curriculum and make meaning out of their learning. They may do this through a variety of project-based learning activities that frequently connect with a community service learning activity, which is often a component of a senior project. Dreis and Rehage (2008) contend that programs that help to develop the leadership skills, independence, and self-knowledge of students in the senior year include a senior instructional leadership opportunity, a senior project, and a service learning option.

The literature suggests that senioritis is a condition affecting students in the last year of their high school career. The research contends that a lack of engagement, motivation and interest in school is a contributing factor to the problem of senioritis and it supports the concern
that a senior slump contributes to a decrease in learning and feelings of self-efficacy. It is apparent that programs and curricula that offer authentic and relevant learning experiences result in an increase in student achievement and feelings of instrumentality. The literature also suggests that programs such as senior projects contain the components of curriculum, instruction and assessment practices that encourage a high level of student engagement. Therefore, an examination of student perceptions of engagement and feelings of self-efficacy while participating in a senior project will inform this body of literature and will contribute to the efforts of educators to improve learning experiences for all students.

**Chapter III: Research Design**

The problem of practice focuses on how senior projects, as perceived by students, teachers, and administrators, may or may not increase student engagement, motivation, and feelings of efficacy during the senior year. In an effort to examine how senior project impacts engagement and efficacy, there are three research questions.

**Research Questions**

1. Why and how did administrators and teachers in one high school decide to pursue a senior project?
2. How do students, teachers, and school administrators perceive students’ pursuit of senior projects as impacting seniors’ engagement and motivation in school during their senior year?
3. How do students, teachers, and school administrators perceive students’ engagement in senior projects contributing to their self-efficacy in pursuit of meaningful vocations or further education?
The first research question looks at why a school would adopt a senior project and how one school decided to pursue a senior project. This question examines the design options and implementation challenges of a senior project. At the time of this research study, the school has recently completed its first year of full implementation of a senior project. The data from the perceptions of the students, teachers, and administrators as they reflect on the first year of implementation informs other schools that may be considering this type of curriculum design.

The second research question considers senior project through the lens of student engagement theory. It is process-oriented, grounded in the theory of engagement and how the event of senior project influences the level of engagement of students during their senior year of high school (Maxwell & Loomis, 2003). The question seeks to understand the impact of students’ participation in senior project on the phenomenon of senioritis. The second research question also examines how stakeholders perceive levels of student engagement and motivation as a result of participation in a senior project (Maxwell, 2005) and to identify any perceptions that might link theory to practice, for example the effects of choice, creativity and relevance in curriculum on levels of motivation in students and whether this leads to increased engagement.

The third research question examines students’ perceptions of how senior project helps them to consider their future pursuits using self-efficacy theory. This question focuses on how engagement in senior projects may contribute to seniors’ sense of self-efficacy as a result of participation in a senior project. The question seeks to determine whether students may feel more positive about their future success due to the experiences of a senior project. If senior project engages students through activities that have relevance and that align with their personal interests, and if this affects students’ engagement and motivation, does this contribute to students’ feelings of instrumentality in the world? Do students perceive themselves as having a
sense of efficacy in pursuing their goals? And do teachers and school administrators perceive senior projects as impacting students’ engagement in school and motivation to learn?

Based on the research relating student engagement to the structures and components inherent in senior projects, and based on the evidence of programs that share common characteristics like senior projects regarding student instrumentality and choice, the research questions will inform this study concerning the impact of senior project on the problem of practice.

Methodology

This is a case study of one high school’s senior project program. The high school is located on the south shore of Boston, Massachusetts. The data were collected using surveys, focus groups, and interviews (Creswell, 2007; Fraenkel & Wallen, 2009; Maxwell, 2005; Maxwell & Loomis, 2003; Tashakkori & Creswell, 2007). The data were analyzed using attribute and in vivo coding. Emergent themes are further coded using pattern-coding techniques (Saldana, 2009).

Data collected using surveys informed the research questions by producing descriptive measures of perceived levels of student engagement and motivation from the perspective of different stakeholders – students, teachers, and school administrators. These data served as a baseline from which the interview questions were developed. Interviews and focus groups were then conducted, with a “focus on participants’ meanings and context” (Maxwell & Loomis, 2003, p. 10) as they relate to their perceptions of engagement and self-efficacy as a result of participation in a senior project. The data collected were analyzed through the lenses of engagement theory and self-efficacy theory (Maxwell, 2005).
Site and Participants

The study explores a senior project program of one high school. In this school, all seniors are required to complete the Senior Capstone Project, an independent project that synthesizes student learning through career academies in a real-world context. The curricular components of this high school’s senior project are consistent with those shown to improve student engagement. The research states that programs offering independent and relevant learning opportunities impact student motivation (Blumenfeld, Kempler & Krajcik, 2006; Csikszentmihalyi & Schneider, 2000; Dowson & McInerney, 2003; Greene et al., 2004; Kenny et al., 2010; Kuh, 2007; Littky, 2004; Marks, 2000; Marzano, 2007; Schneider & Stevenson, 1999; Schweinle, Reisetter & Stokes, 2009; Smith et al., 2005). Therefore, the data collected on student perceptions of engagement and motivation in this high school informs the research questions.

Participants in the study include self-selected members of the class of 2012, teachers of seniors, the high school principal and associate principal. At the time of this study the high school had a total student enrollment of 2,073 and the senior class had 500 members. The school district’s student population is identified as 85% white, and the four-year graduation rate for 2011 was 83.7%. Approximately two-thirds of graduates in the high school go on to attend four-year colleges or universities. Table 1 provides the high school’s student demographic information.
Table 1

High School Enrollment by Race/Ethnicity, Gender, and Class (2011-2012)

<table>
<thead>
<tr>
<th>Race</th>
<th>% of school</th>
<th>% of state</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>5.2</td>
<td>8.3</td>
</tr>
<tr>
<td>Asian</td>
<td>3.1</td>
<td>5.7</td>
</tr>
<tr>
<td>Hispanic</td>
<td>5.5</td>
<td>16.1</td>
</tr>
<tr>
<td>Native American</td>
<td>0.5</td>
<td>0.2</td>
</tr>
<tr>
<td>White</td>
<td>85.0</td>
<td>67.0</td>
</tr>
<tr>
<td>Native Hawaiian/Pacific Islander</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Multi-Race, Non-Hispanic</td>
<td>0.7</td>
<td>2.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender</th>
<th>School</th>
<th>District</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>1,034</td>
<td>3,566</td>
</tr>
<tr>
<td>Female</td>
<td>1,039</td>
<td>3,359</td>
</tr>
<tr>
<td>Total</td>
<td>2,073</td>
<td>6,925</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Enrollment by Grade</th>
<th>Grade</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enrollment</td>
<td>559</td>
<td>504</td>
<td>502</td>
<td>500</td>
<td></td>
</tr>
</tbody>
</table>


Data Collection

A letter describing the study was sent to the superintendent requesting permission to conduct research on the senior project in the district’s high school (see Appendix A). Permission was granted and arrangements were made to recruit student and teacher volunteers. Students were recruited during class time and teachers were contacted via email. Consent forms explaining the study were distributed to all interested students and their parents (for students less than 18 years of age) and to all interested teachers and administrators (see Appendix B).

Once consent forms were returned, a survey instrument for students, and one for teachers, was made available through an online survey link and was sent via email to all consenting subjects (Appendices C and D). Participation was strictly voluntary and recruitment was done with the least disruption as possible to the school schedule. Once the surveys were completed,
the participants took part in student or teacher focus groups and the principal, associate principal and program director were interviewed. All face-to-face data collection occurred at the high school during two days. All participant results are reported anonymously.

There are several sets of data using a variety of sources to address the research questions:

1. senior project program information (document analysis and administrator interviews and teacher and student focus groups)
2. perceptions of student motivation and the impact of senior project on their student motivation (survey and administrator interviews and teacher and student focus groups)
3. perceptions of student self-efficacy and the impact of senior project on their self-efficacy (survey and administrator interviews and teacher and student focus groups)
4. student narratives of the senior project experience.

First, the researcher must have comprehensive knowledge of the components, structure, and implementation of this high school’s senior project program. These data were collected through artifacts such as the high school program of studies, the senior project handouts and rubrics, as well as in interviews with the teachers, administrators, and the program director. An examination of the practices and protocols of this high school’s senior project program informs the research questions by identifying characteristics that impact student engagement, motivation, and self-efficacy.

Data to measure student motivation and perceptions of self-efficacy were collected through an online survey of students and teachers during the spring of their senior year of high school. Pre-existing instruments such as the Motivated Strategies for Learning Questionnaire (Sungur & Tekkaya, 2006), and the Intrinsic Motivation Inventory Instrument (Connor, 2009)
informed the design of the surveys for data collection on levels of student motivation. Instruments such as the Coopersmith Self-Esteem Inventory School Forms (Wells, et al., 2002) served as a guide for the survey questions designed to measure career aspirations and self-efficacy. Interviews with administrators and focus groups with students and with teachers were audio recorded and transcribed.

**Data Analysis**

The data collected via survey were entered into an electronic spreadsheet and analyzed using sorting, searching and graphing tools in order to view what the data say about student engagement, motivation, and perceptions of efficacy related to their participation in the senior project.

The data were initially coded using attribute coding for classification purposes, and eventually themes (Saldana, 2009). Coding allows the researcher to reduce the data to “a small, manageable set of themes” (Creswell, 2007, p. 153). The iterative coding process allowed the researcher to identify central themes related to the topic of student engagement, motivation, and students’ perceptions of self-efficacy in relationship to participation in their school’s senior project.

The data collected through interviews and focus groups were analyzed using a blend of coding methods including, but not exclusively, attribute and in vivo methods during first cycle coding and pattern and theoretical methods during second cycle coding (Saldana, 2009). Saldana (2009) says that “coding is not just labeling, it is linking” (Saldana, 2009. p. 8). In this study the data were coded to reveal possible relationships between the theoretical frameworks and student perceptions of engagement and self-efficacy, which then developed into potential themes concerning senior project programs and student learning.
During the first cycle of coding, the data were coded in order to frame the experience of the senior year and senior project in the words of the students and staff (Saldana, 2009). Emotion and value coding methods were used to identify student feelings and perceptions, attitudes and beliefs. These data informed the research questions by recording the student perceptions of their experiences during senior project. Concurrently with affective coding methods, the first cycle of coding also included magnitude coding to assign an evaluative code to the aforementioned affective codes and to interviews with the program directors, school administrators, and students (Saldana, 2009).

The second cycle of coding employed theoretical coding to identify central categories (Saldana, 2009). In this phase, the researcher looked for themes of engagement and motivation in order to link with the theoretical concepts that frame this study and that indicate effective student learning opportunities. This study attempts to understand the relationship between senior project and senioritis.

**Validity and Credibility**

This study focused on students as they experience the senior project and looked at how this activity impacts their perceptions of engagement and efficacy. Therefore, the limitations of the study are focused on student perceptions of engagement and efficacy as they relate to the experience of participating in a senior project in their particular school. In an effort to ensure that the conclusions drawn from this study are warranted, the study used adequate controls such as consistent formatting of the interview and review methodologies and consistent coding practices to ensure consistency of results (Creswell, 2007; Leedy & Ormrod, 2005).

The study is limited to the populations of one high school, which limits the external validity of the results. One other significant limitation pertains to the fact that this study
documents the inaugural year of the high school’s senior project. Some data appear to be linked to the presence of stress, an inevitable occurrence during times of change. However, results from this study may inform curricular, instructional, and evaluative structures that engage and motivate students and support their sense of self-efficacy beyond high school.

**Protection of Human Subjects**

All participants had signed letters of consent and those under the age of eighteen had signed letters of consent from their parent or guardians. All of the names of the teachers have been changed to a pseudonym to guarantee confidentiality. All data collected was held in confidence, and there was no personally identifiable information used in publications that describe the study (Fraenkel & Wallen, 2009). All audio recordings and research materials were digitally secured on one laptop. The high school administrative staff will be offered access to a preliminary copy of any publication that comes out of the research. This research project is in full compliance with Northeastern University's Institutional Review Board (IRB) policies.

**Chapter IV: Report of Research Findings**

The purpose of this study is to examine the perceived impact of participation in a senior project on student engagement, motivation, and self-efficacy during the senior year of high school. In this section, an overview of the data collected is followed by a presentation of the data as they relate to the three research questions. These questions examine one high school’s decision to adopt and develop a senior project, and the student, teacher, and administrator perspectives in relation to the senior project experience. These data were collected via surveys, focus groups, interviews, as well as the high school program of study and senior capstone project documents.

**Participants and Data Overview**
A total of 30 students, and 8 adults participated in the research study. Thirty students completed the online survey and twenty-six of them participated in focus groups. Of the eighteen Senior Capstone Project advisors who were invited to the study, six volunteered to participate. The high school principal and associate principal also agreed to be interviewed. The data were collected through an online survey of students and teachers, and through student and teacher focus groups and school administrator interviews occurring over two days. The survey data were entered into an excel spreadsheet and analyzed using sorting and graphing techniques. The student focus group data were analyzed using various coding methods including attribute, in vivo and magnitude.

**Study Context**

This study was conducted at a high school in Southeastern Massachusetts during the first year of their implementation of a senior project. The online surveys, focus groups, and interviews occurred one month after the students had completed their senior projects. All of the students in the study completed their senior projects on time and all of them received a passing grade. The senior project in this high school is called the Senior Capstone Project, therefore in this study the term “capstone” refers to this school’s senior project.

**Research Question #1: Why and how did administrators and teachers in one high school decide to pursue a senior project?**

The first research question investigates how a school decides to pursue a senior project. Therefore, this first section describes the events that led to the development of the senior project in a particular high school. Data to address this research question were collected through school documents, focus groups, and interviews. The findings presented here, begin with an account of
how the high school arrived at the decision to develop a senior project, followed by a description of the components of this particular senior project program.

**Program development.** The decision to pursue a senior capstone project developed out of a school-wide curriculum re-design that was launched as a strategy to address an unfavorable report from a 2008 site visit of the New England Association of Schools and Colleges (NEASC).

NEASC is the New England educational accrediting organization that evaluates New England schools and colleges based on a set of research-based standards for best practices. For high school accreditation, there are four teaching and learning standards and three support standards. The NEASC report for this high school indicated that changes needed to be made to three of the teaching and learning standards in the areas of curriculum, student learning expectations, and assessment practices including the use of school wide rubrics. As Paul, one of the capstone project advisors and a member of the senior capstone project design team, explained:

We had received notification from NEASC that we were going to be put on warning and there were a variety of things that was the cause of that, which was our lack of using school-wide rubrics and reporting out on skills. And in sort of a way to address those problems on a fundamental level we started doing research to a curricular re-design.

In January 2009, the principal announced to the faculty that they were to incorporate the 21st century skills of communication, collaboration, creativity, and critical thinking (Trilling & Fadel, 2009) into the curriculum and that they were going to do this by designing the curriculum around college and career academies. The current high school principal reflects, “The principal at that time wanted to find the leaders in the school so he challenged the faculty to bring in these 21st century skills. He wanted it to happen in a grassroots kind of movement.” Jeff, a capstone
advisor, recalls this event as more of a directive from the principal. Jeff says, “He (the principal) walked into our faculty meeting and said, ‘you are going to do academies.’” It was out of the career academy design that led to the school’s development of a senior capstone project.

**The development of the senior capstone.** To understand the development of the school’s senior project program, it is important to understand the concept of the career academies because they played an instrumental role in the development of the senior capstone project at this high school.

The intention of the career academy model is to create connections between the classroom and the real world. The ultimate goal is to prepare students to make informed decisions about the careers they intend to pursue. As Ed, a teacher in the math and science academy said, the “Academies provide great structure for kids who know what they want but it is not CTE (Career and Technical Education) related”. At the high school, during the freshman and sophomore years, students follow a traditional program of study, which includes English, mathematics, science, social studies, and non-core subjects such as art and health. The students have some career exploration that is embedded in the English Language Arts curriculum during the sophomore year. In the late spring of their sophomore year, students then attend an assembly where staff members present information about each academy and help students choose a pathway that best represents their college and career interests. Once students make a choice, they spend their junior and senior years in their chosen academies. The academy curricula align with the high school graduation requirements, which include four credits in English, three credits each in mathematics, science, and social sciences, however the academies serve as a mechanism for students to take advantage of the high school’s numerous elective offerings and to focus on
an area of personal interest. Students may change academies during their junior year but few do so. The high school academy model is illustrated in Figure 1.

1

Figure 1. Career Academies

Each academy has multiple career exploration pathways. For example students in the business and entrepreneurial academy may select from pathways such as accounting/finance, marketing, and sports management whereas students in the fine arts academy may choose among

1 Note. CTE stands for Career and Technical Education. Students who choose the CTE academy enter that academy in grade 9. It is worthy to note that the NEASC recognized this curriculum redesign as cause to lift the warning status and grant full accreditation back to the high school in 2010. This figure is a replica of the academy structure graphic from the high school’s program of studies.
pathways in writing, music education, music performance and industry, fine or commercial art. The academy model allows students to gain a level of expertise in an area of personal interest and to share their knowledge with the community. Kathy, the capstone project director, explains the academy design:

We found we had so many electives that we needed a way to channel them and so we made academies. Some parents feared we were tracking their kids but our argument to the parents is, all we’re asking them (the students) to do is explore and have them be able to make a decision or not.

Most of the students in this study felt that the career academy design has value. A student in the business academy explains, “it puts us where we might want to go—a good starting point. It helped me pick exactly what I want to do.” Only three of the twenty-six students who participated in the focus groups said that the academy model had no value for them. One of these students is planning to join the Marines. The other two are planning to study mathematics in college.

Once the curriculum leadership design team began to research the academy model, they discovered that a senior capstone project would bring cohesion to the new career pathway initiative and do it in a public display of student learning. A boy in the fine arts academy states, “The main focus of the academies is to get you a starting point. It narrows the high school down and gives you somewhere to focus on and gives you an idea of what to do your capstone on.” A capstone advisor explains it this way: “The capstone seemed like the perfect synthesis of all the different opportunities we really wanted to give our students.” The concept of a senior capstone project was to give the new curricula of the academies a unifying structure. A member of the design team explains:
The idea of a capstone came out of the fine arts academy then went to the design leadership team to give the academies’ curriculums cohesion and scope. If you combine that with the NEASC directive to demonstrate school wide expectations we married those two and that’s where the capstone came.

And so in March of 2009, the design team began to create the high school senior capstone project. The class of 2012, the freshmen class during the time of this development, was the first group to go through the academy structure and the first to have to complete the senior capstone project as partial fulfillment of the graduation requirement. These students are represented in this study.

**The capstone project.** Out of this development effort, the senior capstone project became a graduation requirement in which students complete an independent research project that synthesizes a theme in their career academy pathway in a real-world context while using the 21st century skills of communication, collaboration, creativity and critical thinking (J. G., personal communication, May 1, 2012). Students design and produce a rigorous and independent project that answers a central or essential question related to their career academy.

Students choose a topic of personal interest and complete a proposal worksheet that includes a project title, the student’s goal for the project, and their strategy to accomplish the project. They must seek at least ten sources and are encouraged to include live interviews in their bibliographies. The projects are presented at the capstone fair, a public display of student-driven information. This first capstone fair included live performances, suicide prevention awareness campaigns and biomedical engineering designs. The senior capstone project is worth two credits toward graduation.
**Capstone project requirements and timeline.** There are ten steps students must complete, beginning in the spring of their junior year and culminating one year later with a presentation at the capstone fair and a reflection paper due one week later. Students are responsible for completing all of the steps and though they may work in a group, they are individually assessed. There are four graded components of the project – journal entries, submission of resources, actually doing the project, and the reflection piece. Each step is intended to keep students on track by requiring a product be submitted to an advisor each month beginning in September of the senior year. Table 2 illustrates the capstone timeline. For additional information on the capstone project components and requirements, see Appendix E.

Table 2

**Capstone Timeline**

<table>
<thead>
<tr>
<th>Task</th>
<th>Timeline</th>
<th>Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Define the problem</td>
<td>May junior year</td>
<td>1. Capstone assembly</td>
</tr>
<tr>
<td></td>
<td>May junior year</td>
<td>2. Selection of Theme/Focus</td>
</tr>
<tr>
<td></td>
<td>June of junior year</td>
<td>3. Capstone proposal</td>
</tr>
<tr>
<td>Strategic planning</td>
<td>September senior year</td>
<td>4. Research question</td>
</tr>
<tr>
<td></td>
<td>October senior year</td>
<td>5. Select presentation method</td>
</tr>
<tr>
<td>Research and design</td>
<td>November senior year</td>
<td>6. Independent research</td>
</tr>
<tr>
<td></td>
<td>December senior year</td>
<td>7. Link to 21st century skills</td>
</tr>
<tr>
<td>Presentation and reflection</td>
<td>January senior year</td>
<td>8. Finalize presentation</td>
</tr>
<tr>
<td></td>
<td>March senior year</td>
<td>9. Capstone fair</td>
</tr>
<tr>
<td></td>
<td>April senior year</td>
<td>10. Reflection paper</td>
</tr>
</tbody>
</table>

Note. Assignments 2-7 are reported out on worksheets provided in the senior capstone project packet. Students submit completed worksheets to their capstone advisors every month. Assignments 4-8 are graded pass/fail and assignments 9 and 10 are given a final grade.

Students who do not complete the senior capstone project may enroll in an evening course, at their own expense, and must write a ten to fifteen page research paper before they can
be eligible to graduate. The capstone project deadline of early April allows enough time for credit recovery for those students who do not pass the capstone project. If this option is not attainable, then students must attend summer school before they can be considered eligible to graduate. Ninety-five percent of the class of 2012 completed their senior capstone projects on time. Nineteen attended the evening course and the remaining six students were enrolled in alternative learning programs.

**Role of the capstone project advisor.** Students are assigned to a capstone advisor in the fall of their senior year. A capstone advisor is a faculty member in the student’s chosen career pathway, who guides the student through the capstone project process. Some capstone advisors have their advisees as students in the regular classroom while others are working with their advisees for the first time. Each capstone advisor holds a twenty-minute homeroom once a month with their group of advisees in order to allow students time to check in on their progress and to seek guidance if needed. Each advisor is assigned between twenty to thirty advisees. Capstone advisors are responsible for assessing students on a pass/fail basis during the first and second terms and for determining a capstone project final grade in the third term based on completion of assignments 4 – 10 as shown in Table 2. Capstone advisors receive a stipend for their work.

In general, the teachers felt that the role of capstone advisor was a lot of extra work. Maureen, an advisor says she was, “very much overwhelmed.” Jeff concurs, “I’ve taught reading, at-risk students, AP and freshmen, and this was the most educationally challenged experience I’ve ever had.” Five of the six advisors who participated in the focus groups were supportive of the senior capstone project; however they stated that it increased their workload substantially.
Student responses indicate that the advisory model did not meet their needs during the capstone project process. When asked what they liked least about the capstone project, 50% of the students stated that the advisor model was ineffective. “The advisor wasn’t helpful at all,” says one student. “My advisor didn’t even know my name for the first four months,” says another. “At the beginning, half of the advisors didn’t know what they were supposed to do,” states a student while her peers nod in agreement. One student suggested that the advisors should be required to do their own reflection paper in an effort to improve the advisor/advisee model. The advisors met in early May after the senior capstone project was completed to address the issue of the advisor piece and to discuss revisions they intend to make to the capstone project program for the following year.

**Capstone presentation.** The senior capstone project presentations occur over two nights at an event called, The Capstone Fair. The first night focuses on the projects of students in the science, technology, engineering, mathematics and CTE academies while the second night concentrates on presentations from students in the humanities and fine arts academies. On the night of the presentations, students arrive in appropriate dress and set up their displays. Judges, who are either teachers or community volunteers, assess the presentations. Each judge uses a common rubric and is assigned a group of students to evaluate. The goal for the student on the night of the fair, is to provide the judges a clear explanation and display of their project and to be prepared to address questions about their topic from their judge and others in attendance. Each evening lasts for two hours.

All of the teachers and administrators in this study had high praise for the students on the two nights of the capstone fair. Every adult interviewed stated they were “blown away” by the performances of the students. Paul sums it up in this sentiment:
On the capstone nights the building was packed with adults coming in and other students coming in to see the academic work of the students and it seems bizarre to say this in a high school but you know often times it’s the extra-curriculars that are featured and it was so wonderful to see kids excited about academic work. To see them using language that is appropriate when discussing, ‘these are the skills I learned,’ and having that meta-cognitive awareness over their own education which I think is entirely empowering. It blew me away.

Thirty-three percent of the students, when asked what they liked the most about the capstone project, said it was the presentation night. One student says, “I liked the experience we got when we presented. It felt good that people actually cared what you did.” And another states, “I liked the presentation, it was the culmination of everything you had done and it gave you a chance to hear what others think of what you know.”

**Student reflections.** The final assignment in the senior capstone project is a student reflection paper. In this task, students are asked to reflect on what they learned about their topic, the skills they mastered, the things they are most proud of and what they would change. The student reflections provide useful feedback for advisors and program directors regarding design and implementation of future senior capstone projects. Ninety percent of the students in this study said that the reflection piece was more of a nuisance than a learning experience. “It was just way too much paperwork,” says one boy. “I don’t even remember what I wrote in my reflection,” says another. In fact, five of the six teachers stated that they were unimpressed with the reflection papers of their advisees. The principal was more forthright with her expectation of the reflection paper by stating, “Most of the kids were either savvy enough to know what the expectation for the reflection paper was and what they were supposed to get out of it and they
knew the right answers or legitimately got to the right answers.” The reflection papers had not been fully processed at the time of this study.

**Summary of findings related to Research Question 1.** The decision to pursue a senior project in this high school grew out of the school’s need to improve its curriculum, instruction, and assessment practices in response to its accreditation evaluation from the NEASC. Because of this NEASC evaluation, the high school staff re-designed the curricula and developed a career academy model. The senior capstone project grew out of this academy curriculum design to be an independent research project that serves as the culmination of the student’s high school experience. The capstone fair is a public demonstration of student learning as a result of the senior capstone project.

One of the features of the senior capstone project is that it is linked to a career academy, which reflects the student’s personal interests and future plans. Student engagement and motivation tends to increase when students are given the opportunity to connect learning to personal interests and relevant experiences. The second research question investigates how this senior project impacts student perceptions of engagement and motivation.

**Research Question #2: How do students, teachers and school administrators perceive students’ pursuit of senior projects as impacting seniors’ engagement and motivation in school during their senior year?**

The second research question examines student, teacher and school administrator perceptions of the impact of senior projects on students’ engagement and motivation. The data to answer this question were collected through student and teacher online surveys and focus groups, and through school administrator interviews. The data are presented in the following order:

1) student survey responses to the survey statements related to engagement,
2) student focus group responses to questions related to factors that influence engagement and motivation,

3) teacher survey responses to statements related to factors that may influence student engagement and motivation,

4) teacher focus group responses to questions related to factors that may impact student engagement and motivation, and

5) administrator responses to questions related to factors that may impact student engagement and motivation.

**Student survey data.** One method of collecting student data to address this research question was through an online survey. The online survey instrument was designed in part to measure student opinions on statements regarding themes related to engagement and motivation. Five of the ten items on the student survey were designed to measure the value of senior project on areas of relevance, motivation, and creativity (See Table 3), and thus are reported in this section in relationship to Research Question 2. When learning experiences offer opportunities for creativity, student motivation increases. Likewise, when learning experiences are relevant to student interests, student motivation and engagement in learning is impacted. Students were asked to rank the statements on a 5-point scale from strongly disagree to strongly agree. The number of students responding to each item is also presented in Table 3.
Table 3

**Student Survey Responses to Statements on Engagement**

<table>
<thead>
<tr>
<th>Item</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Disagree or Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I would prefer to be in a traditional classroom than participate on my senior project.</td>
<td>6.7% (2)</td>
<td>46.7% (14)</td>
<td>20% (6)</td>
<td>20% (6)</td>
<td>6.7% (2)</td>
</tr>
<tr>
<td>My senior project topic relates to my future pursuits.</td>
<td>13.3% (4)</td>
<td>6.7% (2)</td>
<td>6.7% (2)</td>
<td>50.0% (15)</td>
<td>23.3% (7)</td>
</tr>
<tr>
<td>The senior project has helped me to know what I want to do after high school.</td>
<td>10.0% (3)</td>
<td>30.0% (9)</td>
<td>26.7% (8)</td>
<td>26.7% (8)</td>
<td>6.7% (2)</td>
</tr>
<tr>
<td>My senior project will not be useful to me in my future pursuits.</td>
<td>10.0% (3)</td>
<td>40.0% (12)</td>
<td>23.3% (7)</td>
<td>16.7% (5)</td>
<td>10.0% (3)</td>
</tr>
<tr>
<td>I have learned more as a result of my senior project than I would if I were sitting in a classroom.</td>
<td>10.0% (3)</td>
<td>33.3% (10)</td>
<td>16.7% (5)</td>
<td>33.3% (10)</td>
<td>6.7% (2)</td>
</tr>
</tbody>
</table>

Note. N=30

*I would prefer to be in a traditional classroom than participate on my senior project.*

As is illustrated above, 53% of the students responded that they disagree or strongly disagree with this statement. The data suggests that by a student’s senior year in high school, alternative-learning experiences that are more independent and relevant than traditional school projects may be more attractive and may therefore motivate students to stay engaged in their learning. The student responses also suggests that students in their senior year may be more ready to engage in independent pursuits such as college-level work or a vocation. The senior project is a non-traditional learning experience that requires students to pursue an area of interest and to work independently. By their senior year, students may be ready for a change in their schooling experience and therefore the mention of a traditional classroom elicits a more negative response.
**My senior project topic relates to my future pursuits.** Seventy-three percent of the students surveyed agreed or strongly agreed with this statement. The senior capstone project in this high school is the culmination of a curriculum that is designed to guide students toward a career pathway. The response to this statement may be linked to the curriculum re-design that the school initiated, which created the career academies and thus provides students with a clear idea of what they may want to do after high school. The high response is significant to student engagement and motivation because students tend to be more engaged and motivated in their learning when they engage in areas of personal interest and to topics they find to be relevant for their future pursuits. In this senior project design, students have substantial flexibility in choosing a topic of interest as long as they can relate the topic to their career academy.

**The senior project has helped me to know what I want to do after high school.** Forty percent of students either disagreed or strongly disagreed with this statement, 33% agreed or strongly agreed, and 26% neither agreed nor disagreed with the statement. It is interesting that the student responses to this statement appear to be inconsistent with their opinions on the previous statement. Students perceived a relationship between the senior project and their future pursuits but they do not consider the senior project as helping them to know what they want to do after high school. These results may be due to the career academy curriculum model and the fact that students choose a senior project topic that relates to their academy and therefore their future pursuits. The actual senior project did not necessarily help the students know what they wanted to do after high school because they already knew what they wanted to do after high school more as a result of the career academies than the completion of the senior project.

**My senior project will not be useful to me in my future pursuits.** Fifty percent of the students disagreed with this statement and 23% agreed or had no opinion. While 73% answered
that their senior project topic related to their future pursuits, that number dropped to 50% when asked whether the senior project would be useful to them in their future pursuits. This means that although the majority of the students considered their senior project topic to be relevant to their future plans, only half see their project as being useful to them in their future pursuits. The students perceive the relevance of their topic for senior project but they may not consider its value or usefulness in those pursuits.

*I have learned more as a result of my senior project than I would if I were sitting in a classroom.* This statement is to determine student perceptions of the impact of flexible and independent learning designs as compared to traditional classroom teaching. Forty-three percent disagreed with this statement and 40% agreed. These are slightly lower results than the same concept presented as an affirmative where most students stated that they would not prefer to be in a traditional classroom. The somewhat ambivalent response to this statement therefore may simply indicate that students recognize the value of both traditional classroom instruction and independent learning.

*Summary of student survey results in relationship to Research Question 2.* The results of the student survey related to engagement and motivation shows that most of the students perceive the senior project to be relevant to their future pursuits. Student engagement and motivation in school increases when students perceive what they are learning to be relevant to their interests and future pursuits. In addition, the survey data on statements regarding engagement indicate that more students prefer independent and alternative-learning opportunities offered through the senior project than a more traditional classroom setting.

*Student focus group data.* Twenty-six students participated in one of four focus groups. Sixteen girls and ten boys participated. Twelve of the students did their capstone project with at
least one other student and 16 of them worked on their own. Five of the six academies were represented among the focus group participants. There were no students from the global studies academy in the focus groups. Eighteen students indicated that the senior capstone project was related to their future plans. Table 4 illustrates these data.

Table 4

*Student Focus Group Participant Data*

<table>
<thead>
<tr>
<th>Category</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>10</td>
</tr>
<tr>
<td>Females</td>
<td>16</td>
</tr>
<tr>
<td>Worked in groups</td>
<td>10</td>
</tr>
<tr>
<td>Worked independently</td>
<td>16</td>
</tr>
<tr>
<td>Project related to future plans:</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>18</td>
</tr>
<tr>
<td>No</td>
<td>4</td>
</tr>
<tr>
<td>Future plans undecided</td>
<td>4</td>
</tr>
</tbody>
</table>

Note: The math/science academy had the most students represented at nine, followed by six each from the business/entrepreneurial academy and the fine arts academy. Four students represented the humanities academy and one was from the CTE academy.

During the focus groups, all students were asked the same set of questions, as presented in Table 5. In this section, student responses to the questions related to students’ perceptions of engagement and motivation are presented.
Table 5

Student Focus Group Questions on Engagement

<table>
<thead>
<tr>
<th>Student Focus Group Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What was your topic for the senior capstone project and why did you choose it?</td>
</tr>
<tr>
<td>2. What did you like the most about the senior capstone project?</td>
</tr>
<tr>
<td>3. What did you like the least?</td>
</tr>
<tr>
<td>4. How did the academy model support your senior project and/or plans for the future?</td>
</tr>
<tr>
<td>5. What advice would you give to the junior class regarding the capstone project?</td>
</tr>
</tbody>
</table>

**What was your topic for the senior capstone project and why did you choose it?** The purpose of this question is to see if students chose topics of personal interest and relevance for their senior capstone project. Relevance is a contributing factor to student engagement and motivation. Twenty of the 24 students who answered this question, or 83%, said that they chose their topic because it was a topic of interest to them either because it was directly related to their future pursuits or because it had some intrinsic value to them on a personal level. Three students indicated they were undecided about their plans for the future. Table 6 illustrates a sample of the topics students chose to do for their senior capstone projects and their reasons for choosing the topics. For a complete list of project topics see Appendix F.
Table 6

Illustrative Comments Related Choice Topics

**Personal Interest (N=5)**

I did mine on the Walk for Alzheimer’s because my grandmother has the disease.

I produced a comic book because I have a passion for comic books.

I’m an athlete and they were going to cut the sports budget so I did mine on the benefits of physical fitness to find reasons to keep sports in the school.

**Relevance to future pursuit (N=5)**

My capstone was on the effects of physical performance because after high school I’m going to get a personal trainer’s license.

I was an assistant manager of a varsity team because I want to be a coach and I have always played sports.

I did mine on running shoes and how to prevent injuries because I want to go into biomedical engineering.

**Relevance to present and future pursuits (N=2)**

I designed and built a model house because I’m in construction and so it’s what I’ve been doing for the past 4 years.

**Intrinsic Value (N=8)**

I did my project on an anti-bullying tee-shirt campaign because I wanted to do something that had meaning.

All but four of the students chose their topic because it was related to their future goals. In most of the student responses to this question, a topic related to a personal interest was also relevant to their future goal even if it did not directly relate to a college or career path. What is significant to the student responses to this question is that most of the students said that the topic they chose for their senior project was meaningful to them.

*What did you like the most about the senior capstone project?* The purpose of this question is to determine the components of this senior project model that students considered to
be strengths and therefore to gain an understanding of what might lead to improving student engagement. Two themes emerged from the student response data to this question. These themes are collaboration and relevance. Students stated that the things they liked the best about the senior project were both the presentation night and the feedback they received on exhibiting their knowledge to the school and community, and the opportunity the senior project afforded them to delve into something that had meaning and relevance.

*Collaboration.* One third of the students indicated that the collaborative piece of the capstone experience, in particular the experience of the presentation night, was what they liked the most. Students indicated that they enjoyed working with their peers, presenting to others and receiving feedback from the audience at the capstone fair. One form of collaboration was student-to-student collaboration. A student says, “I got some more collaboration skills working with my partner. At first it was hard but we learned to work together and problem-solve.” Another student says, “I enjoyed collaborating with kids in other academy pathways like corporate, to help with my essential question.” Collaboration is one of the four skills considered essential to achieving success in the workforce of the twenty-first century and it was one of the intended outcomes for the high school’s academy design.

Another type of collaboration was between students and the community. The students stated that they enjoyed presenting to others and receiving feedback from the audience at the capstone fair. One student states, “Being able to show other people what I am capable of really was enjoyable.” Another student agrees saying, “I most valued that I was able to show people what I have learned over the past couple of years.” Many of the students liked the presentation component of the project. One says, “My favorite part was the presentation because so many people came up to me and told me that I did a lot of work, and it was nice to have people notice
that.” A student who did his project creating an anti-bullying awareness campaign says, “I liked the feedback from the audience. They were touched by it and interested in it and asked for a tee shirt. That was probably the best part.” It was clear that students enjoyed the capstone fair night because it gave them the chance to showcase their knowledge and skill and to receive instant feedback from the judges, teachers, peers, and community members in attendance. Feedback is an important component of student engagement and learning. Students stated that they liked having the opportunity to demonstrate their knowledge in a variety of ways and to receive feedback on their learning from a variety of people.

Relevance. Relevance was an emergent theme in one-third of the student responses to this question. There were three ways that students reported on relevance: by connecting their learning to a real-world application, by connecting their senior project to a future pursuit, or by connecting their senior project topic to a personal interest. The contents of Table 7 illustrate examples of student responses around senior project and the theme of relevance.

Table 7

Student Statements on Senior Project and Relevance

Real World Application (N=14)

It was fun to see how using stuff I learned actually worked.

It was helpful because it explained what I’ve been doing in school.

I think that it was a good way of showing that we did have those 21st century skills.

I liked that the experience we got of presenting was like business or college. It was good for college or your job.

I liked that I could talk to people in the field. I liked the interviewing. I learned a lot from that.

Future Pursuit (N=15)
I think the capstone project is beneficial for knowing what you want to do for college.

It will be great to show the relevance of my project to my college.

I think it is a good idea because when you get to college you’ll have an idea of what you want to do. I think it helps you prepare for college.

I think it helped me decide what I wanted to do career-wise. It made it a lot easier to know what you want to do because you practiced it.

I think it was beneficial. I learned what I don’t want to do as a career.

*Personal Interest (N=9)*

My most favorite part was that I got to do something I really wanted to do.

For myself, I sort of had an idea of what I wanted to do so it was nice to be able to focus on that.

You get to do something you are passionate about. Your capstone should be satisfactory to you.

That’s the part I liked the most. That you could pick anything you want and they didn’t limit you.

Being able to pick whatever you wanted to do.

Curriculum and learning experiences that link content studied in the classroom to real-world situations and scenarios allow students to synthesize their learning, which leads to deeper knowledge. In addition, when students have the chance to link what they study in the classroom with a personal interest or goal, they tend to be motivated and engage more in their learning. The student responses to this question illustrate that this senior project contains components that support motivation and student engagement.

*What did you like the least about the senior capstone project?*  
The purpose of this question is to further understand the components of this senior project model that may be a detriment to student learning. Sixty-five percent of the students in the focus groups felt that the
capstone project experience was stressful due to a lack of organization around two general areas—
the advisory piece and the grading system. Students stated that the advisory component was
inadequate to meet their needs. Students said they felt they needed more time to meet with their
advisors and they expressed frustration with the overall lack of guidance and direction they felt
they received from their advisors. Samples of student comments regarding the advisory
component are listed in Table 8.

Table 8
Illustrative Student Comments on Advisors

<table>
<thead>
<tr>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>At the beginning, half the advisors didn’t know what they were supposed to do.</td>
</tr>
<tr>
<td>You need to make sure the advisors want to do it- not all were invested and you need more judges. The advisors need to get to know you- mine didn’t know my name the first four months.</td>
</tr>
<tr>
<td>There were not enough meetings with advisors- advisors weren’t helpful enough. I feel like it’s hard because it’s the first year and I can understand why people are confused. I feel like my advisor made it worse.</td>
</tr>
<tr>
<td>I should have been more organized, my advisor wasn’t that involved so I didn’t get involved. It would have been easier if the advisors did a better job. We expected more support.</td>
</tr>
<tr>
<td>We should have gotten more guidance because we didn’t know what this was supposed to look like. It’s hard to do something that no one in the school had done before.</td>
</tr>
<tr>
<td>If there was something I would change it would be that it would be more organized. A lot of kids didn’t have a lot of time with their advisor.</td>
</tr>
</tbody>
</table>

These examples summarizing the frustration students felt around the lack of support and
guidance on the capstone project are most likely symptoms of this first year of the senior project
and this group of students as the first to experience the senior capstone project graduation
requirement. Both students and teachers expressed frustration and identified areas for
improvement in future years.
In addition to comments about the unsatisfactory performance of the advisors, student responses revealed that there were perceived inequities regarding the grading practices for the senior capstone project. The participants state that students who spent a fraction of the time to complete their projects, in some instances, received a higher grade than those who invested more time. In other circumstances, students said that their grade was affected more by perceptions than by merit. Half of the students, or 13, expressed dissatisfaction with the grading process, even if they were content with their final grade. Table 9 illustrates a sample of student comments on the capstone project grading practices.

Table 9

**Student Comments on Grading**

<table>
<thead>
<tr>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>I felt like she graded me differently. I put a lot of work into it. I feel like my grade didn’t really reflect that. I don’t know how she graded me. It was just unfair.</td>
</tr>
<tr>
<td>Some people literally did their project in a day. Some people did it during a day of being in detention. And I had been working on my project since summer of last year. And I ended up with an 80 for no apparent reason.</td>
</tr>
<tr>
<td>They need to prevent the ability to throw it together at the last minute. The deadlines were not enforced. They need to be enforced.</td>
</tr>
<tr>
<td>They could improve on the grading. Like one of my friends really put his back into the project. He put a lot of time, a huge commitment and I did everything last minute and I got an 86.</td>
</tr>
<tr>
<td>It wasn’t really fair- the grade doesn’t really reflect the work. It reflects what we see.</td>
</tr>
</tbody>
</table>

The perceived inequities of the grading process again are most likely indicators of faculty members who were grading their first senior project and using an unfamiliar, untested rubric. Six students admitted that they completed their entire project in one day or less, eight students stated they did the project in a little over a month, and four students began their project during
the summer between the junior and senior year. The range of time spent on the project did not consistently correlate with the grade received in this student population.

**How did the academy model support your senior project and/or plans for the future?**

The purpose of this question is to examine how choice and personal interest may impact student learning. Ten students, or 38%, stated that the academy model supported their plans for the future by giving them the opportunity to network, intern, or affirm their anticipated future pursuits. Five students, or 19%, said that the academy model supported their senior capstone project by offering guidance and direction in choosing a topic and following through on the assignments. Nine students, or 35% stated that the academy model had no impact on their project topic or their future plans. Table 10 illustrates these data representing students’ perceptions of how their curricula related to either their senior project topic or their future plans, or both.
Table 10

Academy Impact

<table>
<thead>
<tr>
<th>Item</th>
<th>Student Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academies Support Plans for Future</td>
<td>38% (N=10)</td>
</tr>
<tr>
<td>Academies Support Senior Project Topic</td>
<td>19% (N=5)</td>
</tr>
<tr>
<td>Academies Have No Impact on Topic or Future</td>
<td>35% (N=9)</td>
</tr>
</tbody>
</table>

Some of the students did not see a connection between their academy and their project primarily because they considered their topic to include themes from other academy pathways, such as humanities and fine arts. These students expressed feeling somewhat constrained by the model. Other students stated that they already knew their plans for the future and felt the academy model had little relevance in their future. Two students stated that their academy supported their personal interest and therefore their project and their future plans. Samples of student comments on how the academy model supported their project and future plans are noted in Table 11.
Table 11

*Student Comments on Academies*

<table>
<thead>
<tr>
<th>Comment</th>
<th>Relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td>I started in the business academy and I didn’t want to do business.</td>
<td>I want to be an engineer so I switched into the math and science academy.</td>
</tr>
<tr>
<td>I am in the math/science academy and I take chemistry and biology.</td>
<td>I am going to major in genetics and so it is helpful to focus on these areas.</td>
</tr>
<tr>
<td>In the end, the academies benefitted me because it reassured what I</td>
<td>The academies gave suggestions of courses for you. I personally think it</td>
</tr>
<tr>
<td>want to do.</td>
<td>is better you take the courses you are interested in and that determines</td>
</tr>
<tr>
<td>You see your focus is in the courses you take and the academy gives</td>
<td>where you end up.</td>
</tr>
<tr>
<td>suggestions of courses for you. I personally think it is better you</td>
<td>I did not like that your capstone had to be constricted to your academy.</td>
</tr>
<tr>
<td>take the courses you are interested in and that determines where you</td>
<td>If you liked the humanities but were in the science academy you couldn’t</td>
</tr>
<tr>
<td>end up.</td>
<td>really link them.</td>
</tr>
<tr>
<td>In a way I think the academies are good for some people. They at least</td>
<td>They at least help them decide what they like. But for others, not so</td>
</tr>
<tr>
<td>help them decide what they like. But for others, not so much. I always</td>
<td>much. I always knew that I liked math and science. I always knew I wanted</td>
</tr>
<tr>
<td>knew I wanted to take mostly math and science so in the end it didn’t</td>
<td>to take mostly math and science so in the end it didn’t matter.</td>
</tr>
</tbody>
</table>

Sixty-nine percent stated that the academy model helped serve as a guide in either completing their capstone project or in helping them choose or affirm their future plans. One student thought she wanted to be a teacher but discovered through completing her senior project on the teaching profession that she no longer wanted to be a teacher. She stated that this was a valuable revelation that would save her time and money in her future.

*What advice would you give to the junior class regarding the senior capstone project?*

The purpose of this question is to understand what the students learned from this experience and what they felt was of value or importance by participating in the senior capstone project. Two central themes emerged from this question. Fifty-eight percent of respondents stated that time management was the most important message to give to the juniors and 42% stated that choosing
a topic of interest was the most important message to give to the junior class. Examples of these
two messages are illustrated in Table 12.

Table 12

*Advice to Juniors*

<table>
<thead>
<tr>
<th>Advice to Juniors</th>
</tr>
</thead>
<tbody>
<tr>
<td>If I were to tell the juniors something, I would tell them to start early and not leave it to the last minute.</td>
</tr>
<tr>
<td>Pick a topic that you like and are interested in because otherwise it will be a drag to research it and to work on it.</td>
</tr>
<tr>
<td>Get an early start. Don’t procrastinate. Give yourself enough time.</td>
</tr>
<tr>
<td>You have to do something you are passionate about because when you do something you are passionate about, you want to work on it. You get lost in it.</td>
</tr>
</tbody>
</table>

The value of learning time management, or at least the importance of it, is a tool that students can use as they transition from the structure of high school to the independence of life after high school be it college or the workforce. In addition to time management, the students also recognized that learning is more enjoyable and meaningful when it is related to a personal interest. This supports student engagement and motivation practices.

*Summary of student focus group responses for Research Question 2.* The results of the student focus group responses to the questions related to student engagement and motivation reveal three common themes. These themes are relevance, authentic assessment, and independent learning. Students stated that they found value in having the opportunity to pursue a topic of relevance to them on either a personal level or as something related to their future pursuits. In addition, the students indicated that having the opportunity to demonstrate their knowledge in authentic and creative ways was affirming, as was the feedback they received from
a variety of stakeholders. And finally, students responded that they developed important skills to support independent learning.

**Teacher survey data.** Six teachers agreed to participate in this research study. All six of the teachers served as advisors to seniors for the capstone project. Four of the six teachers were part of the curriculum re-design team from the early development of the academy model to the creation of the senior capstone project requirement. All academies, with the exception of the global studies academy, were represented in the teacher data set. Two teachers were in the humanities academy, one was from the CTE academy, two teachers came from the math and science academy and one was from the business academy. The latter also served as the senior capstone project program director.

The online teacher survey instrument asked teachers to rank their opinion on ten statements regarding the senior capstone project. Six of the statements on the survey related to student engagement during the senior project experience. Teachers were asked to rank their opinion on a 5-point scale from strongly disagree to strongly agree. Table 13 contains the teacher survey statements related to the second research question on engagement and motivation.
### Table 13

*Teacher Survey Statements on Engagement*

<table>
<thead>
<tr>
<th>Item</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The senior project topics are relevant to students.</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Students appear to be engaged in their senior project work.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>The senior project does not impact my teaching.</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Senioritis is a problem in our school.</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>The senior project is a valuable use of a student’s time in school.</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>The senior project program positively impacts our school climate.</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

Note. N=6
The senior project topics are relevant to students. Four of the six teachers who participated strongly agreed that the topics chosen for the senior projects were relevant to the students. Two of the six teachers had no opinion. The theme of relevance was prevalent in the student responses and the teachers concur on the survey, that the senior project offers relevant learning experiences for students.

Students appear to be engaged in their senior project work. Half of the teachers agreed with this statement, two had no opinion, and one disagreed that students appeared to be engaged in their senior project work. The small sample of teachers who took this survey makes it difficult to determine how accurate these data are. However, three of the teachers indicated that the students appeared to be engaged in their senior project work. Since most advisors had 20 to 30 students, this response demonstrates that between 30 and 90 students, or between 13% and 22% of the senior class, appeared to be engaged in their project.

The senior project does not impact my teaching. Half of the respondents felt that the senior project did impact their teaching; two of the six felt that the senior project did not impact their teaching and one teacher had no opinion. Although the senior project is an independent project and therefore not part of the classroom instruction, two of the six teachers surveyed indicated that their teaching was impacted by the senior project. This might be due to the fact that teachers who were advisors to the project had added responsibilities to their regular teaching assignment.

Senioritis is a problem in our school. Four of the six teachers in the study agreed that senioritis was a problem in their school. Two had no opinion. The senior project in this school has a due date of late March. This leaves two months of school for seniors before they graduate
and therefore plenty of time to disengage in school. However, this is a minimal amount of time for senioritis when compared to the more common January onslaught of symptoms after college applications are sent.

**The senior project is a valuable use of a student’s time in school.** Five of the six teachers who took the survey neither agreed nor disagreed with this statement. One teacher strongly agreed that the senior project is a valuable use of the student’s time in school. Results from this statement might be indicative of the fact that this is the first year of the senior project in this school and that the culture of the school has not had an adequate amount of time to assimilate around the senior project experience.

**The senior project program positively impacts our school climate.** Four of the teachers agreed that the senior project program positively impacted the school climate. One teacher disagreed and one teacher had no opinion. Although the teachers’ responses were somewhat ambivalent about the senior project as a valuable use of student time, the majority of the teachers in this survey stated that they agreed that the senior project made a positive impact on the climate of the school. The capstone project night appears to have played a significant role in positively affecting the school climate as perceived by the teachers.

**Summary of teacher survey data.** In general, the teachers surveyed stated that the senior project topics were relevant to students and that students appeared to be engaged in their senior project work. The teachers surveyed also stated that the senior project appeared to have a positive impact on the climate of the school. The teachers who responded to this survey indicated that the senior project did have an impact on their teaching and they had no opinion on whether the senior project was a valuable use of students’ time while in school.
**Teacher focus group data.** The same six teachers who responded to the survey also participated in the focus groups. All teachers were asked the same questions during the focus groups. Table 14 contains the teacher focus group questions related to the second research question and examines the relationship between the senior project experience and student engagement.

Table 14

*Teacher Focus Group Questions*

<table>
<thead>
<tr>
<th>Teacher Focus Group Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How did the senior project program impact your teaching?</td>
</tr>
<tr>
<td>2. What were the challenges to your teaching because of the senior project program?</td>
</tr>
<tr>
<td>3. What would you like to see change about the senior project program and why?</td>
</tr>
</tbody>
</table>

*How did the senior project program impact your teaching?* All of the teachers stated that the senior project program positively impacted their teaching and student learning. Teachers stated that the senior project allowed more creativity and independence and empowered students to express their skills in a variety of ways. Table 15 illustrates examples of teacher statements on the positive impact the senior project had on their teaching.
The three themes that emerge from these teacher comments can be identified as rigor, relevance, and relationship. The teachers mention that the senior project challenged their students to reflect on their learning and to find ways to inform others about their learning. The teachers also state that the relevant and real-world application component of the senior project was a strength of the program. And finally, the teachers recognized that the collaborative aspect of the senior project proved to be a valuable learning experience for the students and afforded them the opportunity to demonstrate their knowledge and skills in creative and authentic ways.

*What were the challenges to your teaching because of the senior project program?* The teachers agreed that one of the challenges they faced was in trying to help students learn how to
manage their time more effectively. Early in the fall, the seniors refused to accept the fact that the senior capstone project was a graduation requirement and rebelled by refusing to do it on the assumption that if they all refused to do the senior project, then the school administration could not withhold graduating the entire class. Once the students realized that the administration was not going to give in, time had been lost and they found themselves falling behind on deadlines. The teachers felt that the additional responsibilities of serving as a senior project advisor posed challenges to their teaching duties by increasing their workload. They had to provide support to their advisees but did not have adequate time or opportunity to do this early on in the process. Table 16 illustrates examples of teacher challenges as a result of the senior project.

Table 16

*Teacher Statements on Challenges*

<table>
<thead>
<tr>
<th>Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>For an independent project that wasn’t supposed to interrupt the classroom it did.</td>
</tr>
<tr>
<td>It was really tough to build a relationship with them and keep the expectation up because there just wasn’t a lot of time for it.</td>
</tr>
<tr>
<td>They had a really difficult time envisioning what it was they were supposed to do and it was hard without any good exemplars to show them.</td>
</tr>
<tr>
<td>They were paralyzed about how to go about the scope of the project. How to create it. After the rebellion as the year progressed, the kids were finally getting into it and having an understanding of the whole process.</td>
</tr>
<tr>
<td>These kids are good at procrastination. It is a skill. It is something they are really good at but when they are really motivated to do something they can get it done and the whole point is to try to get them to do that earlier so it becomes a real quality product.</td>
</tr>
</tbody>
</table>

These teacher comments demonstrate the struggles this high school experienced in large part because this was the first year of the senior project and therefore there was no model to follow. The teachers were experiencing similar difficulties that the students mentioned such as
time constraints, lack of support, and limited guidance. The teachers in the focus groups stated that they felt overwhelmed by the amount of extra work it took to get this class through the school’s first senior project.

Another challenge the teachers said they faced was resistance from some of the parents. Several parents were vocal about what they considered to be an unfair burden for their children during their senior year of high school. This created discord within the school community and created tension for the teachers. Teacher statements in Table 17 illustrate the challenges teachers faced from parents who were not willing to support the senior capstone project as a required learning activity.

Table 17

Teacher Statements on Parent Resistance

<table>
<thead>
<tr>
<th>Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>When you first look at the research what we read and what it said about what you would be encountering. The students are going to test to see if it is real. I didn’t expect the parents to test.</td>
</tr>
<tr>
<td>The real catastrophe I had to avert personally were when the parent and the student had talked themselves into this thing not being real or this thing being terrible.</td>
</tr>
<tr>
<td>It was extremely stressful from mid-February to the end of March. We had a lot of parent issues, teacher issues, accepting that this is the way we are moving forward.</td>
</tr>
<tr>
<td>A father called me up and literally, I let him scream for fifteen minutes and I told him that my job was to get his daughter to graduate and all of a sudden he was okay. You had to let them vent.</td>
</tr>
<tr>
<td>The students didn’t know exactly what was expected of them and you had parents calling saying this is too much work.</td>
</tr>
</tbody>
</table>

The teachers in the focus groups observed that the greatest challenges they experienced as a result of the senior project were the lack of tools the students had in independent learning and the pushback from the parents on the senior project as a graduation requirement. This first
year of implementation of a senior project in this high school could be a reason why the students and parents were unprepared and did not know how to navigate their way through this process.

The teachers refused to give up on their students and they refused to give in to the pressure from the parents. The teachers in the focus groups stated that they understood their responsibility was to help their students be successful in the senior capstone project.

*What would you like to see change about the senior project program and why?*  The teachers recognize that there are some organizational issues that need to happen in order to improve the capstone project program next year. The school has already scheduled time for students to meet with their advisors on a monthly basis. And they recognize that in addition to the special education liaison position, which was created halfway through the first year, there is a need for a liaison to serve a growing population of English language learners. The teacher comments in Table 18 reflect changes that they feel need to occur on the level of curriculum and instruction.

Table 18

*Teacher Statements for Modifications to Model*

<table>
<thead>
<tr>
<th>Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>We need to re-triangulate in order to get them through the core academies and through the career academies in a more efficient way. We need to guide these students toward that pinnacle as a freshman. You need to know that by the time you are a senior, you will be presenting this project.</td>
</tr>
<tr>
<td>The electives don’t support the academy model yet so you don’t have that day-to-day reinforcement. There needs to be discussion about the capstone inside the elective classes. The electives currently don’t have that career emphasis nor do they have that capstone emphasis.</td>
</tr>
<tr>
<td>We do need to build a foundation for the senior capstone in the curriculum.</td>
</tr>
</tbody>
</table>
The teachers in the focus groups recognized that the resource of time was valuable in this process and that more student supports were needed, not to diminish the independent nature of the project, but to be made available to those students who needed more guidance in learning how to become independent learners. The teachers also recognized that the academy design needed to interface with the senior project in a more deliberate way to better guide students through the process.

**Summary of teacher focus group responses.** The theme that emerges from the teacher responses related to issues that impact student engagement focus on independent learning, both its challenges and value. The teachers state that the opportunity for growth and reflection and the metacognitive learning were identified positive outcomes of the senior project. However, the teachers also add that it was the independent nature of the senior project that caused the most angst on the part of not only the students but their parents as well. It is believed that in time, this problem will fade as the school culture adopts the senior project as part of the regular curriculum.

**Administrator interview data.** The high school principal and associate principal were interviewed together. The administrators answered three questions related to the second research question on student engagement and motivation during their senior project. The administrator interview questions are listed in Table 19.

Table 19
*Administrator Interview Questions*

<table>
<thead>
<tr>
<th>Administrator Interview Questions on Student Engagement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What are the rewards of the senior project?</td>
</tr>
<tr>
<td>2. What are the challenges?</td>
</tr>
</tbody>
</table>
3. What would you like to see change in the current senior project program?

**What are the rewards of the senior project?** The principal and the associate principal listed three main rewards of the senior project. They state the strengths of the senior project are: that it is an independent learning experience, that it was related to students’ interests, and that it challenged the students to do their best work. Table 20 includes statements made by the principal and the associate principal on these themes.

Table 20

**Administrator Comments on Rewards of Senior Project**

The key philosophy is to make the senior capstone project an independent study— not enabling—but that is the part that makes it scary for the community.

It was students stepping up. There was a range of quality that’s our issue to get them to produce what they can but there were some exceptional projects and for everyone involved it was an exceptional experience, regardless of the quality of their project.

Every student was positive, they were challenged above and beyond what the capstone is supposed to be. It was more than what we bargained for.

A school committee approved it as a graduation requirement. The point is it being independent. It being something of interest.

The administrators, like the teachers, recognized that the benefits of the senior project were also the challenges. They stated their commitment, and the commitment of the school and school community, that the senior project was a worthy pursuit and that it was intended to stretch students while allowing them to work on a topic of relevance. The administrators also recognized that this was their first year and that they were uncertain what to expect. In general, they indicate that they were pleased with the results of the first year of the senior project.
What are the challenges? For the administrators, parent resistance was the biggest challenge they faced during the senior project. They state that the parents either didn’t understand the concept of a senior capstone project or they feared their student would be unable to be successful during their senior year because of the senior project. Table 21 contains administrator comments on the challenges they faced.

Table 21

Administrator Comments on Challenges

<table>
<thead>
<tr>
<th>Most of the push back came from our overachieving students’ parents. The ones that are aggressive academically, that are involved in a lot of sports, that do a lot within the community. Those parents were concerned that in the fall of the senior year where their primary focus needs to be their academic studies and start the college application process that the capstone on top of that would interfere and lessen the quality of the work into the college process.</th>
</tr>
</thead>
<tbody>
<tr>
<td>They felt that the capstone shouldn’t in fact be part of a cumulative. Instead that it should take part at some other time in their career. They felt it’s something they should do in their junior year and then use that project to end their college application process.</td>
</tr>
<tr>
<td>The understanding of a capstone as that capping off of a four-year experience being a culmination of all the skills. They didn’t quite understand that the reason they do it in the final year is for that purpose and by putting it in the eleventh grade defeats the- it would no longer be a capstone. It would be just a project.</td>
</tr>
</tbody>
</table>

These comments reflect the sense of purpose and resolve necessary on the part of the school leaders to stand up to the parent resistance and to hold on to the concept of a capstone senior project as a culmination of the knowledge and skills acquired during four years in the high school. The associate principal indicated that although the parent resistance was fierce, in the end, it amounted to a small percentage of the senior class parents and that once the students realized they had no option but to complete the project, and once the parents realized that the
staff was going to support the students, the parent group of resistors retreated but did not change their minds.

**What would you like to see change in the current senior project program?** The administrators identified two things they would like to see change in the current senior project program. They recognize that there needs to be a way to offer support for those students who need more than the monthly advisor meeting, and they acknowledged that the school needed to improve how the research process is taught. The principal states:

> While it is independent we need to create a way for students to access services outside of the school day. We have the idea to create a resource room. It would be a teacher duty and it would be available to kids as a place for information where students can go. She suggested that this was something that will be in place for next year’s senior class.

In addition, the administrators found that the school was not doing an adequate job of teaching students effective research techniques. This was evident by the lack of sources students used, in the type of resources they did use, and in the inadequate level of understanding the students demonstrated in using their research to support their projects. The principal states, “Research was also a particular concern. The kids still have a very shallow understanding of research.” She mentioned that the teachers on the senior project design team had proposed that an annotated bibliography be added to the list of requirements for next year’s senior project.

**Summary of administrator interviews.** The administrators, like the teachers indicated that the results from this first year of the senior project were better than what they had anticipated. They were pleased that the senior project challenged the students to be independent learners and they recognized that with a few minor changes, the senior project was a valuable learning experience. The administrators stated that the challenges posed by parental resistance
was mostly a result of first year implementation issues and that with subsequent senior classes, the school culture would accept the senior project as a requirement for graduation and not an unrealistic expectation.

**Research Question #3: How do students, teachers, and school administrators perceive students’ engagement in senior projects contributing to their self-efficacy in pursuit of meaningful vocations or further education?**

The third research question investigates how students, teachers, and administrators perceive participation in a senior project as contributing to feelings of confidence about future success. The question considers whether a senior project program impacts students’ self-efficacy in their future pursuits such as college or career. Because of the independent learning component and the real-world application feature of the senior project, it is possible that these learning opportunities may contribute to students’ feelings of instrumentality in the world. This research question is intended to investigate whether students felt more empowered toward their ability to be successful in the future as a result of their having participated in the senior capstone project.

Student and teacher data were collected via survey and focus groups and the two school administrators were interviewed. As presented in relation to Research Question 2 above, the results from data gathered in relationship to Research Question 3 begins with student survey and focus group responses, followed by teacher survey and focus group data, and ending with school administrator interview data in response to questions relating to student efficacy.

**Student survey data.** This section of the research findings presents student responses to those survey statements related to self-efficacy. Thirty students responded to the survey. The survey contained ten statements and students were asked to rank their opinion on each statement on a 5-point scale from strongly disagree to strongly agree. Four of the ten statements on the
survey pertain to issues related to senior project and perceptions of self-efficacy. The survey was administered online before the students met in focus groups. The survey statements on efficacy are illustrated in Table 22.

Table 22

_Student Survey Statements on Efficacy_

<table>
<thead>
<tr>
<th>Item</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>My senior project will help me achieve my goals after high school.</td>
<td>10% (3)</td>
<td>23.3% (7)</td>
<td>43.3% (13)</td>
<td>16.7% (5)</td>
<td>6.7% (2)</td>
</tr>
<tr>
<td>Participation in the senior project has helped to prepare me for my future.</td>
<td>10% (3)</td>
<td>16.7% (5)</td>
<td>26.7% (8)</td>
<td>40% (12)</td>
<td>6.7% (2)</td>
</tr>
<tr>
<td>I feel as though I am able to be successful in my future pursuits.</td>
<td>0% (0)</td>
<td>0% (0)</td>
<td>16.7% (5)</td>
<td>46.7% (14)</td>
<td>36.7% (11)</td>
</tr>
<tr>
<td>The senior project is a valuable experience.</td>
<td>3.3% (1)</td>
<td>23.3% (7)</td>
<td>26.7% (8)</td>
<td>33.3% (10)</td>
<td>13.3% (4)</td>
</tr>
</tbody>
</table>

Note. N=30

_My senior project will help me achieve my goals after high school._ Approximately one third of the students, or ten students, disagreed with this statement. Seven students, or around one-fifth of respondents, agreed that their senior project will assist them in their future pursuits while 43% of the students had no opinion on this statement. It appears that most of the students surveyed do not consider the actual senior project, the research and presentation, as an agent in achieving future goals. However, more students considered the process of the senior project as more instrumental in impacting their future. These data are apparent in the student responses to the next statement.
Participation in the senior project has helped to prepare me for my future. Forty-six percent of respondents indicated that participation in the senior project has prepared them for their future. Less than one-third of the students, or eight students, disagreed that their participation in the senior project has supported their future plans and 26% had no opinion on the matter. These results demonstrate that though the product of the senior project had minimal significance to the futures of the students in this survey, the process of participation in the senior project was perceived by the students to be effective toward being successful in their future pursuits.

I feel as though I am able to be successful in my future pursuits. More than 80% of the students, or 25 of the 30 students who responded to this statement, agreed that they are able to be successful in their future pursuits. None of the students in this survey disagreed with this statement. Five students had no opinion. Although the majority of students appear to feel confident about their ability to be successful in their future pursuits, this statement does not imply that this confidence is a direct result of the senior project. The high percentage of students feeling confident about their futures could be the result of adolescent bravado. However, there is the possibility that participation in the senior project allows students the opportunity to connect with the real-world and receive feedback from adults other than their teachers. The student focus group responses to feelings of empowerment and achievement during the capstone fair nights are indicators that the experience of the senior project may contribute to feelings of self-efficacy among some students.

The senior project is a valuable learning experience. Nearly half of the students surveyed, 14 of the 30 respondents, agreed that the senior project is a valuable learning experience. Eight students had no opinion on this statement and eight students disagreed, one
student strongly disagreed that the senior project was a valuable learning experience. Given that this was the first year in this high school for the senior project and considering that the students, with the support of their parents, tried to prevent the senior project from occurring, the student responses to this statement favor the senior project as a valuable learning tool.

**Summary of student survey data.** The results of the student survey responses to statements related to issues of self-efficacy indicate that students considered the senior project to be a valuable learning tool that would help them in their future pursuits. The data from the student responses to questions related to self-efficacy during the focus groups indicate that the senior project experience had an impact on students’ perceptions of their ability to be successful in their future pursuits.

**Student focus group data.** The 26 students who participated in the focus groups responded to several questions regarding feelings of efficacy as a result of their completing a senior project. Like the focus group protocols related to students’ perceptions of engagement, and motivation, all students were asked the same set of questions regarding their participation in a senior project as contributing to their feelings of self-efficacy in their future pursuits. Table 23 contains a list of the student focus group questions on the topic of efficacy.

Table 23

*Student Focus Group Questions on Efficacy*

<table>
<thead>
<tr>
<th>Student Focus Group Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Was the senior project experience a valuable one?</td>
</tr>
<tr>
<td>2. Were you proud of your project?</td>
</tr>
<tr>
<td>3. Did the senior project experience change at all the way you feel about what you are able</td>
</tr>
</tbody>
</table>
4. Do you feel that you learned something that will help you in your future?

**Was the senior project experience a valuable one?** Three of the students who participated in the focus groups said that the senior project experience was a waste of their time. One of these students plans to attend the military and felt the senior project experience offered nothing of value to him because he could not relate his future plans to any of the available topics of study offered in the school’s career academies. Two students felt that the senior project was a waste of their time because it offered no relevance to their plans to study advanced mathematics in college. One student stated that although the senior project was a valuable experience for her, she did not believe it was appropriate for all students.

Half of the students in the focus groups said that the senior project experience was a valuable one. The primary themes to emerge relative to how students considered the value of the senior project experience are expressed in student statements about gaining skills in independent learning, feelings of empowerment and validation, and the acquisition of the twenty-first century skills of communication, collaboration, creativity, and problem solving. Examples of student statements on the value of the senior project experience are illustrated in Table 24.

Table 24

*Student Statements on the Value of Senior Project*

<table>
<thead>
<tr>
<th>Independent skills (N=4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I felt I learned a lot about being independent. I think it’s an advantage. It’s worth doing. To say you accomplished something on your own.</td>
</tr>
<tr>
<td>I definitely learned interesting facts out of it but the skills and the experience of the project itself was more valuable. I thought it was beneficial.</td>
</tr>
</tbody>
</table>
Empowerment and validation (N=5)

I feel like that it was more important than academic. It’s like learning something about yourself and who you really are and what you believe. It was based on what you learned about yourself, not about math.

It gave you a chance to hear what others think of what you know. Almost a way of validating what you have done.

Capstone proves that your ideas matter and what you do matters. In high school you sit in class and the teacher tells you everything. With the capstone you have to go out there and research and then make your statement and wait for people to agree or disagree with it. Then you see that people are really interested in what you believe in.

Twenty-first century skills (N=4)

Before I started doing the project I thought why am I doing this ridiculous thing. But afterwards I feel like it was a beneficial experience. I did get a lot out of it. I think it was a good way of showing that we did have those 21st century skills.

The statements above capture the themes of independent learning, validation, and relevant skills that the students felt they acquired as a result of participation in the senior project.

What is present in some of these statements, and common among the student responses in general, is the unexpected learning that students recognize they acquired despite the perceived burden of having to do the senior project. A number of students stated that though they may have considered the project as one more requirement they had to complete, they acquired unexpected skills and knowledge about themselves and about their abilities beyond their topic of choice. This helped to give them a greater sense of self-efficacy toward their future success.

*Were you proud of your project?* Twenty of the 26 of the students in the focus groups stated that they were proud of their project either because they passed or because of the end product of their project. Table 25 contains examples of student comments relating to feelings of pride and the senior project.

Table 25
At the beginning I thought I was never going to do this but after it was like okay I can do this. I was proud I passed. I was proud I finished.

Making something from scratch that has my name on it was satisfying. I can be proud of this.

Being able to show others what I am capable of and what I can actually do and what I’ve learned over the past four years was a very satisfying feeling.

I like that you walk away with the fact that you actually accomplished something. Something you had to do as an individual.

I most valued that I was able to show people what I have learned over the past couple of years.

What I benefitted was showing teachers and the judges that I do have the skills to work on my own and to present my ideas.

It made me feel like I know what I was talking about and somebody else knew what I was talking about. It’s like getting a good grade on a test.

You had people coming up to you saying wow that product is really good. A lady who does funding for the town gave me her card and told me she would like to do the same marketing campaign. She thought it was a really good idea. It made me feel proud.

I just felt like I really knew the information I was presenting. That felt good too to teach somebody else about it.

These student statements reflect a common theme of self-efficacy. Students were proud that they successfully completed the project, and they state that they felt confident in the knowledge that they gained. The students share that they enjoyed the opportunity to demonstrate their knowledge in a public forum. The experience of the capstone fair night, when students became the experts and taught others what they had learned, proved to be an effective and empowering learning experience.
Did the senior project experience change at all the way you feel about what you are able to do after high school?

Sixty-one percent of the students stated that the senior project experience did change the way they felt about what they were able to do after high school. Student responses to this question indicate that as a result of participating in the senior project, students feel equipped with the skills needed to be successful in college. Table 26 illustrates these student responses.

Table 26

*Student Comments on College Readiness*

<table>
<thead>
<tr>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>I learned to think on my feet and manage my time.</td>
</tr>
<tr>
<td>You walk away with that sense that you have the capability to get something done on your own if you need to get it done and not only something that benefits you but is important. It is a skill that if you don’t already have it you develop it along the way.</td>
</tr>
<tr>
<td>I think it prepares you for college. It gave me a foundation for college.</td>
</tr>
<tr>
<td>When it was all done I felt more independent and ready to go off to college and know I can figure everything out on my own.</td>
</tr>
</tbody>
</table>

These samples of student responses to this question show that, as a result of their participation in the senior capstone project, the students in the focus groups experienced elevated perceptions of self-efficacy toward their future pursuits especially when that future pursuit involved college. Once again the independent learning component of the senior project was perceived by students to be a valuable learning tool for success in the future.

*Do you feel that you learned something that will help you in your future?* Ninety percent of the students in the focus groups responded that through participating in the senior project, they learned something that will help them in their future pursuits. Many students stated
that their senior project topic helped them decide on the course of study they planned to pursue in college. One student learned what she did not want to do as a result of her senior project topic and this proved to be valuable as well.

The students who responded to this question in the affirmative, mentioned that they feel more confident in their ability to be an independent learner as a result of having participated in the senior project experience. Table 27 illustrates student comments on this theme.

Table 27

*Student Comments on Independent Learning*

<table>
<thead>
<tr>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taking the initiative. It’s another school project but it was more involved than any other project because you had to do so much more on your own.</td>
</tr>
<tr>
<td>I kind of liked the idea where you have a big project and use all of your different resources and that kind of stuff. I liked the independence I learned.</td>
</tr>
<tr>
<td>I liked that it was independent and I liked the presentation part because telling people what you think and what you learned was really interesting.</td>
</tr>
<tr>
<td>Now I know what I want to do in college. I’ve got a leg up. I’ve done it before so I can do it again.</td>
</tr>
</tbody>
</table>

These student statements represent the recurring theme of independent learning and the valuable skills students perceive to have learned from this independent learning that they will use in their future pursuits. These data affirm the connection students perceived between participation in the senior project and their ability for success.

*Summary of student focus group data.* Three major themes emerged from the student responses to the focus group questions on perceptions of self-efficacy. These themes are independence, mastery of topic knowledge and skills, and twenty-first century skills. Most of the students said that the senior project required them to learn how to work independently toward
accomplishing a goal and that this independent learning component helped the students to feel confident about their ability to be successful in their futures pursuits. The second theme relates to the students’ feelings of having gained a level of mastery in a topic of personal interest as a result of completing the senior project. The students state they felt proud of showing others what they knew and what they were capable of doing. And finally, the theme of twenty-first century skills attainment is a recurring one from the students who responded to these focus group questions. The skills of communication, collaboration, creativity, and critical thinking were skills that students felt they had mastered as a result of completing the senior project and they believed that these skills would be of use to them in college.

**Teacher survey data.** Six teachers participated in an online survey. The teachers were asked to rate ten statements related to the senior project. Four of the statements on the survey related to teacher’s perceptions of student efficacy as a result of participation in the senior project. Teachers were asked to rate their opinion of each statement using a 5-point rating scale from strongly disagrees to strongly agree. The four statements from the online teacher survey that are related to issues of student efficacy are presented in Table 28.
### Table 28

*Teacher Survey Statements Related to Student Efficacy*

<table>
<thead>
<tr>
<th>Item</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The senior project is a valuable learning experience.</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>The senior project is appropriate for all students in the senior class.</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>The senior project increases student-learning opportunities.</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>The senior project is useful in helping students prepare for their futures.</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>4</td>
</tr>
</tbody>
</table>

*The senior project is a valuable learning experience.* Five of the six teachers surveyed agree that the senior project is a valuable learning experience. One teacher had no opinion on the matter.

*The senior project is appropriate for all students in the senior class.* Half of the teachers strongly agreed that the senior project is appropriate for all of the students in the senior class and two teachers indicated that they had no opinion on this statement.

*The senior project increases student-learning opportunities.* Four of the six teachers agreed or strongly agreed that student-learning opportunities increased because of their participation in the senior project. Two of the teachers had no opinion on this statement.
The senior project is useful in helping students prepare for their futures. Four of the teachers strongly agreed that the senior project helps students prepare for their futures. Two teachers had no opinion about this statement.

Summary of teacher survey data. Of the six teachers who completed the online survey, most of them agreed that the senior project was a valuable learning experience, appropriate for all students, and a useful tool in helping students to prepare for their futures. None of the teachers disagreed with any of the statements on senior project participation as it relates to issues that support student efficacy. The theme of senior project as adding value to student learning is further expressed in the teacher responses to questions in the teacher focus groups that relate to student efficacy.

Teacher focus group data. All teachers were asked the same questions in the focus groups and interviews. The questions related to perceptions of student self-efficacy were, “Do you think senior project is a valuable learning tool?” and “Why?” During the focus groups and interviews, the teachers stated that on the nights of the capstone fair the student performances exceeded the expectations of the teachers. The teachers describe the capstone fair nights as, “exciting,” “rewarding,” and “happy”. Paul states, “The capstone fair was one of the best events that I have attended in my fourteen years here. It was phenomenal.”

Two themes emerged from teacher responses to the question of senior project as a valuable learning tool. These themes related to school climate and student performance. The teachers observed that on the nights of the capstone fair, there was “energy” in the school community that not only fueled the students in the senior class, but also the teachers and other students in the school. The teachers stated that the positive outcomes of the senior projects serve to set a standard of excellence and efficacy for students in the other grades. As Paul said:
Juniors came to the presentations and got excited. Maybe the freshmen will go to that capstone night and think, oh my gosh I can never do this. But maybe they start to see the connections in their classes.

A second theme to emerge from this question concerned student performance. All of the teachers stated that they were impressed with the level of student performance on the capstone nights. Teachers commented on how well students presented their information, how proficient they were and how they had a sense of ownership in their work. Teacher statements are illustrated in Table 29.

Table 29

*Teacher Comments on Student Performance*

<table>
<thead>
<tr>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>They had a lot of ownership by the end. It was the happiest I’ve seen that big a group of kids in so long. They were so happy to have it done and to have a really good piece of work to show off.</td>
</tr>
<tr>
<td>We had to get through the capstone but the way the students handled themselves it was very refreshing, very exciting.</td>
</tr>
<tr>
<td>To do a capstone project requires you to bring a lot of information together from classes and really showing that you are proficient in these skills. The student exhibition of this really blew me away.</td>
</tr>
<tr>
<td>To walk down the hall the next day and say to a student you were awesome I saw your presentation- every student should have that experience and every faculty member.</td>
</tr>
</tbody>
</table>

In addition to the teacher response on the strong presentational skills and high energy of the capstone fair nights, another theme relating to student performance emerged. Four of the six teachers stated that the level of performance from their students on the capstone fair nights exceeded the performance of the same students in class. In other words, teachers saw a higher
level of student learning as a product of the capstone than they saw from the same students in their classes. Teacher comments on comparative student performance are illustrated in Table 30.

Table 30

*Teacher Comments on Comparative Student Performance*

| Comment                                                                 |_teacher focus group data. Two themes emerged during the teacher focus groups on issues related to student efficacy. These themes were a positive school climate and elevated student performances. The teachers stated that the student performances on the capstone fair nights positively impacted the school climate by offering public demonstrations of student learning. In addition, the teacher responses to questions relating to issues of student efficacy indicated that the senior project experience contributed to a higher level of student learning. |
performance of knowledge and skill. All of the teachers in the focus groups stated that the level of student performance exceeded their expectations and that in some cases, students performed better in their senior project than they did in the classroom.

**Administrator interview data.** The principal and associate principal were asked whether they thought the senior capstone project is appropriate for all students. The principal’s response to this question was:

I think all students are capable as long as their circumstances and their individual needs are being met. We had to make those individual accommodations. For example a student with speech issues you know what? This young man is going to have to communicate for the rest of his life. We can modify the expectation but we would be doing him a disservice by not expecting him to have his piece of this.

Both the teachers in the focus groups and the administrators interviewed displayed a belief that the students were capable of success. The associate principal says, “What helped the success, we spent most of our time insisting that people meet the expectations as opposed to anticipating the reasons why they couldn’t.” The administrators’ attitude toward student efficacy most likely contributes to the high percentage of student success in the senior project during this first year of implementation. Despite the early challenges they faced, the teachers and administrators agree that the displays of student learning on the nights of the capstone fair demonstrate the value of the senior project as a learning experience that increases students’ skills and their opportunities to be successful in their future pursuits.

**Summary of Findings**

The purpose of this study is to examine curricular designs that engage students in their learning during the second half of the senior year of high school. This study considers the
impact of a senior project on student perceptions of engagement and self-efficacy as a result of participating in a senior project. The high school in this study recently completed its first year of implementation of a senior project.

An examination of the impact that a senior project has on student engagement and efficacy revealed several common themes expressed in the data collected from the students, teachers, and administrators. The students stated that the senior project was a relevant learning experience that taught them not only how to be independent learners but also the value of time management. Students expressed feelings of pride in their accomplishments during the senior project and they felt that the experience effectively prepared them for college level work.

The teachers and administrators stated that the senior project was a valuable learning tool that showcased students’ presentational skills and that allowed the school community to share in an evening of academic excellence through student demonstrations of knowledge and skills. All of the participants in the study expressed that there were many challenges during this first year of implementation and they all stated that they felt stressed and overwhelmed. Despite this, the students, teachers, and administrators generally agreed that the senior project is a valuable learning experience that helps students feel more confident about their opportunities to be successful in their future pursuits.

Chapter V: Discussion of the Research Findings

Revisiting the Problem of Practice

Senioritis is a common occurrence in American high schools. It can rob students of valuable time on learning and it may be a contributing factor to the growing population of college freshmen who arrive on campus in need of remedial services (Kirst & Venezia, 2004; www.highereducation.org). One of the symptoms of senioritis is student disengagement, often a
product of low motivation and a loss of interest in school (Beane, 1997; Brown, 2006; Dreis & Rehage, 2008; Littky, 2004; Wraga, 2009). Research indicates that student engagement plays a significant role in learning and that the more engaged students are in their studies, the more successful they will be in school (Eccles et al., 1993; Greene et al., 2004; Jensen, 2005; Silver & Perini, 2011). When students disengage from their studies and lose interest in learning, they tend to experience decreased feelings of self-efficacy toward their future pursuits (Asch, 2010; Csikszentmihalyi, 1990; Schneider & Stevenson, 1999). This not only jeopardizes student success but it can also have a negative impact on school climate and student behavior (Sizer, 2002).

To address the challenges of the senior year, a number of high schools have developed senior project programs, which are curriculum designs that include independent and experiential learning and that require students to go beyond the classroom and connect their studies to a real world application. The purpose of this study was to examine the impact of a senior project design on student perceptions of engagement during a senior project. If a senior project curriculum improves student engagement during the second half of the senior year of high school, then high schools may benefit by not only adopting senior projects into their curricula but also by taking elements of a senior project design and applying those elements to other classroom learning experiences. These elements might include relevant real-world application of knowledge and alternative demonstrations of learning. In this way, student engagement and student learning might improve for students during their entire high school career.

**Research Questions**

The goal of this study is to understand the relationship between senior project and student engagement and to examine whether participation in a senior project helps students to feel more
confident about their ability to be successful in their lives after high school. Therefore the three research questions in this study are:

1. Why and how did administrators and teachers in one high school decide to pursue a senior project?
2. How do students, teachers, and school administrators perceive students’ pursuit of senior project as impacting seniors’ engagement and motivation in school during their senior year?
3. How do students, teachers, and school administrators perceive students’ engagement in senior projects contributing to their self-efficacy in pursuit of meaningful vocations or further education?

Discussion of Findings

The findings in this study suggest that students considered the senior project to be a relevant learning experience. The data also suggest that the senior project experience increased the students’ feelings of confidence about their future endeavors because they perceived to have gained independent learning and collaboration skills, and they saw these skills as being beneficial to their success in college. The results support the theories of engagement and efficacy by demonstrating a link between meaningful learning and feelings of self-efficacy. Therefore, the elements of a senior project can inform curriculum and instruction designs for students in all grades in order to improve student engagement, performance, and self-efficacy. This section is organized in three parts to discuss the major implications of the findings in relation to each of the research questions.

The senior project decision. The decision to have a senior project is not a new concept in high schools, however it is becoming a popular curriculum design that may increase student
engagement in the second half of the senior year of high school, based on literature that calls for changes to the high school senior year in order to better prepare students for success in the twenty-first century (Asch, 2010; Brown, 2006; Littky, 2004; National Commission on the High School Senior Year, 2001; Freidman, 2004; Trilling & Fadel, 2009). The first research question examines how one school arrived at the decision to adopt a senior project.

Although schools may decide to implement a senior project to avoid senioritis and keep students engaged, the school in this study arrived at their senior project decision via an indirect route. The decision to create a senior project in this high school evolved out of the school’s curricular re-design using career academies. The fact that the high school curriculum was designed around a career academy model is significant to the student experience in this particular senior project because each student had already established a pathway to his or her future as early as the start of the junior year. This means that for more than a year, students in this school were making connections between their academics and a real-world application.

Unlike some senior project models that are linked to internships or that are designed as yearlong stand-alone courses, the senior project in this high school was deliberately connected to a particular course of study that corresponded to a career pathway (Littky, 2004; Sizer, 2002). This could account for the fact that 22 of the 26 students in the focus groups stated that the topic of their senior project was related to their future goals. This would impact the student perceptions of self-efficacy toward their future pursuits because the students in this study have a clearer vision of the track they will follow after high school and the senior project offers them firsthand experience in their chosen fields.

**Senior project and student engagement.** The findings in this study indicate that this senior project model has several elements consistent with those considered in the research to
enhance student engagement and motivation. These elements include giving students a choice in deciding their topic of study, making learning relevant and connected to the real world, and allowing for students to be creative in how they can demonstrate their acquisition of knowledge and skills. Research suggests that high school students prefer learning opportunities that offer a degree of choice over the content and process of learning, the opportunity to connect learning to a topic of personal interest and relevance, and the chance to be creative in the ways in which knowledge and skills are demonstrated (Blumenfeld et al., 2006; Christenson et al., 2008; Greene et al., 2004; Jensen, 2005; Newman, 1992; Sousa, 2006).

In this study, the students state that they enjoyed the opportunity to choose a topic of interest and to have the chance to express their learning in creative ways. Eighty-three percent of the students indicated that their project topic was related to either a personal interest or their goals for the future. They also expressed satisfaction in having the opportunity to work on a topic of personal interest. In fact, most of the students in the focus groups stated that the topic they chose for their senior project was meaningful to them. However, the results of the study were inconclusive in determining whether the students felt more engaged in school as a result of the senior project.

The findings suggest that the level of student engagement may be due more to the fact that the students were busy trying to complete the senior project because it was a graduation requirement than to the intrinsic motivation attributed to student engagement on learning. As this was the first class to complete the school’s senior project, the students expressed a significant amount of discontent over being, what they referred to as, “guinea pigs.” The students felt it was “unfair” to be the first class with this added requirement and they stated that the school should have waived the graduation requirement for their class and instead piloted the idea during the
first year. One student explains, “Don’t make it a graduation requirement if you are trying it out for the first time. It was so stressful.” This recurring sentiment is significant to the problem of practice because it is difficult to determine the extent to which the students were engaged in the process because they had to get it done as opposed to experiencing that level of engagement that Csikzentmihalyi (1990) refers to as flow, where the task becomes so engaging that one gets caught up and loses all sense of time and place.

If the purpose of this study is to investigate the impact of senior project on senioritis and to determine whether a senior project might delay the onset of senioritis, then the findings from this study demonstrate that the students in this school did not begin to exhibit the symptoms of senior slump until early April, when the senior capstone project had been completed. As one student puts it, “Senioritis kicked in right after capstone.” And so it may be that high schools with a senior project might enjoy a longer period of student engagement because of the senior project but it is difficult to determine the degree to which this engagement is due to a commitment to learning or to compliance for graduation.

**Student perceptions of self-efficacy.** The final research question investigated the impact of participation in a senior project on students’ perceptions of self-efficacy. The findings from this question indicate that the process of participating in the senior project increased students’ feelings of self-efficacy in future pursuits, particularly if the student planned to further his or her education by attending college. Ninety percent of the students in the study said that by participating in the senior project, they learned something that will help them in their future pursuits. This is significant to the problem of practice in two ways: as an effective way to help students stay focused on continuing their education, and as a means of bridging the gap between school and college or career.
Continuing education. All but two of the students in this study indicated that they planned to attend college after high school. One student planned to join the military and one student was undecided. Most of the students planning to attend college stated that the skills they learned during the senior project would be beneficial to them in college. The skills the students listed were those that Kathy, the capstone project program director, referred to as “soft skills.” Kathy states, “We have seven core skills that we are teaching students but within this project are what I call soft skills like time management. You need to learn time management for college.”

Indeed, when asked what one piece of advice the students of the senior class would give to juniors about the senior project, the majority of the students said that time management was the most important thing to learn. It did not appear that these students had learned how to manage their time as much as they had learned that the absence of time management skills created undue stress and confusion. The students in the study felt that the independent nature of the senior project gave them valuable experience in the skills they perceived as being important for college. Several students felt that the senior project experience helped to prepare them for college because they considered the structure of the senior project to be similar to learning experiences that they would encounter in the colleges they planned to attend. One student said she would take the project with her and recycle it in a college class.

Bridging school to career. Despite the fact that the majority of students in this survey plan to attend college after high school, some of the students felt that the senior project had given them a jump on their intended career by affording them the opportunity to network with professionals in their chosen fields. Several of the students discovered new skills they planned to use in their careers, skills they didn’t know they had. The community connection of a senior project, the presentation night when students demonstrate their learning in a public forum,
appears to be a powerful and positive experience for the students in this high school. Nearly every student mentioned the satisfaction they experienced during the capstone fair night.

The students stated that they enjoyed sharing their knowledge and skills in a way that made them feel as though they had mastered the twenty-first century skills of communication and collaboration. During the focus groups, the students spent a fair amount of time complaining about the injustice they had to endure as the first class to have to do a senior project. But once they got this behind them, they overwhelmingly agreed that the night of the capstone fair was a satisfying experience and seemed to erase the angst and stress from the previous months. One of the most beneficial aspects of the capstone night was the opportunity to receive feedback from a variety of adults.

**The value of feedback.** It appears that the opportunity to receive feedback from adults outside of the classroom was a valuable experience for these high school students. The students agreed that the feedback they received from the judges and attendees at the capstone fair far exceeded any grade they had received from a teacher in the classroom. What is significant is that some of the students perceived the capstone fair as the first opportunity they had in their high school career to show what they knew and what they could do. This suggests a need to examine the ways in which schools assess student learning and the accuracy and appropriateness of some of the more traditional measures of student learning that schools commonly use.

It was both heartening and discouraging to hear students say they were so proud of their accomplishments on the night of the capstone fair and that it was the first time they felt they could show what they were actually capable of and that it was the first time they felt that they had actually accomplished something. One wonders if this implies that the traditional teaching and learning models and more importantly, the traditional methods of assessment are accurate
representations of student learning. How much of student learning is missed due to our obsession with standardized accountability tests? And how important is it for schools to be sure to include ample opportunities for student demonstrations of knowledge and skill in a variety of ways?

**Discussion of the Findings in Relation to the Theoretical Framework**

This study applies engagement theory and efficacy theory as the two lenses through which a senior project is examined. The link between learning, engagement, and motivation informs the problem of practice by considering how engagement impacts student learning and consequently the opportunities for students after high school. Self-efficacy theory suggests that a strong connection exists between levels of efficacy and cognitive development, motivation, and engagement (Bandura, 1993; Betz, 2004; Maier & Curtain, 2005; Margolis & McCabe, 2006). These two theoretical lenses focus this study on the relationships between student engagement, learning, motivation, and feelings of efficacy in the context of a senior project.

**Engagement theory.** Engagement theory examines the relationship between student engagement and the learning process. Newman (1992), Fredericks, Blumenfeld, and Paris (2004), and others state that in order for students to be engaged, their learning must be active and they must feel a sense of commitment to what they are learning. Students are motivated to engage in activities in which they have a choice and in activities that have relevance to their lives (Jensen, 2005). The findings in this study relate to engagement theory in the following ways: the elements of this senior project design and the student, teacher, and administrator perceptions of student engagement during the senior project.

The design of the senior capstone project in this high school includes elements of student learning opportunities that are inquiry-based, relevant and collaborative in process. This senior
capstone project encourages students to choose an area of personal interest, thus building intrinsic motivation to deepen student engagement. The findings in this study indicate that students enjoy being engaged in learning opportunities that are directly linked to a topic of personal interest or relevance. These findings are consistent with the research on engagement theory that states students are motivated to engage in activities in which they have a choice and in activities that have relevance to their lives (Csikszentmihalyi, 1990; Jensen, 2005; Silver & Perini, 2010). The students stated that they found value in having the opportunity to pursue a topic of relevance to them on either a personal level or as something related to their future pursuits. In addition, the collaborative aspect of this senior project design provided students with feedback that was informative and affirming and students stated that the real-world application and presentation of knowledge and skill during the capstone fair night contributed to a sense of deeper learning.

**Self-efficacy theory.** Margolis and McCabe (2004), Dweck (2006) and others find that students who believe they can learn demonstrate higher levels of motivation and engagement in school because they sense a degree of control over the outcome of their efforts. “The concept of self-efficacy refers to one’s beliefs in one’s capabilities to successfully engage in a specific area of behavior” (Betz, 2004, p. 340). Self-efficacy theory states that there is a positive correlation between student hopeful attitudes toward the future and feelings of academic efficacy (Kenny et al., 2010).

The findings in this study are consistent with the constructs of self-efficacy theory. The students in this study concur that the senior project experience required independent learning skills and that this helped them to feel confident about their ability to be successful in their future pursuits. The findings also reveal that the senior project allowed students the chance to gain a
feeling of mastery in a topic of personal interest and this resulted in feelings of pride toward the accomplishment of something meaningful. Students stated that they felt better prepared to perform college level work and that they felt positive about their ability to be successful after high school. In addition, the students said that having the opportunity to demonstrate their knowledge in authentic and creative ways was affirming, as was the feedback they received from a variety of stakeholders. And finally, students responded that they developed important skills to support independent learning.

Another aspect of self-efficacy theory that is informed by the results of this study relates to its impact on shaping school climate (Goddard, Hoy & Hoy, 2004). The data from teachers and administrators reveal two emergent themes in relation to self-efficacy theory and the senior capstone project. These themes are a positive school climate and elevated student performances. The findings demonstrate that the student performances on the capstone fair nights positively impacted the school climate not only by offering a public display of student learning but also by demonstrating a perceived level of student performance that exceeded both teacher and administrator expectations. The teachers and administrators stated that students demonstrated elevated levels of knowledge on their topic and in the communication skills needed to share that knowledge.

The interplay of engagement and efficacy as agents to student learning is evident in the findings of this study. The results of this study relate to the theoretical frameworks of engagement and self-efficacy by demonstrating the value of linking relevant and independent learning experiences that provide students in the senior year of high school with the opportunity to be creative agents in their learning and in how they display their knowledge and skills.
Discussion of Findings in Relation to the Review of the Literature

The review of the literature for this study focuses on the causes and consequences of senioritis, engagement and learning, efficacy and learning, and senior project designs. The findings in this study relate to these themes in the following ways.

**Senioritis.** The literature on senioritis states that students tend to disengage from school during the second semester of their senior year (Connor, 2009; Dreis & Rehage, 2008; Lord, 2001; Henriksen, 2008; Krist & Venezia, 2004; Kuh, 2007; Sizer, 2002), and that as students lose interest in their studies they become bored with school. This disengagement can lead to decreased performance in school, loss of time on learning, and can jeopardize a student’s ability to be successful during the first semester of college. The literature states that students in their senior year of high school tend to lack motivation because school is no longer relevant to their lives.

The findings in this study indicate that the capstone senior project in this school was designed to engage students in their learning by encouraging them to choose a topic of personal interest and relevance. The school’s curricular design deliberately focused on linking course work with the real world as evidenced in the career academy design. The findings illustrate that students enjoyed participating in the senior project because it was a learning experience that held personal meaning and relevance.

However, one could argue that the stress students experienced during this inaugural senior project seemed to minimize the onset of senioritis during the winter and early spring semester in this high school because the students were too busy trying to catch up on completing a graduation requirement, having procrastinated and protested through much of the first semester. There is no evidence that because of the senior project, the students were more
academically prepared but there is evidence that due to the senior capstone project, senioritis was delayed.

**Engagement and learning.** Blumenfeld, Kempler and Krajcik (2006) state that for learning to happen, that is for an increase in skills and knowledge to occur, students must engage on a cognitive level. “Cognitive engagement mediates the ways in which values and needs relate to learning and achievement” (Blumenfeld, Kempler & Krajcik, 2006, p. 477). The authors conclude, “Motivation sets the stage for cognitive engagement” (Blumenfeld, Kempler & Krajcik, 2006, p. 476). Christensen, Horn and Johnson (2008), Greene et al. (2004), and Sousa (2006) are among the researchers who concur that motivation must be present in order for engagement and learning to be successful. “Unless students are motivated, they will reject the rigor of any learning task and abandon it before achieving success” (Christensen, Horn & Johnson, 2008, p. 7). Furthermore, the literature on the high school senior year suggests a correlation exists between levels of student engagement and career or college readiness (Marks, 2000; Connor, 2009; Jensen, 2005; Sousa, 2006; Greene et al., 2004). Therefore, if student engagement is to be effective in learning, the task must motivate the student on some level.

The findings in this study are inconclusive in supporting the link between motivation and learning. Although the students in the study state that they appreciate the opportunity to engage in a learning activity of their own design, there are no data from this study to indicate that their learning improved nor are there data that would indicate their improved readiness for college or career. However, the students did express the opinion that the skills of independent learning required to complete this senior project led to a perception of being successful in college.

**Efficacy and learning.** The literature states that high levels of efficacy aid students in reaching their goals (Bandura, 1997; Goddard, Hoy & Hoy, 2004; Miller, 2011). Self-efficacy
is the belief “in one’s capabilities to organize and execute the course of action required to produce given attainments” (Miller, 2011, p. 244). Thus a high level of self-efficacy not only helps students navigate their world but it also assists them when facing adversity and it gives them confidence in their ability to problem solve (Blumenfeld, Kempler & Krajcik, 2006; Greene et al., 2004; Miller, 2010). The findings of this study support the ideas of efficacy and learning. The information gathered in the student survey and focus groups demonstrate that the students experienced increased levels of efficacy about their future pursuits as a result of their participation in the senior project. The students state that they felt more confident about their success in the future as a direct result of having completed the senior project. The student responses indicate that they learned how to be more independent in their learning, and that they gained confidence in their ability to communicate and collaborate. The students also state that because of their participation in the senior project, they felt a sense of pride in their accomplishments.

These results are significant in two ways. They support the literature on student efficacy and learning and they inform the practitioner on curricular designs and instructional methods that improve student perceptions of self-efficacy in their future pursuits. This is an important concept to consider when determining programs for high schools in an effort to keep students engaged and provide opportunities for their success.

**Senior project.** In its 2001 report, the National Commission on the High School Senior Year contends that seniors should have alternatives to the traditional high school program of studies and recommends that all seniors complete a capstone project, internship, or community service activity. The senior project requires that students move beyond the confines of the traditional curriculum and make meaning out of their learning. Dreis and Rehage (2008) state
that programs that help to develop the leadership skills, independence, and self-knowledge of students in the senior year include a senior instructional leadership opportunity, a senior project, and a service learning option. The findings of this study support the literature on senior project. In the focus groups, students state that they gained independence and self-knowledge as a result of the senior project experience. Some students stated that they learned more about themselves than they did their topic and that they found this to be a valuable learning outcome and one that would be useful in achieving future goals.

The components of the senior project include student choice, independence, and relevance. Students have the chance to be creative in their learning and to extend beyond the classroom walls to gain knowledge and skill in an area of personal interest. These characteristics are consistent with those mentioned in the literature on how to keep students engaged in school, and on programmatic models that foster feelings of efficacy so that students can learn and be successful as independent learners.

**Limitations**

This study focuses on students in one high school as they experience the senior project and looks at how this impacts their perceptions of engagement and efficacy. Therefore, the limitations of the study are defined by the size of the data set and the focus of the research questions.

The study is limited to the populations of one high school and the data set represents 6% of the senior class and just over 30% of the senior project advisors. Although this limits the external validity of the results it is still noteworthy that 88% of the students in the study stated that the senior project experience, in the end, was a worthwhile one because they perceived that it gave them skills for the future.
One other significant limitation pertains to the fact that this study documents the inaugural year of the high school’s senior project. Some data appear to be linked to the presence of stress, an inevitable occurrence during times of change. However, results from this study may inform curricular, instructional, and evaluative structures that engage and motivate students and support their sense of self-efficacy beyond high school.

**Future Research Considerations**

One of the consequences of senioritis is perceived to be the growing numbers of students who need remediation in writing and mathematics once they enter college. The call for programs that do a better job of engaging students during the senior year use this lack of college readiness as a justification to increase the academic rigor right up to graduation. The idea of keeping students engaged in school by having a senior project program does not guarantee they will acquire the skills needed to prevent remediation once the students begin college-level work.

Therefore a longitudinal comparative study of students who both participated in a senior project and those that did not would inform the problem of practice. A study that tracks the performance through the first semester of freshman year of college for students who are products of a senior project and for those who are not would provide more insight into the impact of a senior project on student learning.

**Significance of the Study**

The trend toward experiential learning and non-traditional demonstrations of student knowledge embodies the tenants of twenty-first century skills and gives students the tools they need to compete in the future (Freidman, 2007; Trilling & Fadel, 2009). One of the theories for student disengagement is the impact the standards-based accountability movement has had on the narrowing of curricula and the elimination of electives (Asch, 2010; Rosenbusch, 2005). This
impacts student learning by limiting the opportunities for students to connect their learning to an area of interest and relevance. It is therefore fitting that the idea for a senior project in this high school grew out of a meeting of the fine arts department, a course of study focused more on active performance of skills than on a traditional method of assessment such as a written exam.

The fact that the problem of seniors in high school disengaging from their studies actually has a name, senioritis, is testimony to the apparent acceptance of this attitude in U.S. high schools (Kirst & Venezia, 2004). The senior class in a high school sets the tone for the year and has a role in leading school climate and culture in both positive or negative directions (Sizer, 2002). Therefore, if the senior class is disengaged from school and if teachers of seniors accept that senioritis is a fact of high school, then the risk of lowering expectations for student performance becomes a reality.

What is significant in the findings of this study is that the faculty saw the senior capstone project nights as positive experiences that could improve the climate of the school and eventually change the culture to reflect an environment of high expectations and a celebration of student learning. All of the adults who were interviewed in this study expressed their delight in the student products they saw on the capstone fair nights. But it was Paul, a teacher in the humanities academy who pointed out the potential for impacting school culture. He states:

The culture to date in this community has been very sports-centric. We have stellar academically performing kids but to get the community into the building it has to be a football game or a basketball game or something like that. On the night of the capstone the building was packed with adults coming in and other students coming in to see the academic work of the students.
He continues to express his hope that in years to come, students in the lower grades will see the capstone as a way to connect their courses throughout their high school career and that over time, this will create a culture of academic excellence not to replace the strong presence of the sports programs but more to balance them.

**Conclusion**

The majority of participants of this study, students and teachers alike, agreed that the senior project experience in this high school provided a relevant and meaningful learning opportunity that increased knowledge and skills in an area of personal interest and resulted in a sense of self-efficacy toward pursuits after high school. Based on the research relating student engagement to the structures and components inherent in senior projects, and based on the evidence of programs that share common characteristics like senior projects regarding student instrumentality and choice, it appears that a senior project can be an effective curriculum model for high schools to consider in order to maximize student learning during the second half of the senior year. When asked, most of the students and all of the teachers and administrators stated that the senior project was a worthwhile endeavor and one that they felt other schools should embrace. As to the issue of avoiding senioritis, a senior project might prove to delay what has come to be considered a rite of passage in high schools across the country. As one student said, “Once capstone is done, I’m done.”
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Appendix A

Letter to School Superintendent and High School Principal

Dear Superintendent [Name],

My name is Carla Blanchard and I am the director of curriculum, instruction, and assessment for the districts of the Chatham and Harwich Public Schools. I am currently working on my doctoral thesis in curriculum leadership at Northeastern University. I am conducting a study on students’ perceptions of engagement and self-efficacy during participation in a senior project. I have identified the [name of district] because of your exemplary senior project program model.

This study involves collecting data from students, teachers, and administrators and I am requesting permission to solicit voluntary participation from your staff and students. The data collection will involve two instruments, an online survey and face-to-face interviews. The total time commitment from individual participants will not exceed one hour.

All willing participants (and their parents, where necessary) will be asked to sign consent forms. I have included copies of the online survey instrument as well as the interview questions that will be used to collect the data for this study.

The two districts for which I work are on the cusp of becoming a fully operational, newly formed regional school district in July of this year. It is my hope that the new region will include a senior project as part of its graduation requirements. Therefore I am very interested to understand how your senior project model impacts student engagement and student perceptions of future success. It is my belief that programs such as a senior project offer relevant and real-world learning experiences that can equip students with the skills and knowledge they need in order to be successful in the twenty-first century.

Please feel free to contact me at [phone number] should you require additional information.

Sincerely,

Carla Blanchard
Director of Curriculum, Instruction, and Assessment
Chatham and Harwich Public Schools
81 Oak Street
Harwich, MA 02645
Appendix B

Informed Consent Form

Northeastern University, College of Professional Studies

Investigators Name: Carla Blanchard and Dr. Chris Unger

Title of Project: Understanding Student Perceptions of Engagement and Efficacy During Senior Project

Informed Consent to Participate in a Research Study
I am inviting you to take part in a research study. This form will tell you about the study, but the researcher will explain it to you first. You may ask this person any questions that you have. When you are ready to make a decision, you may tell the researcher if you want to participate or not. You do not have to participate if you do not want to. If you decide to participate, the researcher will ask you to sign this statement and will give you a copy to keep. If you are under the age of 18, you must have this form signed by your parent or legal guardian.

Why am I being asked to take part in this research study?
You are being asked to participate in this study because you are either a student who is participating in a senior project or you are a teacher or administrator involved with the education of the high school seniors in your building.

Why is this research study being done?
The purpose of this study is to determine whether a senior project curriculum is effective in keeping students engaged in their learning during the second half of high school and how participation in a senior project affects students’ perceived levels of self-efficacy.

What will I be asked to do?
If you are a student you will be asked to:
• Complete an online survey asking you to rate your feelings regarding your participation in your senior project.
• Take part in a student focus group where you can respond to questions regarding your perceptions of the experience of participating in the senior project.

If you are a teacher you will be asked to:
• Complete an online survey asking you to rate your feelings regarding your participation in your senior project.
• Take part in a teacher focus group where you can respond to questions regarding your feelings of participating in the senior project.

If you are an administrator you will be asked to take part in a one-on-one interview regarding your feelings relative to your participation in the senior project.

All focus groups and interviews will be audio taped for transcription and analysis and to allow the researcher to be fully engaged in the discussion.

Where will this take place and how much of my time will it take?
Interviews and focus groups will take place at school during a convenient time. The interviews will last no longer than one half hour, and the focus groups will not exceed 30 minutes. The teacher and student online surveys will take approximately 10 minutes.

*Will there be any risk or discomfort to me?*
There are no foreseeable risks involved in taking part in this study.

*Will I benefit by being in this research?*
There will be no direct benefit to you for taking part in the study. However, the information learned from this study may help schools better understand the relationship between curriculum design and student engagement.

*Who will see the information about me?*
Your participation in this study will be handled in a confidential manner. No reports or publications will use the information in any way that can identify you, your school, or any individual in the school. All audiotapes will be destroyed after analysis.

*If I do not want to take part in the study, what choices do I have?*
Participation in the study is voluntary and you may withdraw at any time. And you can refuse to answer any question. In addition, you will not be putting your name on anything except for this form and all results will be reported anonymously. Your decision to participate or not will have no effect on your standing in the school.

*Who can I contact if I have any questions or problems?*
Carla Blanchard
Northeastern University doctoral student
(508) 221-1163
blanchard.c@husky.neu.edu

Chris Unger, Ed.D
Principal Investigator-Overseeing Study
Northeastern University, Boston
Campus # 617-373-2400
c.unger@neu.edu

*Who can I contact about my rights as a participant?*
If you have any questions about your rights as a participant, you may contact Nan C. Regina, Director, Human Subject Research Protection, 960 Renaissance Park, Northeastern University, Boston, MA 02115 tel. 617-373-4588, email: irb@neu.edu. You may call anonymously if you wish.

*Will I be paid for my participation?*
There is no compensation for participation in this study.

*Will it cost me anything to participate?*
There is no cost to participate in this study.

I have read, understood and had the opportunity to ask questions regarding this consent form. I agree to participate in this study.

________________________________________                                   ________________
Research Participant (Printed Name)                                          Date
Research Participant (Signature)

If you are a student or teacher, please provide your email address so you can access the online survey.

________________________________________
Email address

__________________________________________
Parent/Guardian’s signature if participant is under 18 years of age  Date

__________________________________________
Printed name of person above
Appendix C

Online Survey Statements for Students

Rating scale:

1 = strongly disagree; 2 = disagree; 3 = neither agree nor disagree; 4 = agree; 5 = strongly agree

1. The senior project is a valuable learning experience.
2. My senior project topic relates to my future pursuits.
3. I enjoy working on my senior project.
4. I would prefer to be in a traditional classroom than participate on my senior project.
5. My senior project will help me achieve my goals after high school.
6. I have learned more as a result of my senior project than I would if I were sitting in a classroom.
7. My senior project will not be useful to me in my future pursuits.
8. I plan to attend college after high school.
9. I plan to enter the workforce after high school.
10. The senior project has helped me to know what I want to do after high school.
11. Participation in the senior project has helped to prepare me for my future.
12. I feel as though I am able to be successful in my future pursuits.
Appendix D

Online Survey Statements for Teachers

Rating scale:

1= strongly disagree; 2= disagree; 3= neither agree nor disagree; 4= agree; 5= strongly agree

1. The senior project is a valuable learning experience.
2. The senior project topics are relevant to the students.
3. Students appear to be engaged in their senior project work.
4. The senior project does not impact my teaching.
5. Senioritis is a problem in our school.
6. The senior project is appropriate for all students in the senior class.
7. The senior project increases student-learning opportunities.
8. The senior project is useful in helping students prepare for their futures.
9. The senior project is a valuable use of a student’s time in school.
10. The senior project program positively impacts our school climate.
Appendix E

Senior Capstone Project Components

• A topic that is pathway-related, rigorous and that answers a central question.

• A capstone portfolio that includes 20 journal entries, 10 annotated bibliographies, and a MLA formatted bibliography with 15-20 sources.

• A presentation of the project at the capstone fair that includes a tri-fold poster showing the title of project, the central question, the student-derived answer to central question, cited research, visual documentation of process, any visual aids or manipulative and demonstration of the use of technology.

• A 3 to 4 page reflection paper that identifies how the project demonstrates a command of the core 21st century skills.
Appendix F

List of Project Topics

Sleep deprivation and cognitive development
Teaching techniques
Marketing and advertising
Walk for Alzheimer’s
Criminal behavior and heredity
History of printing machines
Bioengineering and running shoes
Comic book publishing
Physical activity and learning
Non-smoking awareness campaign in a middle school
The creative mind
Anti-bully awareness campaign
Sports management
Architectural design
Disc jockeys and dance music
Post-traumatic stress disorder
Municipal fund-raising
Athletes as role models
Personal training and health